

# Selection guide 2019.

Discretes, Logic and MOSFETs



nexperia

EFFICIENCY WINS.

# Introduction

Welcome to the 2019 edition of the Nexperia Selection Guide. Here we present all our Discrete, Logic and MOSFET devices in one single document to give you a complete overview of our portfolio. We hope that makes it even easier for you to find the right product for your design.

Our extensive portfolio offers a wide range of general purpose devices and those that meet the stringent standards set by the automotive industry. They are housed in some of the most advanced, industry-leading small packages that combine power and thermal efficiency with best-in-class quality levels.

Alongside quality and efficiency, Nexperia customers value reliability and a consistent supply they can trust. We produce consistently reliable semiconductor components at high volume (Over 90 billion annually) and we work at every step to safeguard the long-term availability of our manufacturing processes and products, to ensure secure supply for all our customers.

We have a long history and broad experience. That ensures we can support you with the dedicated in-house technical support you need – from simplifying selection via quick-reference material to simple-to-use design tools and application insights. All to help drive up efficiency in your designs.

## All the functionality you need in one spot

Just like on our website, you will find the selection guide is split into our five key product areas. There is also a dedicated section on packages, highlighting the latest package innovations and packing options.

### Bipolar transistors

- › Resistor-equipped, low  $V_{CEsat}$  and small-signal transistors
- › Standard SMD, leadless and clip-bond packages

### Diodes

- › Broad choice of Zener, Schottky and switching diodes
- › Ultra-small, low-profile surface-mount package options

### ESD protection, filtering and signal conditioning

- › Extensive range of protection in ultra-small form factors
- › Optimized for signal integrity, robustness and system protection

### MOSFETs

- › Low  $R_{DSon}$  devices from < 20 V to > 200 V
- › True power packages with solid wireless-clip for smart efficiency

### Logic

- › Comprehensive portfolio operating from 0.7 V to 15.0 V
- › Unrivalled package innovation and lowest power logic solutions

### Packages

- › The next generation of packaging for volume production
- › Package cross-reference and packing options

As an innovative company we are continually adding to our product portfolio, so to discover all our latest product information you should visit our website – [www.nexperia.com](http://www.nexperia.com)

# Our commitment: quality and reliability



## AEC-Q100/Q101 qualified

We qualify our products according to the automotive AEC-Q100/Q101 standard and even exceed it's requirements, for instance when doing extended lifetime testing.



## Go for quality

All our processes and manufacturing plants are subject to regular international and internal audits, including the following:

- › ISO9001
- › ISO/TS 16949 for automotive sites
- › ISO14001
- › OHSAS18001



## Design for excellence

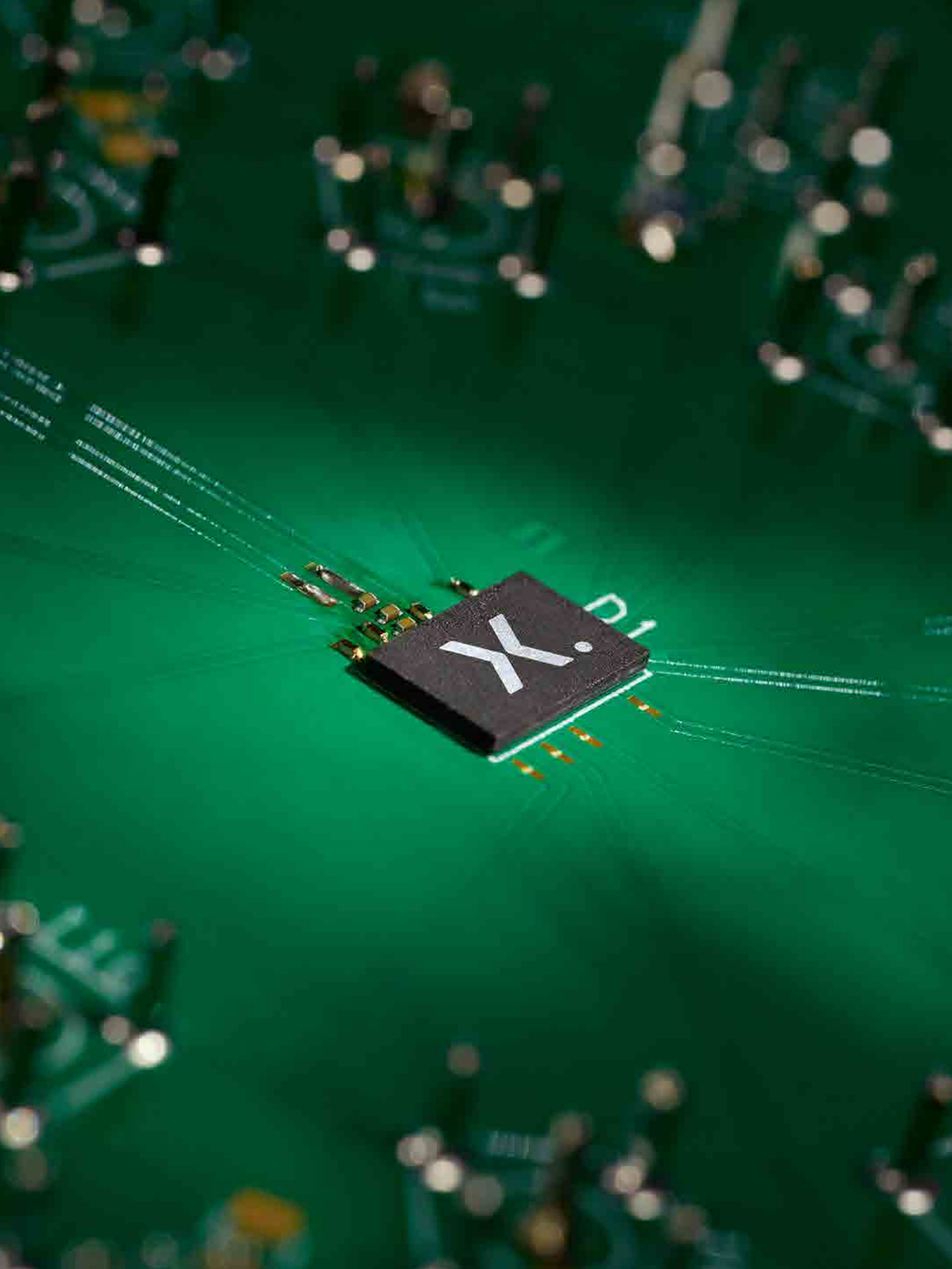
Nexperia's Design for Excellence (DfX) program ensures that each new development builds on past learning and that best practices are always employed. The result is continual product improvement.



## Zero defect

Zero defect is our goal. To ensure continuous improvement failure analysis and the determination to find root causes is performed at all stages of development and production by adoption of quality-analysis tools and methods (e.g. Six-Sigma, Safe-Launch).

**Rigorous attention to detail and commitment to quality have yielded a very low product failure rate of a single-digit part per billion (ppb).**



# Selection guide 2019

## Discretes, Logic and MOSFETs

Bipolar  
transistors

1

Diodes

2

ESD protection,  
TVS, filtering  
and signal  
conditioning

3

MOSFETs

4

Logic

5

Packages

6

|   |    |
|---|----|
| New products .....  | 8  |
| Bipolar transistors.....                                    | 8  |
| Diodes .....  | 8  |
| ESD protection, TVS, filtering and signal conditioning..... | 9  |
| MOSFETs.....  | 10 |
| Logic.....  | 11 |

## Bipolar transistors 13

|  |           |
|--|-----------|
| <b>General purpose bipolar transistors.....</b>                                    | <b>14</b> |
| Transistors single NPN.....  | 14        |
| Transistors single PNP.....  | 14        |
| High performance transistors (superior power dissipation) .....                    | 15        |
| Transistors double.....  | 15        |
| Switching transistors single.....  | 16        |
| Switching transistors double .....   | 16        |
| Medium power transistors high performance (175 °C capable)...                      | 17        |
| NPN High performance transistors (175°C capable & superior power dissipation)..... | 17        |
| PNP High performance transistors (175°C capable & superior power dissipation)..... | 17        |
| Medium power transistors.....  | 18        |
| High voltage transistors.....  | 18        |
| LED driver.....  | 19        |
| LED driver NPN.....  | 19        |
| Constant current source.....   | 19        |
| Darlington transistors.....  | 20        |
| Schmitt triggers.....  | 20        |
| Low noise transistors.....   | 20        |
| Matched pair transistors .....   | 21        |
| MOSFET driver .....  | 22        |
| Medium frequency transistors .....   | 22        |
| <b>Low <math>V_{CEsat}</math> (BISS) transistors.....</b>                          | <b>23</b> |
| Low $V_{CEsat}$ (BISS) transistors single NPN up to 2000 mW.....                   | 23        |
| Low $V_{CEsat}$ (BISS) transistors single NPN up to 750 mW.....                    | 24        |
| Low $V_{CEsat}$ (BISS) transistors single PNP up to 2000 mW.....                   | 25        |
| Low $V_{CEsat}$ (BISS) transistors single PNP up to 750 mW .....                   | 26        |
| Low $V_{CEsat}$ (BISS) transistors double.....                                     | 27        |
| Low $V_{CEsat}$ (BISS) transistors load switches.....                              | 28        |
| Low $V_{CEsat}$ (BISS) high voltage transistors.....                               | 29        |
| Low $V_{CEsat}$ (BISS) RETs .....  | 29        |
| Low $V_{CEsat}$ (BISS) transistors PNP - N-channel MOSFET combination .....        | 30        |
| Low $V_{CEsat}$ (BISS) power transistors single .....                              | 30        |
| Low $V_{CEsat}$ (BISS) power transistors double .....                              | 30        |
| <b>Resistor equipped transistors (RETs) .....</b>                                  | <b>31</b> |
| RETs 100 mA single .....   | 31        |
| RETs 100 mA double .....   | 32        |
| RETs 500 mA single / double .....  | 32        |
| <b>3-terminal adjustable shunt regulators .....</b>                                | <b>33</b> |

## Diodes 35

|   |           |
|---|-----------|
| <b>Zener diodes.....</b>                                      | <b>36</b> |
| General purpose Zener diodes .....                            | 36        |
| Zener diodes specifications .....                             | 37        |
| <b>Switching diodes .....</b>                                 | <b>38</b> |
| General purpose, high speed switching diodes $\leq 90V$ ..... | 38        |
| General purpose, high speed switching diodes 100V .....       | 38        |
| General purpose, switching diodes $\geq 100V$ .....           | 39        |
| Controlled avalanche switching diodes.....                    | 40        |
| Low leakage current switching diodes.....                     | 40        |
| <b>Recovery rectifiers .....</b>                              | <b>41</b> |

|  |           |
|--|-----------|
| Recovery rectifiers - Automotive qualified .....   | 41        |
| Nomenclature recovery rectifiers automotive grade types.....                                     | 41        |
| <b>Schottky diodes and rectifiers .....</b>  | <b>42</b> |
| General purpose Schottky diodes $\leq 250$ mA .....  | 42        |
| Low capacitance Schottky diodes .....  | 43        |
| Medium power low VF Schottky rectifiers single $\geq 200$ mA - leadless DSN / DFN packages ..... | 44        |
| Medium power low VF Schottky rectifiers single $\geq 200$ mA ...                                 | 46        |
| Medium power low VF Schottky rectifiers single $\geq 200$ mA - leaded packages .....             | 47        |
| Medium power low VF Schottky rectifiers dual $\geq 200$ mA .....                                 | 48        |
| <b>Nomenclatures .....</b>   | <b>49</b> |

## ESD protection, TVS, filtering and signal conditioning 51

|  |           |
|--|-----------|
| <b>Low capacitance ESD protection for high-speed interfaces. 52</b>                  |           |
| USB 3.x and eSATA protection and filtering for high-speed and super-speed lines..... | 54        |
| Low capacitance ESD protection for high-speed interfaces - HDMI2.0, DisplayPort..... | 55        |
| TREOS protection devices.....  | 56        |
| TREOS2 protection devices.....   | 56        |
| <b>General ESD protection devices.....</b>   | <b>57</b> |
| <b>Application-specific ESD solutions .....</b>                                      | <b>61</b> |
| Audio interface protection .....   | 61        |
| Automotive high-speed network protection.....  | 62        |
| Automotive in-vehicle network bus line protection.....                               | 62        |
| Battery and charger port protection.....   | 63        |
| HDMI and display port protection .....   | 63        |
| <b>EMI solutions with integrated protection .....</b>                                | <b>64</b> |
| Antenna protection (NFC, WiFi,...) .....   | 64        |
| USB and SATA protection.....   | 64        |
| Common mode filter for USB 2.0 .....   | 64        |
| Common mode filter for USB 3.x .....   | 65        |
| Common mode filter for HDMI and MIPI .....   | 65        |
| HDMI signal conditioning.....  | 66        |
| LCD and camera RC filter with integrated protection .....                            | 66        |
| Memory and SIM card filter with integrated protection .....                          | 66        |
| <b>Transient voltage surge suppressor (TVS).....</b>                                 | <b>67</b> |
| TVS diodes for mobile applications .....   | 67        |
| TVS diodes, 24 W/40 W (automotive).....  | 67        |
| TVS diodes, 400 W.....   | 68        |
| TVS diodes, 600 W.....   | 69        |
| <b>Nomenclatures .....</b>   | <b>70</b> |

## MOSFETs 73

|   |           |
|---|-----------|
| <b>Automotive MOSFETs.....</b>                            | <b>74</b> |
| Automotive grade MOSFETs nomenclature .....               | 74        |
| N-channel 30V automotive power MOSFETs.....               | 74        |
| N-channel 40V automotive power MOSFETs.....               | 75        |
| N-channel 55V-60V automotive power MOSFETs.....           | 77        |
| N-channel 75V-80V automotive power MOSFETs.....           | 79        |
| N-channel 100V automotive power MOSFETs.....              | 80        |
| P-channel 30V-60V automotive power MOSFETs .....          | 81        |
| Small-signal automotive MOSFETs – Low $R_{DS(on)}$ .....  | 82        |
| Small-signal automotive MOSFETs – High $R_{DS(on)}$ ..... | 84        |
| Small-signal automotive MOSFETs – Dual.....               | 84        |
| Small-signal MOSFETs complementary .....                  | 84        |
| <b>Power MOSFETs .....</b>                                | <b>86</b> |

# Contents

|  |           |
|--|-----------|
| N-channel 25V-30V Power MOSFETs.....   | 86        |
| N-channel 40V-60V Power MOSFETs.....   | 88        |
| N-channel 75V-200V Power MOSFETs.....  | 90        |
| P-channel Power MOSFETs.....   | 92        |
| Power MOSFETs nomenclature.....  | 93        |
| <b>Small-signal MOSFETs.....</b>   | <b>94</b> |
| Small-signal MOSFETs in DFN1006 and DFN1006B packages... ..                    | 94        |
| Small-signal MOSFETs in DFN0606.....   | 94        |
| Small-signal MOSFETs in DFN1010D-3 single and DFN1010B-3<br>dual packages..... | 95        |
| Small-signal low-leakage MOSFETs.....  | 95        |
| Small-signal MOSFETs in DFN2020MD-6 single and DFN2020-6<br>dual packages..... | 96        |
| Small-signal MOSFETs in WLCSP4 and WLCSP6 packages.....                        | 97        |
| Small-signal MOSFETs single (N-channel).....                                   | 98        |
| Small-signal MOSFETs single (P-channel).....                                   | 100       |
| Small-signal MOSFET-Schottky combination.....                                  | 100       |
| Small-signal MOSFETs dual.....   | 102       |
| Small-signal MOSFETs complementary.....  | 102       |
| Small-signal MOSFETs nomenclature.....   | 104       |

## Logic 107

|  |            |
|--|------------|
| Automotive logic.....                                  | 108        |
| <b>Q100 Standard logic functions and packages.....</b> | <b>108</b> |
| Analog switches.....                                   | 108        |
| Buffers/Inverters.....                                 | 109        |
| Counters/Frequency dividers.....                       | 111        |
| Bus switches.....                                      | 112        |
| Digital decoders/Demultiplexers.....                   | 112        |
| Digital multiplexers.....                              | 113        |
| Flip-flops.....  | 113        |
| Gates.....   | 115        |
| Latches/Registered drivers.....                        | 117        |
| Level shifters/Translators.....                        | 118        |
| Multivibrators.....                                    | 118        |
| Schmitt-triggers.....                                  | 119        |
| Shift registers.....                                   | 120        |
| Transceivers.....                                      | 122        |
| <b>Q100 mini logic functions and packages.....</b>     | <b>123</b> |
| Analog switches.....                                   | 123        |
| Bus switches.....                                      | 123        |
| Buffers/Inverters.....                                 | 124        |
| Digital decoders/Demultiplexers.....                   | 126        |
| Digital multiplexers.....                              | 126        |
| Flip-flops.....  | 126        |
| Gates.....   | 127        |
| Latches/Registered drivers.....                        | 128        |
| Multivibrators.....                                    | 129        |
| Level shifters/Translators.....                        | 130        |
| Asynchronous interface logic.....                      | 131        |
| Buffers/Inverters/Drivers.....                         | 131        |
| Schmitt-triggers.....                                  | 138        |
| Transceivers.....                                      | 141        |
| Voltage translators (level-shifters).....              | 142        |
| I/O expansion.....                                     | 145        |
| Analog Switches.....                                   | 145        |
| Bus Switches.....                                      | 146        |
| Decoders/Demultiplexers.....                           | 147        |
| Digital Multiplexers.....                              | 148        |
| Shift Registers.....                                   | 148        |
| Synchronous interface logic.....                       | 150        |

|                                  |            |
|----------------------------------|------------|
| Latches/Registered drivers.....  | 150        |
| Flip-flops.....                  | 152        |
| FIFO registers.....              | 154        |
| Counters/frequency dividers..... | 154        |
| Multivibrators.....              | 155        |
| Phase-locked loops.....          | 155        |
| <b>Control logic.....</b>        | <b>156</b> |
| AND Gates.....                   | 156        |
| Combination Gates.....           | 157        |
| Configurable Gates.....          | 157        |
| EXCLUSIVE-NOR Gates.....         | 158        |
| EXCLUSIVE-OR Gates.....          | 158        |
| NAND Gates.....                  | 158        |
| NOR Gates.....                   | 160        |
| OR Gates.....                    | 161        |
| Digital comparators.....         | 162        |
| Parity generators-checkers.....  | 162        |
| <b>Nomenclatures.....</b>        | <b>163</b> |

## Packages 165

|  |            |
|--|------------|
| <b>Package details and packing methods.....</b>                              | <b>166</b> |
| Package details and packing methods SMD.....                                 | 166        |
| Package details and packing methods WLCSP.....                               | 170        |
| Packing details glass diodes, single ended and through<br>hole packages..... | 170        |
| <b>Package cross reference.....</b>  | <b>171</b> |
| Package cross reference list.....  | 171        |
| Package cross reference matrix.....  | 176        |
| <b>Competitive cross reference - Logic.....</b>                              | <b>178</b> |
| <b>Packing methods.....</b>  | <b>180</b> |
| Product orientation (tape and reel pack).....                                | 180        |
| <b>Minimized outline drawings and reflow soldering foot-<br/>print.....</b>  | <b>183</b> |
| 2-pin SMD packages.....  | 183        |
| 3-pin SMD packages.....  | 187        |
| 4-pin SMD packages.....  | 190        |
| 5-pin SMD packages.....  | 192        |
| 6-pin SMD packages.....  | 193        |
| 7-pin SMD packages.....  | 196        |
| 8-pin SMD packages.....  | 196        |
| 10-pin SMD packages.....   | 200        |
| 12-pin SMD packages.....   | 201        |
| 14-pin SMD packages.....   | 201        |
| 16-pin SMD packages.....   | 202        |
| 20-pin SMD packages.....   | 203        |
| 24-pin SMD packages.....   | 204        |
| 32-pin SMD packages.....   | 205        |
| 48-pin SMD packages.....   | 205        |
| 56-pin SMD packages.....   | 205        |
| <b>Index.....</b>  | <b>206</b> |

## New products

As an innovative company we invest significantly in R&D, and continually expand our portfolio with the latest generation of technology and products. Here is a snapshot of our most recent releases, but don't forget to visit the website for the most up-to-date information - [www.nexperia.com](http://www.nexperia.com)

## Bipolar transistors

| Category                            | Device             | Description  | Page |
|-------------------------------------|--------------------|--|------|
| General purpose bipolar transistors | <b>PMBTA06</b>     | 500 mA NPN transistor in a SOT23 plastic package   | 14   |
|                                     | <b>PMSTA06</b>     | 500 mA NPN general-purpose transistor in a SOT323 plastic package  | 14   |
|                                     | <b>PMBT2222AM</b>  | 40V, 600 mA NPN switching transistor in an ultra small DFN1006-3 (SOT883) leadless Surface-Mounted Device (SMD) plastic package.   | 16   |
|                                     | <b>PMBT2907AM</b>  | 60V, 600 mA PNP switching transistor in an ultra small DFN1006-3 (SOT883) leadless Surface-Mounted Device (SMD) plastic package.   | 16   |
|                                     | <b>PMBT2222AMB</b> | 40V, 600 mA NPN switching transistor in an ultra small DFN1006B-3 (SOT883B) leadless Surface-Mounted Device (SMD) plastic package.                                       | 16   |
|                                     | <b>PMBT2907AMB</b> | 60V, 600 mA PNP switching transistor in an ultra small DFN1006B-3 (SOT883B) leadless Surface-Mounted Device (SMD) plastic package.                                       | 16   |
|                                     | <b>PMBT3904QA</b>  | 40V, 200 mA NPN switching transistor in an ultra small DFN1010D-3 (SOT1215) leadless Surface-Mounted Device (SMD) plastic package with visible and solderable side pads. | 16   |
|                                     | <b>PMBT2222AQA</b> | 40V, 600 mA NPN switching transistor in an ultra small DFN1010D-3 (SOT1215) leadless Surface-Mounted Device (SMD) plastic package with visible and solderable side pads. | 16   |
|                                     | <b>PMBT2907AQA</b> | 60V, 600 mA PNP switching transistor in an ultra small DFN1010D-3 (SOT1215) leadless Surface-Mounted Device (SMD) plastic package with visible and solderable side pads. | 16   |
|                                     | <b>PMBT3904RA</b>  | 40V, 200 mA Double NPN switching transistor in an ultra small DFN1412-6 (SOT1268) leadless Surface-Mounted Device (SMD) plastic package.                                 | 16   |
|                                     | <b>BC807-16H</b>   | 175 deg C capable PNP transistor in SOT23 with 500 mA and 45V  | 17   |
|                                     | <b>BC807-25H</b>   | 175 deg C capable PNP transistor in SOT23 with 500 mA and 45V  | 17   |
|                                     | <b>BC807-40H</b>   | 175 deg C capable PNP transistor in SOT23 with 500 mA and 45V  | 17   |

## Diodes

| Category            | Device                                     | Description   | Page |
|---------------------|--|---|------|
| Switching Diodes    | <b>BAS521B</b>                             | High-voltage switching diode, in an ultra small SOD523 (SC-72) flat lead Surface-Mounted Device (SMD) plastic package.  | 39   |
|                     | <b>BAV21QA</b>                             | 200V dual common cathode high-voltage switching diode in a leadless ultra small DFN1010D-3 (SOT1215) package with solderable side pads  | 39   |
|                     | <b>BAV23QA</b>                             | Dual common cathode high-voltage switching diode, encapsulated in a leadless ultra small DFN1010D-3 (SOT1215) Surface-Mounted Device (SMD) plastic package with visible and solderable side pads. | 39   |
| Recovery rectifiers | <b>PNE20020EP</b>                          | 200V, 2 A hyperfast Recovery rectifiers in a small and flat lead CFP5 package.  | 41   |
|                     | <b>PNE20030EP</b>                          | 200V, 3 A hyperfast Recovery rectifiers in a small and flat lead CFP5 package.  | 41   |
|                     | <b>PNE20010ER</b>                          | 200V, 1 A hyperfast Recovery rectifiers in a small and flat lead SOD123W package.   | 41   |
|                     | <b>PNE20020ER</b>                          | 200V, 2 A hyperfast Recovery rectifiers in a small and flat lead SOD123W package.   | 41   |
| Schottky rectifiers | <b>PMEG3001EEF</b>                         | 30V, 0.1 A low VF Schottky Rectifier in DFN0603-2   | 45   |
|                     | <b>PMEG3002EEF</b>                         | 30V, 0.2 A low VF Schottky Rectifier in DFN0603-2   | 45   |
|                     | <b>PMEG3005EEF</b>                         | 30V, 0.5 A low VF Schottky Rectifier in DFN0603-2   | 45   |
|                     | <b>PMEG60T10ELP</b>                        | 60V, 1 A Trench Schottky Rectifier in CFP5  | 46   |
|                     | <b>PMEG60T20ELP</b>                        | 60V, 2 A Trench Schottky Rectifier in CFP5  | 46   |
|                     | <b>PMEG60T30ELP</b>                        | 60V, 3 A Trench Schottky Rectifier in CFP5  | 46   |
|                     | <b>PMEG60T50ELP</b>                        | 60V, 5 A Trench Schottky Rectifier in CFP5  | 46   |
|                     | <b>PMEG60T10ELR</b>                        | 60V, 1 A Trench Schottky Rectifier in CFP3  | 46   |
| <b>PMEG60T30ELR</b> | 60V, 3 A Trench Schottky Rectifier in CFP3 | 46  |      |



## ESD protection, TVS, filtering and signal conditioning

| Category   | Device               | Description  | Page       |
|--|----------------------|--|------------|
| Low capacitance ESD protection for high-speed interfaces | <b>PESD2V0Y1BSF</b>  | Low peak voltage 2V single-line bidirectional ESD protection   | 52         |
|  | <b>PESD2V5Y1BSF</b>  | Low peak voltage 2.5V single-line bidirectional ESD protection                                       | 52, 55     |
|  | <b>PESD3V3Y1BSF</b>  | Low peak voltage 3.3V single-line bidirectional ESD protection                                       | 52, 55     |
|  | <b>PESD3V3Z1BCSF</b> | High-surge rating 3.3V single-line bidirectional ESD protection                                      | 52, 55     |
|  | <b>PESD3V3W1BCSF</b> | High-surge rating 3.3V single-line bidirectional ESD protection                                      | 52, 55, 56 |
|  | <b>PESD4V0Y1BSF</b>  | Low peak voltage 4V single-line bidirectional ESD protection   | 52         |
|  | <b>PESD4V0Z1BSF</b>  | high surge robustness low capacitance ESD protection for USB3.2                                      | 52, 56     |
|  | <b>PESD4V0Z1BCSF</b> | High-surge rating 4V single-line bidirectional ESD protection  | 52, 56     |
|  | <b>PESD4V0W1BCSF</b> | High-surge rating 4V single-line bidirectional ESD protection  | 52, 56     |
|  | <b>PESD5V0R1BSF</b>  | Ultra low capacitance 5V bidirectional ESD protection  | 52, 55, 56 |
|  | <b>PESD7V0H1BSF</b>  | Ultra low capacitance 7V bidirectional ESD protection  | 52, 56     |
|  | <b>PESD7V0C1BSF</b>  | Ultra low capacitance 7V bidirectional ESD protection  | 52, 56     |
|  | <b>PESD3V3X4UHM</b>  | 4-fold unidirectional ESD protection array in DFN1308-6 package for SD card protection               | 54         |
|  | <b>PESD1USB3B/C</b>  | high surge robustness bi-directional ESD protection for USB3.2, footprint compatible to PCMF1USB3B/C | 55         |
|  | <b>PESD2USB3B/C</b>  | high surge robustness bi-directional ESD protection for USB3.2, footprint compatible to PCMF2USB3B/C | 55         |
|  | <b>PESD3USB3B/C</b>  | high surge robustness bi-directional ESD protection for USB3.2, footprint compatible to PCMF3USB3B/C | 55         |
|  | <b>PESD6V5C1USF</b>  | Ultra low capacitance 6V unidirectional ESD protection   | 56         |
| General ESD protection devices                           | <b>PESD8V0S1ULD</b>  | Unidirectional 8V ESD protection   | 57         |
|  | <b>PESD16VV1BSF</b>  | Extremely symmetrical 16V bidirectional ESD protection   | 58         |
|  | <b>PESD18VV1BBSF</b> | Very symmetrical 18V bidirectional ESD protection  | 58         |
|  | <b>PESD3V3V1BL</b>   | Low capacitance 3.3V bidirectional ESD protection  | 58         |
|  | <b>PESD3V3S1BL</b>   | Low capacitance 3.3V bidirectional ESD protection  | 58         |
|  | <b>PTVS3V3D1BAL</b>  | Ultra compact 3.3V Transient Voltage Suppressor  | 58         |
|  | <b>PTV5V5D1BL</b>    | High-robustness ultra-compact 5V Transient Voltage Suppressor  | 58         |
|  | <b>PESD3V3T1BLD</b>  | Single line bidirectional ESD protection in DFN1006-2 package for low-speed interfaces               | 58         |
|  | <b>PESD3V3L4BHM</b>  | 4-fold bidirectional ESD protection array in DFN1308-6 package for SIM card protection               | 60         |
| Application-specific ESD solutions                       | <b>PESD1USB3B/C</b>  | high surge robustness bi-directional ESD protection for USB3.2, footprint compatible to PCMF1USB3B/C | 61         |
|  | <b>PESD2USB3B/C</b>  | high surge robustness bi-directional ESD protection for USB3.2, footprint compatible to PCMF2USB3B/C | 61         |
|  | <b>PESD3USB3B/C</b>  | high surge robustness bi-directional ESD protection for USB3.2, footprint compatible to PCMF3USB3B/C | 61         |
|  | <b>PESD4V0Z1BSF</b>  | high surge robustness low capacitance ESD protection for USB3.2                                      | 61         |
|  | <b>PESD4V0Z1BCSF</b> | High-surge rating 4V single-line bidirectional ESD protection  | 61         |
|  | <b>PESD4V0W1BCSF</b> | High-surge rating 4V single-line bidirectional ESD protection  | 61         |
|  | <b>PTVS3V3D1BAL</b>  | Ultra compact 3.3V Transient Voltage Suppressor  | 61, 63     |
|  | <b>PTV5V5D1BL</b>    | High-robustness ultra-compact 5.5V Transient Voltage Suppressor                                      | 61, 63     |
| EMI solutions with integrated protection                 | <b>PESD1USB3B</b>    | ESD protection for differential data lines (1 line pair)   | 65         |
|  | <b>PESD2USB3B</b>    | ESD protection for differential data lines for (2 line pairs)  | 65         |
|  | <b>PESD3USB3B</b>    | ESD protection for differential data lines for (3 line pairs)  | 65         |
|  | <b>PESD3V3X4UHM</b>  | 4-fold unidirectional ESD protection array in DFN1308-6 package for SD card protection               | 66         |
| Transient voltage surge suppressor (TVS)                 | <b>PTVS3V3D1BAL</b>  | Ultra compact 3.3V Transient Voltage Suppressor  | 67         |
|  | <b>PTV5V5D1BL</b>    | High-robustness ultra-compact 5.5V Transient Voltage Suppressor                                      | 67         |

MOSFETs

| Category           | Device                | Description  | Page |
|--------------------|-----------------------|--|------|
| Automotive MOSFETs | <b>BUK9J0R9-40H</b>   | N-channel 40V, 0.9mΩ logic level Q101 qualified MOSFET in LFPAK56E   | 75   |
|                    | <b>BUK7J1R0-40H</b>   | N-channel 40V, 1mΩ standard level Q101 qualified MOSFET in LFPAK56E  | 75   |
|                    | <b>BUK9Y1R3-40H</b>   | N-channel 40V, 1.3mΩ logic level Q101 qualified MOSFET in LFPAK56  | 75   |
|                    | <b>BUK7Y1R4-40H</b>   | N-channel 40V, 1.4mΩ standard level Q101 qualified MOSFET in LFPAK56   | 75   |
|                    | <b>BUK9Y1R6-40H</b>   | N-channel 40V, 1.6mΩ logic level Q101 qualified MOSFET in LFPAK56  | 75   |
|                    | <b>BUK9Y1R9-40H</b>   | N-channel 40V, 1.9mΩ logic level Q101 qualified MOSFET in LFPAK56  | 75   |
|                    | <b>BUK9Y2R4-40H</b>   | N-channel 40V, 2.4mΩ logic level Q101 qualified MOSFET in LFPAK56  | 75   |
|                    | <b>BUK9Y2R8-40H</b>   | N-channel 40V, 2.8mΩ logic level Q101 qualified MOSFET in LFPAK56  | 75   |
|                    | <b>BUK7Y3R5-40H</b>   | N-channel 40V, 3.5mΩ standard level Q101 qualified MOSFET in LFPAK56   | 75   |
|                    | <b>BUK6Y12-30P</b>    | 30V, 12mΩ P-channel MOSFET in an LFPAK56 (Power SO8) package using Trench MOSFET technology.   | 81   |
|                    | <b>BUK6Y20-30P</b>    | 30V, 20mΩ P-channel MOSFET in an LFPAK56 (Power SO8) package using Trench MOSFET technology.   | 81   |
|                    | <b>BUK6Y15-40P</b>    | 40V, 15mΩ P-channel MOSFET in an LFPAK56 (Power SO8) package using Trench MOSFET technology.   | 81   |
|                    | <b>BUK6Y25-40P</b>    | 40V, 25mΩ P-channel MOSFET in an LFPAK56 (Power SO8) package using Trench MOSFET technology.   | 81   |
|                    | <b>BUK6Y32-60P</b>    | 60V, 32mΩ P-channel MOSFET in an LFPAK56 (Power SO8) package using Trench MOSFET technology.   | 81   |
|                    | <b>BUK6Y57-60P</b>    | 60V, 57mΩ P-channel MOSFET in an LFPAK56 (Power SO8) package using Trench MOSFET technology.   | 81   |
|                    | <b>PMN25ENEA</b>      | Single N-channel MOSFET transistor; 30V; 25 mΩ in SOT457 package; ESD protected; auto qualified; 175°C                               | 83   |
|                    | <b>PMN20ENA</b>       | Single N-channel MOSFET transistor; 40V; 20 mΩ in SOT457 package; auto qualified; 175°C  | 83   |
|                    | <b>PMN40ENA</b>       | Single N-channel MOSFET transistor; 60V; 40 mΩ in SOT457 package; auto qualified; 175°C  | 83   |
|                    | <b>PMN55ENEA</b>      | Single N-channel MOSFET transistor; 60V; 55 mΩ in SOT457 package; ESD protected; auto qualified; 175°C                               | 83   |
|                    | <b>PMN120ENEA</b>     | Single N-channel MOSFET transistor; 60V; 120 mΩ in SOT457 package; ESD protected; auto qualified; 175°C                              | 83   |
|                    | <b>PMN230ENEA</b>     | Single N-channel MOSFET transistor; 20V; 230 mΩ in SOT457 package; ESD protected; auto qualified; 175°C                              | 83   |
|                    | <b>PMN280ENEA</b>     | Single N-channel MOSFET transistor; 100V; 280 mΩ in SOT457 package; ESD protected; auto qualified; 175°C                             | 83   |
|                    | <b>PMV30ENEA</b>      | Single N-channel MOSFET; 40V; 30 mΩ in SOT1220; auto qualified; 175°C  | 83   |
|                    | <b>BUK6D120-40E</b>   | Single N-channel MOSFET; 40V; 120 mΩ in SOT1220; auto qualified; 175°C   | 83   |
|                    | <b>BUK6D56-60E</b>    | Single N-channel MOSFET; 60V; 56 mΩ in SOT1220; auto qualified; 175°C  | 83   |
|                    | <b>BUK6D88-60E</b>    | Single N-channel MOSFET; 60V; 88 mΩ in SOT1220; auto qualified; 175°C  | 83   |
|                    | <b>BUK6D125-60E</b>   | Single N-channel MOSFET; 60V; 125 mΩ in SOT1220; auto qualified; 175°C   | 83   |
|                    | <b>BUK6D210-60E</b>   | Single N-channel MOSFET; 60V; 210 mΩ in SOT1220; auto qualified; 175°C   | 83   |
|                    | <b>BUK6D98-80E</b>    | Single N-channel MOSFET; 80V; 98 mΩ in SOT1220; auto qualified; 175°C  | 83   |
|                    | <b>BUK6D230-80E</b>   | Single N-channel MOSFET; 80V; 230 mΩ in SOT1220; auto qualified; 175°C   | 83   |
|                    | <b>BUK6D335-100E</b>  | Single N-channel MOSFET; 100V; 335 mΩ in SOT1220; auto qualified; 175°C  | 83   |
|                    | <b>BUK6D120-60P</b>   | 60V, P-channel Trench MOSFET in DFN2020MD-6 (SOT1220) with side-wettable flanks  | 83   |
| Power MOSFETs      | <b>PSMN0R9-30ULD</b>  | N-channel 30V, 0.87 mΩ, 300 A logic level MOSFET in SOT1023A enhanced package for UL2595, using NextPowerS3 Schottky-Plus Technology | 87   |
|                    | <b>PSMN1R6-30MLH</b>  | N-channel 30V, 1.9 mΩ, 160 A logic level MOSFET in LFPAK33 using NextPowerS3 technology  | 88   |
|                    | <b>PSMN1R0-40ULD</b>  | N-channel 40V, 1.1 mΩ, 280 A logic level MOSFET in SOT1023A enhanced package for UL2595, using NextPower-S3 Schottky-Plus technology | 89   |
|                    | <b>PSMN3R7-100BSE</b> | N-channel 100V, 3.95 mΩ, standard level MOSFET in D2PAK  | 91   |
|                    | <b>PSMP012-30YE</b>   | Single P-channel MOSFET; 30V; 12 mΩ in LFPAK56   | 92   |
|                    | <b>PSMP020-30YE</b>   | Single P-channel MOSFET; 30V; 20 mΩ in LFPAK56   | 92   |
|                    | <b>PSMP015-40YE</b>   | Single P-channel MOSFET; 40V; 15 mΩ in LFPAK56   | 92   |
|                    | <b>PSMP025-40YE</b>   | Single P-channel MOSFET; 40V; 25 mΩ in LFPAK56   | 92   |
|                    | <b>PSMP032-60YE</b>   | Single P-channel MOSFET; 60V; 32 mΩ in LFPAK56   | 92   |
|                    | <b>PSMP057-60YE</b>   | Single P-channel MOSFET; 60V; 57 mΩ in LFPAK56   | 92   |

## MOSFETs

| Category             | Device            | Description  | Page |
|----------------------|-------------------|--|------|
| Small-signal MOSFETs | <b>PMH600UNE</b>  | Single N-channel MOSFET transistor; 20V; 600 mΩ; 1 kV ESD protected in DFN0606   | 94   |
|                      | <b>PMH550UNE</b>  | Single N-channel MOSFET transistor; 30V; 550 mΩ; 2 kV ESD protected in DFN0606   | 94   |
|                      | <b>NX7002BKH</b>  | Single N-channel ESD protected MOSFET; 60V; 3 Ohm; 2 kV ESD protected in DFN0606 | 94   |
|                      | <b>PMH950UPE</b>  | Single P-channel MOSFET transistor; 20V; 950 mΩ; 1 kV ESD protected in DFN0606   | 94   |
|                      | <b>PMH1200UPE</b> | Single P-channel MOSFET transistor; 30V; 1200 mΩ; 2 kV ESD protected in DFN0606  | 94   |
|                      | <b>PMPB25ENE</b>  | Single N-channel MOSFET; 30V; 24 mΩ in SOT1220; ESD protected; 175°C             | 96   |
|                      | <b>PMPB50ENE</b>  | Single N-channel MOSFET; 30V; 46 mΩ in SOT1220; ESD protected                    | 96   |
|                      | <b>PMPB100ENE</b> | Single N-channel MOSFET; 30V; 79 mΩ in SOT1220; ESD protected                    | 96   |
|                      | <b>PMPB14XP</b>   | Single P-channel MOSFET; 12V; 14 mΩ in SOT1220;                                  | 96   |
|                      | <b>PMPB30XPE</b>  | Single P-channel MOSFET; 20V; 28 mΩ in SOT1220; ESD protected                    | 96   |
|                      | <b>PMPB24EP</b>   | Single P-channel MOSFET; 30V; 24 mΩ in SOT1220;                                  | 96   |
|                      | <b>PMN28UNE</b>   | Single N-channel MOSFET transistor; 20V; 28 mΩ in SOT457 package; ESD protected  | 99   |
|                      | <b>PMN25ENE</b>   | Single N-channel MOSFET transistor; 30V; 25 mΩ in SOT457 package; ESD protected  | 99   |
|                      | <b>PMN55ENE</b>   | Single N-channel MOSFET transistor; 60V; 55 mΩ in SOT457 package; ESD protected  | 99   |
|                      | <b>PMN120ENE</b>  | Single N-channel MOSFET transistor; 60V; 120 mΩ in SOT457 package; ESD protected | 99   |
|                      | <b>PMN230ENE</b>  | Single N-channel MOSFET transistor; 20V; 230 mΩ in SOT457 package; ESD protected | 99   |
|                      | <b>PMN30XPE</b>   | Single P-channel MOSFET transistor; 60V; 30 mΩ in SOT457 package; ESD protected  | 101  |
|                      | <b>PMN50EPE</b>   | Single P-channel MOSFET transistor; 30V; 50 mΩ in SOT457 package; ESD protected  | 101  |

## Logic

| Category  | Device             | Description  | Page     |
|---|--------------------|--|----------|
| Logic voltage translators<br>(including translating Gates,<br>Buffers, Inverters) | <b>74AUP1T04</b>   | Single supply translating inverter                     | 132, 142 |
|   | <b>74AUP1T14</b>   | Single supply translating inverter; Schmitt-Trigger    | 132, 142 |
|   | <b>74AUP1T17</b>   | Single supply translating buffer; Schmitt-Trigger      | 132, 142 |
|   | <b>74AUP1T50</b>   | Single supply translating buffer; Schmitt-Trigger      | 132, 142 |
|   | <b>74AVC1T1004</b> | 1-to-4 fan out translating buffer                      | 133, 143 |
|   | <b>74AVC4T3144</b> | 4-bit dual-supply buffer/level translator (3-state)    | 133, 143 |
|   | <b>74LV1T04</b>    | Single supply translating inverter                     | 135, 143 |
|   | <b>74LV1T34</b>    | Single supply translating buffer                       | 135, 144 |
|   | <b>74LV1T125</b>   | Single supply translating buffer (3-state)             | 135, 144 |
|   | <b>74LV1T126</b>   | Single supply translating buffer (3-state)             | 135, 144 |
|   | <b>74AVC4T774</b>  | 4-bit dual supply translating transceiver (3-state)    | 141, 143 |
|   | <b>74AUP1T00</b>   | 2-input single supply translating NAND gate            | 142, 159 |
|   | <b>74AUP1T02</b>   | 2-input single supply translating NOR gate             | 142, 160 |
|   | <b>74AUP1T08</b>   | 2-input single supply translating AND gate             | 142, 156 |
|   | <b>74AUP1T32</b>   | 2-input single supply translating OR gate              | 142, 161 |
|   | <b>74AUP1T86</b>   | 2-input single supply translating X-OR gate            | 142, 158 |
|   | <b>74AUP1T87</b>   | 2-input single supply translating X-NOR gate           | 142, 158 |
|   | <b>74AVC1T8128</b> | Single dual-supply translating 2-input NOR with enable | 143      |
|   | <b>74AVC1T8832</b> | Single dual-supply translating 2-input OR with strobe  | 143      |
|   | <b>74LV1T00</b>    | 2-input single supply translating NAND gate            | 143, 159 |
|   | <b>74LV1T02</b>    | 2-input single supply translating NOR gate             | 143, 160 |
|   | <b>74LV1T08</b>    | 2-input single supply translating AND gate             | 144, 156 |
|   | <b>74LV1T32</b>    | 2-input single supply translating OR gate              | 144, 161 |
|   | <b>74LV1T86</b>    | 2-input single supply translating X-OR gate            | 144, 158 |
|   | <b>74LV1T87</b>    | 2-input single supply translating X-NOR gate           | 144, 158 |



# Bipolar transistors






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|  |           |
|--|-----------|
| <b>General purpose bipolar transistors.....</b>                                    | <b>14</b> |
| Transistors single NPN.....  | 14        |
| Transistors single PNP.....  | 14        |
| High performance transistors (superior power dissipation).....                     | 15        |
| Transistors double.....  | 15        |
| Switching transistors single.....  | 16        |
| Switching transistors double.....  | 16        |
| Medium power transistors high performance (175 °C capable).....                    | 17        |
| NPN High performance transistors (175°C capable & superior power dissipation)..... | 17        |
| PNP High performance transistors (175°C capable & superior power dissipation)..... | 17        |
| Medium power transistors.....  | 18        |
| High voltage transistors.....  | 18        |
| LED driver.....  | 19        |
| LED driver NPN.....  | 19        |
| Constant current source.....   | 19        |
| Darlington transistors.....  | 20        |
| Schmitt triggers.....  | 20        |
| Low noise transistors.....   | 20        |
| Matched pair transistors.....  | 21        |
| MOSFET driver.....   | 22        |
| Medium frequency transistors.....  | 22        |
| <b>Low <math>V_{CEsat}</math> (BISS) transistors.....</b>                          | <b>23</b> |
| Low $V_{CEsat}$ (BISS) transistors single NPN up to 2000 mW.....                   | 23        |
| Low $V_{CEsat}$ (BISS) transistors single NPN up to 750 mW.....                    | 24        |
| Low $V_{CEsat}$ (BISS) transistors single PNP up to 2000 mW.....                   | 25        |
| Low $V_{CEsat}$ (BISS) transistors single PNP up to 750 mW.....                    | 26        |
| Low $V_{CEsat}$ (BISS) transistors double.....                                     | 27        |
| Low $V_{CEsat}$ (BISS) transistors load switches.....                              | 28        |
| Low $V_{CEsat}$ (BISS) high voltage transistors.....                               | 29        |
| Low $V_{CEsat}$ (BISS) RETs.....   | 29        |
| Low $V_{CEsat}$ (BISS) transistors PNP - N-channel MOSFET combination.....         | 30        |
| Low $V_{CEsat}$ (BISS) power transistors single.....                               | 30        |
| Low $V_{CEsat}$ (BISS) power transistors double.....                               | 30        |
| <b>Resistor equipped transistors (RETs).....</b>                                   | <b>31</b> |
| RETs 100 mA single.....  | 31        |
| RETs 100 mA double.....  | 32        |
| RETs 500 mA single / double.....   | 32        |
| <b>3-terminal adjustable shunt regulators.....</b>                                 | <b>33</b> |








## Transistors single NPN


Types in **bold** represent new products

| Package               |                     |                         |                     |                          | SOT23   | SOT323 (SC-70)  | DFN1010D-3 (SOT1215)  | DFN1006-3 (SOT883)  | DFN1006B-3 (SOT883B)  |
|-----------------------|---------------------|-------------------------|---------------------|--------------------------|---|---|---|---|---|
|                       |                     |                         |                     |                          |  |  |  |  |  |
| Size (mm)             |                     |                         |                     |                          | 2.9 x 1.3 x 1.0   | 2.0 x 1.25 x 0.95   | 1.1 x 1.0 x 0.37  | 1.0 x 0.6 x 0.48  | 1.0 x 0.6 x 0.37  |
| P <sub>tot</sub> (mW) |                     |                         |                     |                          | 250   | 200   | 750   | 250   | 250   |
| V <sub>CE0</sub> (V)  | I <sub>C</sub> (mA) | h <sub>FE</sub> min/typ | h <sub>FE</sub> max | f <sub>T</sub> min (MHz) |   |   |   |   |   |
| 25                    | 100                 | 450                     | 1200                | 100                      |   | PMST5089  |   |   |   |
| 30                    | 100                 | 110 - 200               | 450 - 800           | 100                      | BC848B  | BC848W  |   |   |   |
|                       |                     | 350                     | 900                 | 100                      |   | PMST5088  |   |   |   |
| 32                    | 100                 | 110 - 420               | 220 - 800           | 100                      | BCW31 / 32 / 33   |   |   |   |   |
|                       |                     | 180 - 380               | 310 - 630           | 250                      | BCW60B / C / D  |   |   |   |   |
| 45                    | 100                 | 110 - 420               | 220 - 800           | 100                      | BC847 / A / B / C   | BC847W / AW / BW / CW   | BC847AQA / BQA / CQA  | BC847AM / BM / CM   | BC847AMB / BMB / CMB  |
|                       |                     | 120 - 380               | 220 - 630           | 100                      | BCX70G / H / J / K  |   |   |   |   |
|                       |                     | 110 - 200               | 220 - 450           | 100                      | BCW71 / 72  |   |   |   |   |
|                       |                     | 500                     | 1250                | 100                      | PMBT6429  | PMST6429  |   |   |   |
| 50                    | 100                 | 210 - 290               | 340 - 460           | 100 - 150                | 2PD601ART<br>2PD601ARL<br>2PD601ASL   | 2PD601ARW / SW  |   |   |   |
|                       |                     | 250                     | 650                 | 100                      | PMBT6428  | PMST6428  |   |   |   |
| 60                    | 100                 | 110 - 200               | 220 - 450           | 100                      | BCV71 / 72  |   |   |   |   |
| 65                    | 100                 | 110 - 200               | 220 - 450           | 100                      | BC846 / A / B   | BC846W / AW / BW  |   | BC846BM   | BC846BMB  |
| 50                    | 150                 | 120 - 200               | 240 - 400           | 80                       | NXP3875Y / G  |   |   |   |   |
|                       |                     | 120 - 270               | 270 - 560           | 100                      |   | 2PC4081Q / R / S  |   | 2PC4617QM / RM  | 2PC4617QMB / RMB  |
|                       | 200                 | 210                     | 340                 | 100                      | 2PD601BRL   |   |   |   |   |
|                       |                     | 290                     | 460                 | 100                      | 2PD601BSL   |   |   |   |   |
| 45                    | 500                 | 100 - 250               | 250 - 600           | 100                      | BC817 / -16 / -25 / -40   | BC817W / -16W / -25W / -40W   | BC817-25QA/-40QA  |   |   |
|                       |                     | 100                     | 600                 | 100                      | BCX19   |   |   |   |   |
| 50                    | 500                 | 85 - 170                | 170 - 340           | 140 - 180                | 2PD602AQL<br>2PD602ARL<br>2PD602ASL   | 2PD1820AR / S   |   |   |   |
| 60                    | 500                 | 50                      | -                   | 100                      |   | PMSTA05   |   |   |   |
| 80                    | 500                 | 100                     | -                   | 50                       | <b>PMBTA06</b>  | <b>PMSTA06</b>  |   |   |   |
| 45                    | 800                 | 100-250                 | 250-600             | 100                      | BCW66F/G/H  |   |   |   |   |





## Transistors single PNP

| Package               |                     |                         |                     |                          | SOT23   | SOT323 (SC-70)  | DFN1010D-3 (SOT1215)  | DFN1006-3 (SOT883)  | DFN1006B-3 (SOT883B)  |
|-----------------------|---------------------|-------------------------|---------------------|--------------------------|---|---|---|---|---|
|                       |                     |                         |                     |                          |  |  |  |  |  |
| Size (mm)             |                     |                         |                     |                          | 2.9 x 1.3 x 1.0   | 2.0 x 1.25 x 0.95   | 1.1 x 1.0 x 0.37  | 1.0 x 0.6 x 0.48  | 1.0 x 0.6 x 0.37  |
| P <sub>tot</sub> (mW) |                     |                         |                     |                          | 250   | 200   | 750   | 250   | 250   |
| V <sub>CE0</sub> (V)  | I <sub>C</sub> (mA) | h <sub>FE</sub> min/typ | h <sub>FE</sub> max | f <sub>T</sub> min (MHz) |   |   |   |   |   |
| 30                    | 100                 | 125 - 220               | 500 - 800           | 100                      | BC858B  | BC858W  |   |   |   |
| 32                    | 100                 | 120 - 215               | 260 - 500           | 100                      | BCW29 / 30  |   |   |   |   |
|                       |                     | 180 - 380               | 310 - 630           | 100                      | BCW61B / C / D  |   |   |   |   |
| 45                    | 100                 | 210 - 290               | 340 - 460           | 70 - 80                  | 2PB709ART<br>2PB709ARL<br>2PB709ASL   | 2PB709ARW / SW  |   |   |   |
|                       |                     | 180 - 380               | 310 - 630           | 100                      | BCX71H / J / K  |   |   |   |   |
|                       |                     | 120 - 215               | 260 - 500           | 100                      | BCW69 / 70  |   |   |   |   |
|                       |                     | 125 - 420               | 250 - 800           | 100                      | BC857 / A / B / C   | BC857W / AW / BW / CW   | BC857AQA / BQA / CQA  | BC857AM / BM / CM   | BC857AMB / BMB / CMB  |
| 60                    | 100                 | 120                     | 260                 | 150                      | BCW89   |   |   |   |   |
| 65                    | 100                 | 125 - 200               | 250 - 475           | 100                      | BC856 / A / B   | BC856W / AW / BW  |   | BC856BM   | BC856BMB  |
| 100                   | 100                 | 30                      | -                   | 50                       | BSS63   |   |   |   |   |
| 50                    | 150                 | 120 - 270               | 270 - 560           | 100                      |   | 2PA1576Q / R / S  |   | 2PA1774QM / RM / SM   | 2PA1774QMB / RMB / SMB  |
|                       |                     | 210                     | 340                 | 100                      | 2PB709BRL   |   |   |   |   |
|                       | 200                 | 290                     | 460                 | 100                      | 2PB709BSL   |   |   |   |   |
| 25                    | 500                 | 100                     | 600                 | 80                       | BCX18   |   |   |   |   |
| 45                    | 500                 | 100 - 250               | 250 - 600           | 80                       | BC807 / -16 / -25 / -40   | BC807W / -16W / -25W / -40W   | BC807-25QA/-40QA  |   |   |
|                       |                     | 100                     | 600                 | 80                       | BCX17   |   |   |   |   |
| 50                    | 500                 | 85 - 170                | 170 - 340           | 100 - 140                | 2PB710ARL<br>2PB710ASL  | 2PB1219AQ / R / S   |   |   |   |
| 60                    | 500                 | 100                     | -                   | 50                       |   | PMSTA55   |   |   |   |
| 80                    | 500                 | 100                     | -                   | 50                       | PMBTA56   | PMSTA56   |   |   |   |
| 45                    | 800                 | 100-250                 | 250-600             | 80                       | BCW68F/G/H  |   |   |   |   |

## High performance transistors (superior power dissipation)

| Package               |                      |                      |                     |                     |                     |                          | SOT23   |
|-----------------------|----------------------|----------------------|---------------------|---------------------|---------------------|--------------------------|---|
|                       |                      |                      |                     |                     |                     |                          |  |
| Size (mm)             |                      |                      |                     |                     |                     |                          | 2.9 x 1.3 x 1.0   |
| P <sub>tot</sub> (mW) |                      |                      |                     |                     |                     |                          | 775   |
| Polarity              | V <sub>CEO</sub> (V) | V <sub>ebo</sub> (V) | I <sub>c</sub> (mA) | h <sub>FE</sub> min | h <sub>FE</sub> max | f <sub>T</sub> min (MHz) |   |
| NPN                   | 45                   | 5                    | 0.5                 | 100                 | 250                 | 100                      | BC817K-16   |
|                       |                      |                      |                     | 160                 | 400                 | 100                      | BC817K-25   |
|                       |                      |                      |                     | 250                 | 600                 | 100                      | BC817K-40   |
| PNP                   | 45                   | 5                    | 0.5                 | 100                 | 250                 | 80                       | BC807K-16   |
|                       |                      |                      |                     | 160                 | 400                 | 80                       | BC807K-25   |
|                       |                      |                      |                     | 250                 | 600                 | 80                       | BC807K-40   |

## Transistors double

| Package               |                      |                     |                     |                     |                          | SOT457 (SC-74)  | SOT363 (SC-88)   | DFN1412-6 (SOT1268)   | DFN1010B-6 (SOT1216)  |
|-----------------------|----------------------|---------------------|---------------------|---------------------|--------------------------|---|--|---|---|
|                       |                      |                     |                     |                     |                          |  |  |  |  |
| Size (mm)             |                      |                     |                     |                     |                          | 2.9 x 1.5 x 1.0   | 2.0 x 1.25 x 0.95  | 1.4 x 1.2 x 0.5   | 1.0 x 1.0 x 0.37  |
| P <sub>tot</sub> (mW) |                      |                     |                     |                     |                          | 750   | 300  | 480   | 350   |
| Polarity              | V <sub>CEO</sub> (V) | I <sub>c</sub> (mA) | h <sub>FE</sub> min | h <sub>FE</sub> max | f <sub>T</sub> min (MHz) |   |  |   |   |
| NPN                   | 40                   | 100                 | 120                 | 450                 | 100                      |   | PUMX1  |   |   |
|                       | 45                   | 100                 | 200                 | 450                 | 100                      | BC847DS   | BC847BS  | BC847RA   | BC847QAS  |
|                       | 65                   | 100                 | 110                 | -                   | 100                      |   |  | BC846S  |   |
|                       |                      |                     | 200                 | 450                 | 100                      | BC846DS   | BC846BS  |   |   |
|                       | 50                   | 150                 | 120                 | 560                 | 100                      |   | PUMX2  |   |   |
| 45                    | 500                  | 160                 | 400                 | 80                  | BC817DS                  |   | BC817RA  |   |   |
| PNP                   | 40                   | 100                 | 120                 | 450                 | 100                      | PIMT1   | PUMT1  |   |   |
|                       | 45                   | 100                 | 200                 | 450                 | 100                      |   | BC857BS  | BC857RA   | BC857QAS  |
|                       | 65                   | 100                 | 110                 | -                   | 100                      |   |  | BC856S  |   |
|                       |                      |                     | 200                 | 450                 | 100                      |   | BC856BS  |   |   |
| 45                    | 500                  | 160                 | 400                 | 80                  | BC807DS                  |   | BC807RA  |   |   |
| NPN / PNP             | 40                   | 100                 | 120                 | 450                 | 100                      |   | PUMZ1  |   |   |
|                       | 45                   | 100                 | 200                 | 450                 | 100                      |   | BC847BPN   | BC847RAPN   | BC847QAPN   |
|                       | 50                   | 100                 | 120                 | 560                 | 100                      | PIMZ2   | PUMZ2  |   |   |
|                       | 65                   | 100                 | 200                 | 450                 | 100                      |   | BC846BPN   |   |   |
| 45                    | 500                  | 160                 | 160                 | 100 / 800           | BC817DPN                 |   | BC817RAPN  |   |   |

# General purpose bipolar transistors

## Switching transistors single

Types in **bold** represent new products

| Package               |                      |                     |                     |                     |                          |                       | SOT223 (SC-73)   | SOT89 (SC-62)   | SOT23           | SOT323 (SC-70)    | DFN1006-3 (SOT883) | DFN1006B-3 (SOT883B) | DFN1010D-3 (SOT1215) |
|-----------------------|----------------------|---------------------|---------------------|---------------------|--------------------------|-----------------------|------------------|-----------------|-----------------|-------------------|--------------------|----------------------|----------------------|
| Size (mm)             |                      |                     |                     |                     |                          |                       | 6.5 x 3.5 x 1.65 | 4.5 x 2.5 x 1.5 | 2.9 x 1.3 x 1.0 | 2.0 x 1.25 x 0.95 | 1.0 x 0.6 x 0.48   | 1.0 x 0.6 x 0.37     | 1.1 x 1.0 x 0.37     |
| P <sub>tot</sub> (mW) |                      |                     |                     |                     |                          |                       | 1700             | 1300            | 250             | 200               | 250                | 250                  | 750                  |
| Polarity              | V <sub>CEO</sub> (V) | I <sub>C</sub> (mA) | h <sub>FE</sub> min | h <sub>FE</sub> max | f <sub>T</sub> min (MHz) | t <sub>off</sub> (ns) |                  |                 |                 |                   |                    |                      |                      |
| NPN                   | 40                   | 200                 | 100                 | 300                 | 180                      | 1200                  |                  |                 | PMBS3904        | PMSS3904          |                    |                      |                      |
|                       | 15                   | 600                 | 40                  | 120                 | 500                      | 20                    |                  |                 | PMBT2369        | PMST2369          |                    |                      |                      |
|                       | 40                   | 200                 | 100                 | 300                 | 300                      | 250                   |                  |                 | MMBT3904        |                   |                    |                      |                      |
|                       | 30                   | 600                 | 100                 | 300                 | 250                      | 250                   |                  |                 | PMBT3904        | PMST3904          | PMBT3904M          | PMBT3904MB           | <b>PMBT3904QA</b>    |
|                       | 40                   | 600                 | 100                 | 300                 | 250                      | 250                   | PZT4401          | PXT4401         | PMBT4401        | PMST4401          |                    |                      |                      |
|                       | 40                   | 600                 | 100                 | 300                 | 300                      | 250                   |                  |                 | MMBT2222A       |                   |                    |                      |                      |
|                       |                      |                     |                     |                     |                          |                       | PZT2222A         | PXT2222A        | PMBT2222A       | PMST2222A         | <b>PMBT2222AM</b>  | <b>PMBT2222AMB</b>   | <b>PMBT2222AQA</b>   |
| PNP                   | 40                   | 800                 | 100                 | 300                 | 300                      | 250                   |                  |                 | BSR14           |                   |                    |                      |                      |
|                       | 40                   | 100                 | 100                 | 300                 | 150                      | 700                   |                  |                 | PMBS3906        | PMSS3906          |                    |                      |                      |
|                       | 40                   | 200                 | 100                 | 300                 | 250                      | 300                   |                  |                 | MMBT3906        |                   |                    |                      |                      |
|                       | 40                   | 600                 | 100                 | 300                 | 200                      | 350                   | PZT4403          | PXT4403         | PMBT4403        | PMST4403          | PMBT3906M          | PMBT3906MB           |                      |
|                       |                      |                     |                     |                     |                          | 365                   |                  |                 | PMBT2907        |                   |                    |                      |                      |
|                       |                      |                     |                     |                     |                          | 300                   |                  |                 |                 | PMST2907A         |                    |                      |                      |
|                       |                      |                     |                     |                     |                          | 365                   |                  |                 | BSR16           |                   |                    |                      |                      |
|                       |                      |                     |                     |                     |                          | PZT2907A              | PXT2907A         | PMBT2907A       |                 | <b>PMBT2907AM</b> | <b>PMBT2907AMB</b> | <b>PMBT2907AQA</b>   |                      |

## Switching transistors double

Types in **bold** represent new products

| Package               |                      |                     |                     |                     |                          |                       | SOT363 (SC-88)    | SOT457 (SC-74)    | DFN1412-6 (SOT1268) |
|-----------------------|----------------------|---------------------|---------------------|---------------------|--------------------------|-----------------------|-------------------|-------------------|---------------------|
| Size (mm)             |                      |                     |                     |                     |                          |                       | 2.0 x 1.25 x 0.95 | 2.9 x 1.5 x 1.0   | 1.4 x 1.2 x 0.5     |
| P <sub>tot</sub> (mW) |                      |                     |                     |                     |                          |                       | 300               | 750               | 480                 |
| Polarity              | V <sub>CEO</sub> (V) | I <sub>C</sub> (mA) | h <sub>FE</sub> min | h <sub>FE</sub> max | f <sub>T</sub> min (MHz) | t <sub>off</sub> (ns) |                   |                   |                     |
| NPN                   | 40                   | 200                 | 100                 | 300                 | 300                      | 250                   | PMBT3904YS        | <b>PMBT3904RA</b> |                     |
|                       | 40                   | 600                 | 100                 | 300                 | 250                      | 250                   | PMBT4401YS        |                   |                     |
|                       |                      |                     |                     |                     | 300                      | 250                   | PMBT2222AYS       |                   |                     |
| PNP                   | 40                   | 200                 | 100                 | 300                 | 250                      | 300                   | PMBT3906YS        |                   |                     |
|                       | 40                   | 600                 | 100                 | 300                 | 200                      | 350                   | PMBT4403YS        |                   |                     |
|                       | 60                   | 600                 | 100                 | 300                 | 200                      | 365                   | PMBT2907AYS       |                   |                     |
| NPN / PNP             | 40                   | 200                 | 100                 | 300                 | 300 / 250                | 250 / 300             | PMBT3946YPN       |                   |                     |
|                       |                      |                     |                     |                     | 300 / 200                | 250 / 365             |                   | NMB2227A          |                     |



## Medium power transistors high performance (175 °C capable)

| Package               |                      |                      |                    |                     |                     |                         | SOT223 (SC-73)   |
|-----------------------|----------------------|----------------------|--------------------|---------------------|---------------------|-------------------------|------------------|
| Size (mm)             |                      |                      |                    |                     |                     |                         | 6.5 x 3.5 x 1.65 |
| P <sub>tot</sub> (mW) |                      |                      |                    |                     |                     |                         | 1700             |
| Polarity              | V <sub>CEO</sub> (V) | V <sub>EBO</sub> (V) | I <sub>C</sub> (A) | h <sub>FE</sub> min | h <sub>FE</sub> max | f <sub>T</sub> min(MHz) |                  |
| NPN                   | 80                   | 7                    | 1                  | 63                  | 250                 | 100                     | BCP56H           |
|                       |                      |                      |                    |                     | 160                 | 100                     | BCP56-10H        |
|                       |                      |                      |                    | 100                 | 250                 | 100                     | BCP56-16H        |
| PNP                   | 80                   | 7                    | 1                  | 63                  | 250                 | 100                     | BCP53H           |
|                       |                      |                      |                    |                     | 100                 | 100                     | BCP53-10H        |
|                       |                      |                      |                    | 100                 | 250                 | 100                     | BCP53-16H        |

## NPN High performance transistors (175°C capable & superior power dissipation)

| Package               |                      |                      |                    |                     |                     |                         | SOT23           |            |
|-----------------------|----------------------|----------------------|--------------------|---------------------|---------------------|-------------------------|-----------------|------------|
| Size (mm)             |                      |                      |                    |                     |                     |                         | 2.9 x 1.3 x 1.0 |            |
| P <sub>tot</sub> (mW) |                      |                      |                    |                     |                     |                         | 950             |            |
| Polarity              | V <sub>CEO</sub> (V) | V <sub>EBO</sub> (V) | I <sub>C</sub> (A) | h <sub>FE</sub> min | h <sub>FE</sub> max | f <sub>T</sub> min(MHz) |                 |            |
| NPN                   | 45                   | 7                    | 0.5                | 100                 | 250                 | 100                     | BC817K-16H      |            |
|                       |                      |                      |                    |                     | 160                 | 400                     | 100             | BC817K-25H |
|                       |                      |                      |                    | 250                 | 600                 | 100                     | BC817K-40H      |            |

## PNP High performance transistors (175°C capable & superior power dissipation)

Types in **bold** represent new products

| Package               |                      |                      |                    |                     |                     |                         | SOT23            |                  |
|-----------------------|----------------------|----------------------|--------------------|---------------------|---------------------|-------------------------|------------------|------------------|
| Size (mm)             |                      |                      |                    |                     |                     |                         | 2.9 x 1.3 x 1.0  |                  |
| P <sub>tot</sub> (mW) |                      |                      |                    |                     |                     |                         | 675              |                  |
| Polarity              | V <sub>CEO</sub> (V) | V <sub>EBO</sub> (V) | I <sub>C</sub> (A) | h <sub>FE</sub> min | h <sub>FE</sub> max | f <sub>T</sub> min(MHz) |                  |                  |
| NPN                   | 45                   | 7                    | 0.5                | 100                 | 250                 | 80                      | <b>BC807-16H</b> |                  |
|                       |                      |                      |                    |                     | 160                 | 400                     | 80               | <b>BC807-25H</b> |
|                       |                      |                      |                    | 250                 | 600                 | 80                      | <b>BC807-40H</b> |                  |

## General purpose bipolar transistors

### Medium power transistors

| Package               |                      |                     |                     |                                       |                                       | SOT223 (SC-73)    | SOT89 (SC-62)                  | DFN2020-3 (SOT1061)               | DFN2020D-3 (SOT1061D)             |
|-----------------------|----------------------|---------------------|---------------------|---------------------------------------|---------------------------------------|-------------------|--------------------------------|-----------------------------------|-----------------------------------|
| Size (mm)             |                      |                     |                     |                                       |                                       | 6.5 x 3.5 x 1.65  | 4.5 x 2.5 x 1.5                | 2.0 x 2.0 x 0.62                  | 2.0 x 2.0 x 0.62                  |
| P <sub>tot</sub> (mW) |                      |                     |                     |                                       |                                       | 1700              | 1300                           | 1300                              | 1300                              |
| Polarity              | V <sub>CEO</sub> (V) | I <sub>C</sub> (mA) | h <sub>FE</sub> min | h <sub>FE</sub> max                   | f <sub>T</sub> min (MHz)              |                   |                                |                                   |                                   |
| NPN                   | 20                   | 2                   | 85 - 160            | 375                                   | 40                                    | BCP68 / -25       | BC868 / -25                    | BC68PA / BC68-25PA                | BC68PAS / BC68-25PAS              |
|                       | 45                   | 1                   | 63 - 100            | 160 - 250                             | 100                                   | BCP54 / -10 / -16 | BCX54 / -10 / -16              | BC54PA / BC54-10PA / BC54-16PA    | BC54PAS / BC54-10PAS / BC54-16PAS |
|                       | 60                   | 1                   | 63 - 100            | 160 - 250                             | 100                                   | BCP55 / -10 / -16 | BCX55 / -10 / -16              | BC55PA / BC55-10PA / BC55-16PA    | BC55PAS / BC55-10PAS / BC55-16PAS |
|                       |                      |                     | 100                 | 300                                   | 100                                   | BSP41             | BSR41                          |                                   |                                   |
| 80                    | 1                    | 63 - 100            | 160 - 250           | 100                                   | BCP56 / -10 / -16                     | BCX56 / -10 / -16 | BC56PA / BC56-10PA / BC56-16PA | BC56PAS / BC56-10PAS / BC56-16PAS |                                   |
|                       |                      | 40 - 100            | 120 - 300           | 100                                   | BSP43                                 | BSR43             |                                |                                   |                                   |
| PNP                   | 20                   | 2                   | 85 - 160            | 250 - 375                             | 40                                    | BCP69 / -16 / -25 | BC869 / -16 / -25              | BC69PA / BC69-16PA / BC69-25PA    | BC69PAS / BC69-16PAS / BC69-25PAS |
|                       | 45                   | 1                   | 63 - 100            | 160 - 250                             | 115 <sup>1)</sup> - 145 <sup>1)</sup> | BCP51 / -10 / -16 | BCX51 / -10 / -16              | BC51PA / BC51-10PA / BC51-16PA    | BC51PAS / BC51-10PAS / BC51-16PAS |
|                       | 60                   | 1                   | 63 - 100            | 160 - 250                             | 100                                   | BCP52 / -10 / -16 | BCX52 / -10 / -16              | BC52PA / BC52-10PA / BC52-16PA    | BC52PAS / BC52-10PAS / BC52-16PAS |
|                       |                      |                     | 40 - 100            | 120 - 300                             | 100                                   | BSP31             | BSR30 / 31                     |                                   |                                   |
| 80                    | 1                    | 63 - 100            | 160 - 250           | 115 <sup>1)</sup> - 145 <sup>1)</sup> | BCP53 / -10 / -16                     | BCX53 / -10 / -16 | BC53PA / BC53-10PA / BC53-16PA | BC53PAS / BC53-10PAS / BC53-16PAS |                                   |
|                       |                      | 40 - 100            | 120 - 300           | 100                                   | BSP32 / 33                            | BSR33             |                                |                                   |                                   |



<sup>1)</sup> Typical value

### High voltage transistors



| Package               |                      |                     |                     |                     |                          | SOT223 (SC-73)   | SOT89 (SC-62)   | SOT457 (SC-74)  | SOT23             | SOT323 (SC-70)    |
|-----------------------|----------------------|---------------------|---------------------|---------------------|--------------------------|------------------|-----------------|-----------------|-------------------|-------------------|
| Size (mm)             |                      |                     |                     |                     |                          | 6.5 x 3.5 x 1.65 | 4.5 x 2.5 x 1.5 | 2.9 x 1.5 x 1.0 | 2.9 x 1.3 x 1.0   | 2.0 x 1.25 x 0.95 |
| P <sub>tot</sub> (mW) |                      |                     |                     |                     |                          | 1700             | 1300            | 750             | 250               | 200               |
| Polarity              | V <sub>CEO</sub> (V) | I <sub>C</sub> (mA) | h <sub>FE</sub> min | h <sub>FE</sub> max | f <sub>T</sub> min (MHz) |                  |                 |                 |                   |                   |
| NPN                   | 140                  | 300                 | 60                  | 250                 | 100                      |                  |                 |                 | PMBT5550          | PMST5550          |
|                       | 160                  | 300                 | 80                  | 250                 | 100                      |                  |                 |                 | PMBT5551 / BSR19A | PMST5551          |
|                       | 250                  | 100                 | 50                  |                     | 60                       | BF722            | BF622           |                 | BF822             |                   |
|                       | 300                  | 100                 | 50                  |                     | 60                       | BF720            | BF620           |                 | BF820             | BF820W            |
|                       |                      |                     | 40                  |                     | 50                       | PZTA42           | PXTA42          |                 | PMBTA42           | PMSTA42           |
|                       | 350                  | 100                 | 40                  |                     | 70                       | BSP19            | BST39           |                 |                   |                   |
| 400                   | 300                  | 50                  | 200                 | 20                  | PZTA44                   |                  |                 | PMBTA44         |                   |                   |
| PNP                   | 100                  | 100                 | 30                  |                     | 50                       |                  |                 |                 | BSS63             |                   |
|                       | 250                  | 100                 | 50                  |                     | 60                       | BF723            |                 |                 |                   |                   |
|                       |                      |                     | 50                  |                     | 60                       |                  | BF623           |                 | BF823             |                   |
|                       | 300                  | 100                 | 50                  |                     | 60                       |                  | BF621           |                 | BF821             |                   |
| 40                    |                      |                     |                     | 50                  | PZTA92                   | PXTA92           |                 | PMBTA92         | PMSTA92           |                   |
| 2 x NPN               | 300                  | 100                 | 40                  |                     | 50                       |                  |                 |                 | PMBTA42DS         |                   |

For high-voltage transistors with increased performance please refer to our high-voltage low V<sub>CEsat</sub> (BISS) transistor portfolio on page 23.


## LED driver

| Package               |  | SOT457  | SOT23   |
|-----------------------|--|---|---|
|                       |  |  |  |
| Size (mm)             |  | 2.9 x 1.5 x 1.0   | 2.9 x 1.3 x 1.0   |
| P <sub>tot</sub> (mW) |  | 750   | 480   |
| Vs supply voltage [V] |  | LED drive current [mA] @ Vs=10V   |   |
| 18                    |  | 10  | NCR401T   |
|                       |  | 20  | NCR402T   |
| 40                    |  | 10  | NCR401U   |
|                       |  | 20  | NCR402U   |
|                       |  | 50  | NCR405U   |

## LED driver NPN

| Package               |  | SOT457  | SOT223  |
|-----------------------|--|---|---|
|                       |  |  |  |
| Size (mm)             |  | 2.9 x 1.5 x 1.0   | 6.5 x 3.5 x 1.65  |
| P <sub>tot</sub> (mW) |  | 750   | 1250  |
| Vs supply voltage [V] |  | Max Output Current I <sub>Out</sub> [mA]  |   |
| 16                    |  | 250   | NCR320U   |
|                       |  |   | NCR321U   |
| 40                    |  | 150   | NCR420U   |
|                       |  |   | NCR421U   |
| 16                    |  | 250   | NCR320Z   |
|                       |  |   | NCR321Z   |
| 40                    |  | 150   | NCR420Z   |
|                       |  |   | NCR421Z   |

## Constant current source

| SOT353 (SC-88A)       |   |                         |                                   |                                   |                                   |
|-----------------------|---|-------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| Package               |  |                         |                                   |                                   |                                   |
| Size (mm)             | 2.0 x 1.25 x 0.95   |                         |                                   |                                   |                                   |
| P <sub>tot</sub> (mW) | 335   |                         |                                   |                                   |                                   |
| Type                  | PSSI2021SAY   |                         |                                   |                                   |                                   |
| Description           | Maximum supply voltage  | Maximum supply current  | Typical stabilized output current | Minimum stabilized output current | Maximum stabilized output current |
| Parameter             | V <sub>s</sub> max (V)  | I <sub>s</sub> max (mA) | I <sub>out</sub> typ (µA)         | I <sub>out</sub> min (mA)         | I <sub>out</sub> max (mA)         |
| Value                 | 75  | 2.2                     | 15                                | 0.015                             | 50                                |

## Darlington transistors

| Package               |                      |                     |                     |                          | SOT223 (SC-73)   | SOT89 (SC-62)   | SOT23           |       |
|-----------------------|----------------------|---------------------|---------------------|--------------------------|------------------|-----------------|-----------------|-------|
| Size (mm)             |                      |                     |                     |                          | 6.5 x 3.5 x 1.65 | 4.5 x 2.5 x 1.5 | 2.9 x 1.3 x 1.0 |       |
| P <sub>tot</sub> (mW) |                      |                     |                     |                          | 1700             | 1300            | 250             |       |
| Polarity              | V <sub>CEO</sub> (V) | I <sub>C</sub> (mA) | h <sub>FE</sub> min | f <sub>T</sub> min (MHz) |                  |                 |                 |       |
| NPN                   | 30                   | 500                 | 10000               | 125                      |                  |                 | PMBTA13         |       |
|                       |                      |                     | 20000               |                          | PZTA14           | PXTA14          | PMBTA14         |       |
|                       | 45                   | 1000                | 2000                | 200                      |                  |                 | BCV29           | BCV27 |
|                       |                      |                     | 2000                |                          | BSP50            | BST50           |                 |       |
|                       | 60                   | 500                 | 10000               | 220                      |                  |                 | BCV49           | BCV47 |
|                       |                      |                     | 2000                |                          | BSP51            | BST51           |                 |       |
| 80                    | 1000                 | 2000                | 200                 |                          |                  | BST52           |                 |       |
|                       |                      | 2000                |                     | BSP52                    | BST52            |                 |                 |       |
| PNP                   | 30                   | 500                 | 20000               | 125                      |                  |                 | PMBTA64         |       |
|                       |                      |                     | 2000                | 200                      |                  |                 | BCV28           | BCV26 |
|                       | 45                   | 1000                | 2000                | 200                      |                  |                 | BSP60           | BST60 |
|                       |                      |                     | 10000               |                          | 220              |                 |                 | BCV48 |
|                       | 60                   | 500                 | 10000               | 220                      |                  |                 | BSP61           | BST61 |
|                       |                      |                     | 2000                |                          | 200              |                 |                 | BSP62 |
| 80                    | 1000                 | 2000                | 200                 |                          |                  |                 |                 |       |
|                       |                      | 2000                |                     | 200                      |                  |                 |                 |       |









## Schmitt triggers

| Package               |                          |                          |                     |                     |                     |                             | SOT143B         |
|-----------------------|--------------------------|--------------------------|---------------------|---------------------|---------------------|-----------------------------|-----------------|
| Size (mm)             |                          |                          |                     |                     |                     |                             | 2.9 x 1.3 x 1.0 |
| P <sub>tot</sub> (mW) |                          |                          |                     |                     |                     |                             | 250             |
| Polarity              | V <sub>CEO</sub> (V) TR1 | V <sub>CEO</sub> (V) TR2 | I <sub>C</sub> (mA) | h <sub>FE</sub> min | h <sub>FE</sub> max | V <sub>CEsat</sub> typ (mV) |                 |
| NPN                   | 30                       | 6                        | 100                 | 110                 | 800                 | 250                         | BCV63 / B       |
| PNP                   | 30                       | 6                        | 100                 | 220                 | 475                 | 250                         | BCV64B          |

## Low noise transistors











| Package               |                      |                     |                       |                     |                     |                          | SOT23           | SOT323 (SC-70)    |
|-----------------------|----------------------|---------------------|-----------------------|---------------------|---------------------|--------------------------|-----------------|-------------------|
| Size (mm)             |                      |                     |                       |                     |                     |                          | 2.9 x 1.3 x 1.0 | 2.0 x 1.25 x 0.95 |
| P <sub>tot</sub> (mW) |                      |                     |                       |                     |                     |                          | 250             | 200               |
| Polarity              | V <sub>CEO</sub> (V) | I <sub>C</sub> (mA) | Noise figure max (dB) | h <sub>FE</sub> min | h <sub>FE</sub> max | f <sub>T</sub> min (MHz) |                 |                   |
| NPN                   | 30                   | 100                 | 4                     | 200                 | 450                 | 100                      | BC849B          | BC849BW           |
|                       |                      |                     |                       | 420                 | 800                 | 100                      | BC849C          | BC849CW           |
|                       | 45                   | 100                 | 4                     | 200                 | 450                 | 100                      | BC850B          | BC850BW           |
|                       |                      |                     |                       | 420                 | 800                 | 100                      | BC850C          | BC850CW           |
| PNP                   | 30                   | 100                 | 4                     | 220                 | 475                 | 100                      | BC859B          | BC859BW           |
|                       |                      |                     |                       | 420                 | 800                 | 100                      | BC859C          | BC859CW           |
|                       | 45                   | 100                 | 4                     | 220                 | 475                 | 100                      | BC860B          | BC860BW           |
|                       |                      |                     |                       | 420                 | 800                 | 100                      | BC860C          | BC860CW           |

Matched pair transistors - part 1

| Package               |                      |                     |                     |                     |                                    |  | SOT143B   | SOT457 (SC-74)   | LFPAK56D (SOT1205)  |   |
|-----------------------|----------------------|---------------------|---------------------|---------------------|------------------------------------|--|---|--|---|---|
| Size (mm)             |                      |                     |                     |                     |                                    |  | 2.9 x 1.3 x 1.0   | 2.9 x 1.5 x 1.0  | 5 x 6 x 1.1   |   |
| P <sub>tot</sub> (mW) |                      |                     |                     |                     |                                    |  | 250   | 750  | 1250  |   |
| Polarity              | V <sub>CEO</sub> (V) | I <sub>C</sub> (mA) | h <sub>FE</sub> min | h <sub>FE</sub> max | h <sub>FE1</sub> /h <sub>FE2</sub> | V <sub>BE1</sub> - V <sub>BE2</sub> (mV) |   |  |   |   |
| NPN                   | 30                   | 100                 | 110                 | 800                 | 0.7 <sup>1)</sup>                  | n.a.                                     | BCV61/A/B/C   |  |   |   |
|                       | 45                   | 100                 | 200                 | 450                 | 0.9 <sup>1)</sup>                  | n.a.                                     | BCM61B  |  |   |   |
|                       |                      |                     |                     |                     |                                    | 2  |   |  | BCM847DS  |   |
|                       | 80                   | 100                 | 63                  | 250                 | 0.95                               | n.a.                                     |   | BCM56DS  |   |   |
|                       | 100                  | 3000                | 150                 | -                   | 0.95                               | n.a.                                     |   |  | PHPT610035NK  |   |
| Configuration         |                      |                     |                     |                     |                                    |  |  |  |  |  |
| PNP                   | 30                   | 100                 | 100                 | 800                 | 0.7 <sup>1)</sup>                  | n.a.                                     | BCV62/A/B/C   |  |   |   |
|                       | 45                   | 100                 | 200                 | 450                 | 0.9 <sup>1)</sup>                  | n.a.                                     | BCM62B  |  |   |   |
|                       |                      |                     |                     |                     |                                    | 2  |   |  | BCM857DS  |   |
|                       | 65                   | 100                 | 200                 | 450                 | 0.9                                | 2  |   |  | BCM856DS  |   |
|                       | 80                   | 100                 | 63                  | 250                 | 0.95                               | n.a.                                     |   | BCM53DS  |   |   |
|                       | 100                  | 3000                | 150                 | -                   | 0.9                                | n.a.                                     |   |  | PHPT610035PK  |   |
| Configuration         |                      |                     |                     |                     |                                    |  |  |  |  |  |

<sup>1)</sup> I<sub>C1</sub> / I<sub>E2</sub>


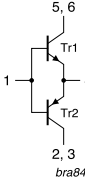

Matched pair transistors - part 2

| Package               |                      |                     |                     |                     |                                    |  | SOT353 (SC-88A)   | SOT363 (SC-88)  | SOT1216 (DFN1010B-6)  |   |   |
|-----------------------|----------------------|---------------------|---------------------|---------------------|------------------------------------|--|---|---|---|---|---|
| Size (mm)             |                      |                     |                     |                     |                                    |  | 2.0 x 1.25 x 0.95   | 2.0 x 1.25 x 0.95   | 1.1 x 1.0 x 0.37  |   |   |
| P <sub>tot</sub> (mW) |                      |                     |                     |                     |                                    |  | 300   | 300   | 350   |   |   |
| Polarity              | V <sub>CEO</sub> (V) | I <sub>C</sub> (mA) | h <sub>FE</sub> min | h <sub>FE</sub> max | h <sub>FE1</sub> /h <sub>FE2</sub> | V <sub>BE1</sub> - V <sub>BE2</sub> (mV) |   |   |   |   |   |
| NPN                   | 45                   | 100                 | 200                 | 450                 | 0.9 <sup>1)</sup>                  | 2  |   | BCM847BS  |   |   |   |
|                       |                      |                     |                     |                     | 0.95                               | 2  | PMP4501G  |   | PMP4501Y  | BCM847QAS   | PMP4501QAS  |
|                       |                      |                     |                     |                     | 0.98                               | 2  | PMP4201G  |   | PMP4201Y  |   |   |
|                       | 65                   | 100                 | 200                 | 450                 | 0.9                                | 2  |   | BCM846BS  |   |   |   |
| Configuration         |                      |                     |                     |                     |                                    |  |  |  |  |  |  |
| PNP                   | 45                   | 100                 | 200                 | 450                 | 0.9 <sup>1)</sup>                  | 2  |   | BCM857BS  |   |   |   |
|                       |                      |                     |                     |                     | 0.95                               | 2  | PMP5501G  |   | PMP5501Y  | BCM857QAS   | PMP5501QAS  |
|                       |                      |                     |                     |                     | 0.98                               | 2  | PMP5201G  |   | PMP5201Y  |   |   |
|                       | 65                   | 100                 | 200                 | 450                 | 0.9                                | 2  |   | BCM856BS  |   |   |   |
| Configuration         |                      |                     |                     |                     |                                    |  |  |  |  |  |  |



<sup>1)</sup> I<sub>C1</sub> / I<sub>E2</sub>

## General purpose bipolar transistors






### MOSFET driver

| $V_{CE0}$ (V) | $I_C$ (A) | $I_{cm}$ [A] | Type     | Package  | Remark  | Configuration   |
|---------------|-----------|--------------|----------|--|---|---|
| 30            | 0.1       | 0.2          | BCV65    | SOT143B<br> | General-purpose transistors                     |  |
| 40            | 0.6       | 1            | PMD2001D | SOT457<br>  | Switching transistors with reduced storage time |   |
|               | 1         | 2            | PMD3001D |  | Low $V_{CEsat}$                                 |   |

### Medium frequency transistors

|                |               |            |              |              |                 | SOT23   | SOT323 (SC-70)  |
|----------------|---------------|------------|--------------|--------------|-----------------|---|---|
| Package        |               |            |              |              |                 |  |  |
| Size (mm)      |               |            |              |              |                 | 2.9 x 1.3 x 1.0   | 2.0 x 1.25 x 0.95   |
| $P_{tot}$ (mW) |               |            |              |              |                 | 250   | 200   |
| Polarity       | $V_{CE0}$ (V) | $I_C$ (mA) | $h_{FE}$ min | $h_{FE}$ max | $f_T$ typ (MHz) |   |   |
| NPN            | 15            | 100        | 40           | -            | 500             | BF570   |   |
|                | 20            | 25         |              | 85           | >275            | BF520   | BF520W  |
|                |               | 30         | 65           | 225          | 260             | BF519   |   |
|                | 40            | 25         | 67           | 220          | 380             | BF840   |   |
| PNP            | 30            | 25         | 25           | 50           | 250             | BF824   | BF824W  |
|                | 40            |            | 50           | -            | >325            | BF550   |   |







Low  $V_{CEsat}$  (BISS) transistors single NPN up to 2000 mW

| Package                 |                       |                        |                            |                         |                          |  | SOT223<br>(SC-73)   | SOT89<br>(SC-62)  | SOT457<br>(SC-74)   | DFN2020-3<br>(SOT1061)  | DFN2020D-3<br>(SOT1061D)  |
|-------------------------|-----------------------|------------------------|----------------------------|-------------------------|--------------------------|--|---|---|---|---|---|
|                         |                       |                        |                            |                         |                          |  |  |  |  |  |  |
| Size (mm)               |                       |                        |                            |                         |                          |  | 6.5 x 3.5 x 1.65  | 4.5 x 2.5 x 1.5   | 2.9 x 1.5 x 1.0   | 2.0 x 2.0 x 0.62  | 2.0 x 2.0 x 0.62  |
| P <sub>tot</sub> (mW)   |                       |                        |                            |                         |                          |  | 1700  | 1650  | 750   | 1300  | 1300  |
| V <sub>CEO</sub><br>(V) | I <sub>C</sub><br>(A) | I <sub>CM</sub><br>(A) | h <sub>FE</sub><br>min/typ | @ I <sub>C</sub><br>(A) | @ V <sub>CE</sub><br>(V) | V <sub>CEsat</sub> typ (mV);<br>I <sub>C</sub> = 0.5 A; I <sub>B</sub> =<br>0.05 A |   |   |   |   |   |
| 12                      | 5.3                   | 10.6                   | 300/530                    | 0.5                     | 2                        | 18   |   | PBSS301NX   |   |   |   |
|                         | 5.8                   | 11.6                   | 300/530                    | 0.5                     | 2                        | 18   | PBSS301NZ   |   |   |   |   |
|                         | 6                     | 7                      | 280/440                    | 0.5                     | 2                        | 20   |   |   |   | PBSS4612PA  |   |
| 20                      | 3                     | 5                      | 220/390                    | 0.5                     | 2                        | 40   |   | PBSS4320X   |   |   |   |
|                         | 4                     | 15                     | 300/450                    | 0.5                     | 2                        | 30   |   |   | PBSS301ND   |   |   |
|                         | 5                     | 10                     | 300/450                    | 0.5                     | 2                        | 35   |   | PBSS4520X   |   |   |   |
|                         | 5.3                   | 10.6                   | 300/570                    | 0.5                     | 2                        | 20   |   | PBSS302NX   |   |   |   |
|                         | 5.8                   | 10.2                   | 300/570                    | 0.5                     | 2                        | 20   | PBSS302NZ   |   |   |   |   |
|                         | 6                     | 7                      | 280/440                    | 0.5                     | 2                        | 20   |   |   |   |   | PBSS4620PA  |
|                         | 7                     | 15                     | 300/550                    | 0.5                     | 2                        | 12   |   | PBSS4021NX  |   |   |   |
|                         | 8                     | 20                     | 300/550                    | 0.5                     | 2                        | 9  | PBSS4021NZ  |   |   |   |   |
| 30                      | 3                     | 5                      | 300/490                    | 0.5                     | 2                        | 45   |   | PBSS4330X   |   |   |   |
|                         | 3                     | 5                      | 300/465                    | 0.5                     | 2                        | 40   |   |   |   | PBSS4330PA  | PBSS4330PAS   |
|                         | 3.5                   | 6                      | 300/500                    | 0.5                     | 2                        | 70   |   |   | PBSS4032ND <sup>3)</sup>  |   |   |
|                         | 4.7                   | 10                     | 300/500                    | 0.5                     | 2                        | 57   |   | PBSS4032NX <sup>3)</sup>  |   |   |   |
|                         | 5.1                   | 10.2                   | 300/480                    | 0.5                     | 2                        | 20   |   | PBSS303NX   |   |   |   |
|                         | 5.4                   | 10                     | 300/500                    | 0.5                     | 2                        | 57   | PBSS4032NZ <sup>3)</sup>  |   |   |   |   |
|                         | 5.5                   | 11                     | 300/480                    | 0.5                     | 2                        | 20   | PBSS303NZ   |   |   |   |   |
|                         | 6                     | 7                      | 280/450                    | 0.5                     | 2                        | 21   |   |   |   |   | PBSS4630PA  |
| 40                      | 2                     | 3                      | 300/-                      | 0.5                     | 5                        | 140  |   | PBSS4240X   |   |   |   |
|                         | 4                     | 15                     | 300/520                    | 0.5                     | 2                        | 35   |   |   | PBSS302ND   |   |   |
|                         |                       | 10                     | 300/500                    | 0.5                     | 2                        | 21   |   | PBSS4540X   |   |   |   |
|                         | 5                     | 10                     | 300/500                    | 0.5                     | 2                        | 25   | PBSS4540Z   |   |   |   |   |
| 50                      | 2                     | 5                      | 300/-                      | 0.5                     | 2                        | 90 <sup>2)</sup>   |   | PBSS4250X   |   |   |   |
|                         | 3                     | 5                      | 200/280                    | 0.5                     | 2                        | 65   |   |   | PBSS4350D   |   |   |
|                         |                       |                        | 300/460                    | 0.5                     | 2                        | 50   |   | PBSS4350X   |   |   |   |
|                         |                       |                        | 200/280                    | 0.5                     | 2                        | 60 <sup>1)</sup>   | PBSS4350Z   |   |   |   |   |
| 60                      | 1                     | 2                      | 170/-                      | 0.5                     | 10                       | 200 <sup>2)</sup>  |   | PBSS4160X   |   |   |   |
|                         | 3                     | 6                      | 200/360                    | 0.5                     | 5                        | 45   |   |   |   |   | PBSS4360PAS   |
|                         |                       |                        | 200/-                      | 0.5                     | 5                        | 45   | PBSS4360Z   | PBSS4360X   |   |   |   |
|                         |                       |                        | 345/570                    | 0.5                     | 2                        | 40   |   |   | PBSS303ND   |   |   |
|                         | 4.7                   | 9.4                    | 300/520                    | 0.5                     | 2                        | 25   |   | PBSS304NX   |   |   |   |
|                         | 5.2                   | 10.4                   | 300/520                    | 0.5                     | 2                        | 25   | PBSS304NZ   |   |   |   |   |
|                         | 6                     | 7                      | 280/440                    | 0.5                     | 2                        | 22   |   |   |   |   | PBSS4560PA  |
|                         | 6.2                   | 15                     | 300/500                    | 0.5                     | 2                        | 17   |   | PBSS4041NX  |   |   |   |
| 7                       | 15                    | 300/500                | 0.5                        | 2                       | 13                       | PBSS4041NZ   |   |   |   |   |   |
| 80                      | 3                     | 6                      | 240/360                    | 0.5                     | 2                        | 40   |   |   | PBSS304ND   |   |   |
|                         | 4                     | 10                     | 250/400                    | 0.5                     | 2                        | 25   |   | PBSS4480X   |   |   |   |
|                         | 4.6                   | 9.2                    | 300/470                    | 0.5                     | 2                        | 25   |   | PBSS305NX   |   |   |   |
|                         | 5.1                   | 10.2                   | 300/470                    | 0.5                     | 2                        | 25   | PBSS305NZ   |   |   |   |   |
|                         | 5.6                   | 7                      | 270/425                    | 0.5                     | 2                        | 25   |   |   |   |   | PBSS4580PA  |
| 100                     | 1                     | 3                      | 150/290                    | 0.25                    | 10                       | 75   |   |   | PBSS8110D   |   |   |
|                         |                       |                        | 150/290                    | 0.25                    | 10                       | 73   |   | PBSS8110X   |   |   |   |
|                         |                       |                        | 150/290                    | 0.25                    | 10                       | 73   | PBSS8110Z   |   |   |   |   |
|                         | 3                     | 4                      | 170/275                    | 0.5                     | 2                        | 45   |   |   | PBSS305ND   |   |   |
|                         | 4.5                   | 9                      | 200/330                    | 0.5                     | 2                        | 27   |   | PBSS306NX   |   |   |   |
|                         | 5.1                   | 10.2                   | 200/330                    | 0.5                     | 2                        | 27   | PBSS306NZ   |   |   |   |   |
| 5.2                     | 6                     | 180/285                | 0.5                        | 2                       | 30                       |  |   |   |   | PBSS8510PA  |   |

<sup>1)</sup> I<sub>C</sub>/I<sub>B</sub> = 20 <sup>2)</sup> V<sub>CEsat</sub> (max) <sup>3)</sup> Optimized for high-speed switching

Low  $V_{CEsat}$  (BISS) transistors single NPN up to 750 mW






Types in **bold** represent new products

| Package               |                    |                     |                         |                      |                       |  | SOT23   | SOT323 (SC-70)  | SOT363 (SC-88)   | DFN1006-3 (SOT883)  | DFN1006B-3 (SOT883B)  | DFN1010D-3 (SOT1215)  |
|-----------------------|--------------------|---------------------|-------------------------|----------------------|-----------------------|--|---|---|--|---|---|---|
|                       |                    |                     |                         |                      |                       |  |  |  |  |  |  |  |
| Size (mm)             |                    |                     |                         |                      |                       |  | 2.9 x 1.3 x 1.0   | 2.0 x 1.25 x 0.95   | 2.0 x 1.25 x 0.95  | 1.0 x 0.6 x 0.48  | 1.0 x 0.6 x 0.37  | 1.1 x 1.0 x 0.37  |
| P <sub>tot</sub> (mW) |                    |                     |                         |                      |                       |  | 480   | 350   | 430  | 250   | 250   | 750   |
| V <sub>CEO</sub> (V)  | I <sub>C</sub> (A) | I <sub>CM</sub> (A) | h <sub>FE</sub> min/typ | @ I <sub>C</sub> (A) | @ V <sub>CE</sub> (V) | V <sub>CEsat</sub> typ (mV); I <sub>C</sub> = 0.5 A; I <sub>B</sub> = 0.05 A |   |   |  |   |   |   |
| 15                    | 0.5                | 1                   | 200/325                 | 0.01                 | 2                     | -  |   |   | PBSS2515M  | PBSS2515MB  |   |   |
| 20                    | 1                  | 3                   | 350/470                 | 0.1                  | 2                     | 110 <sup>2)</sup>  | PBSS4120T   |   |  |   |   |   |
|                       | 2                  | 5                   | 220/330                 | 0.1                  | 2                     | 45   | PBSS4320T   |   |  |   |   |   |
|                       | 4.3                | 8                   | 300/550                 | 0.5                  | 2                     | 21   | PBSS4021NT  |   |  |   |   |   |
| 30                    | 1                  | 1.5                 | 230/380                 | 0.5                  | 2                     | 90   |   |   |  |   |   | PBSS4130QA  |
|                       |                    | 3                   | 300/450                 | 0.5                  | 2                     | 120 <sup>2)</sup>  | PBSS4130T   |   |  |   |   |   |
|                       | 2                  | 3                   | 300/450                 | 0.5                  | 2                     | 70   | PBSS4230T   |   |  |   |   |   |
|                       |                    |                     | 230/380                 | 0.5                  | 2                     | 75   |   |   |  |   |   | PBSS4230QA  |
| 2.6                   | 5                  | 300/500             | 0.5                     | 2                    | 80                    | PBSS4032NT <sup>3)</sup>   |   |   |  |   |   |   |
| 40                    | 0.5                | 1                   | 200/550                 | 0.01                 | 2                     | 200 <sup>2)</sup>  |   |   | PBSS2540M  | PBSS2540MB  |   |   |
|                       |                    |                     | 300/440                 | 0.5                  | 5                     | 130  |   | PBSS4140U   |  |   |   |   |
|                       |                    |                     | 300/510                 | 0.5                  | 5                     | 120  | PMMT491A  |   |  |   |   |   |
|                       | 2                  | 3                   | 300/420                 | 0.5                  | 5                     | 130  | PBSS4140T   |   |  |   |   |   |
|                       |                    |                     | 350/470                 | 0.1                  | 2                     | 70   |   | PBSS4240Y   |  |   |   |   |
| 300/450               | 0.5                | 2                   | 70                      | PBSS4240T            |                       |  |   |   |  |   |   |   |
| 50                    | 2                  | 5                   | 300/495                 | 0.5                  | 2                     | 60   | PBSS4350T   |   |  |   |   |   |
| 60                    | 1                  | 1.5                 | 150/240                 | 0.5                  | 2                     | 90   |   |   |  |   |   | PBSS4160QA  |
|                       |                    | 2                   | 200/420                 | 0.5                  | 5                     | 120  |   | PBSS4160U   |  |   |   |   |
|                       |                    |                     | 200/350                 | 0.5                  | 5                     | 110  | PBSS4160T   |   |  |   |   |   |
|                       | 2                  | 3                   | 150/240                 | 0.5                  | 2                     | 75   |   |   |  |   |   | PBSS4260QA  |
|                       | 3.8                | 8                   | 300/500                 | 0.5                  | 2                     | 29   | PBSS4041NT  |   |  |   |   |   |
| 100                   | 1                  | 3                   | 150/400                 | 0.25                 | 10                    | 80   |   |   | PBSS8110Y  |   |   |   |
|                       |                    |                     | 150/300                 | 0.25                 | 10                    | 70   | PBSS8110T   |   |  |   |   |   |

<sup>1)</sup> I<sub>C</sub>/I<sub>B</sub> = 20 <sup>2)</sup> V<sub>CEsat</sub> (max) <sup>3)</sup> Optimized for high-speed switching









Low  $V_{CEsat}$  (BISS) transistors single PNP up to 2000 mW

| Package                 |                       |                        |                            |                         |                          |  | SOT223<br>(SC-73)   | SOT89<br>(SC-62)  | SOT457<br>(SC-74)   | DFN2020-3<br>(SOT1061)  | DFN2020D-3<br>(SOT1061D)  |
|-------------------------|-----------------------|------------------------|----------------------------|-------------------------|--------------------------|--|---|---|---|---|---|
|                         |                       |                        |                            |                         |                          |  |  |  |  |  |  |
| Size (mm)               |                       |                        |                            |                         |                          |  | 6.5 x 3.5 x 1.65  | 4.5 x 2.5 x 1.5   | 2.9 x 1.5 x 1.0   | 2.0 x 2.0 x 0.62  | 2.0 x 2.0 x 0.62  |
| P <sub>tot</sub> (mW)   |                       |                        |                            |                         |                          |  | 1700  | 1650  | 750   | 1300  | 1300  |
| V <sub>CEO</sub><br>(V) | I <sub>C</sub><br>(A) | I <sub>CM</sub><br>(A) | h <sub>FE</sub><br>min/typ | @ I <sub>C</sub><br>(A) | @ V <sub>CE</sub><br>(V) | V <sub>CEsat</sub> typ (mV);<br>I <sub>C</sub> = 0.5 A; I <sub>B</sub> =<br>0.05 A |   |   |   |   |   |
| 12                      | 5.3                   | 10.6                   | 250/400                    | 0.5                     | 2                        | 20   |   | PBSS301PX   |   |   |   |
|                         | 5.7                   | 11.4                   | 250/400                    | 0.5                     | 2                        | 20   | PBSS301PZ   |   |   |   |   |
|                         | 6                     | 7                      | 220/335                    | 0.5                     | 2                        | 20   |   |   | PBSS5612PA  |   |   |
| 20                      | 3                     | 5                      | 200/-                      | 0.5                     | 2                        | 80 <sup>2)</sup>   |   |   | PBSS5320D   |   |   |
|                         |                       |                        | 220/450                    | 0.5                     | 2                        | 50   |   | PBSS5320X   |   |   |   |
|                         | 4                     | 15                     | 250/400                    | 0.5                     | 2                        | 35   |   |   | PBSS301PD   |   |   |
|                         | 5                     | 10                     | 300/430                    | 0.5                     | 2                        | 45   |   |   |   |   |   |
|                         | 5.1                   | 10.2                   | 250/370                    | 0.5                     | 2                        | 25   |   |   | PBSS302PX   |   |   |
|                         | 5.5                   | 11                     | 250/370                    | 0.5                     | 2                        | 25   | PBSS302PZ   |   |   |   |   |
|                         | 6                     | 7                      | 230/345                    | 0.5                     | 2                        | 25   |   |   |   | PBSS5620PA  |   |
|                         | 6.2                   | 15                     | 250/400                    | 0.5                     | 2                        | 18   |   |   | PBSS4021PX  |   |   |
| 30                      | 2.7                   | 5                      | 200/350                    | 0.5                     | 2                        | 87   |   |   |   | PBSS4032PD <sup>3)</sup>  |   |
|                         |                       |                        | 200/380                    | 0.5                     | 2                        | 50   |   | PBSS5330X   |   |   |   |
|                         |                       |                        | 200/320                    | 0.5                     | 2                        | 45   |   |   |   | PBSS5330PA  | PBSS5330PAS   |
|                         | 4.2                   | 10                     | 200/350                    | 0.5                     | 2                        | 70   |   |   | PBSS4032PX <sup>3)</sup>  |   |   |
|                         | 4.4                   | 10                     | 200/350                    | 0.5                     | 2                        | 70   | PBSS4032PZ <sup>3)</sup>  |   |   |   |   |
|                         | 5.1                   | 10.2                   | 250/400                    | 0.5                     | 2                        | 25   |   |   | PBSS303PX   |   |   |
|                         | 5.3                   | 10.6                   | 250/400                    | 0.5                     | 2                        | 25   | PBSS303PZ   |   |   |   |   |
|                         | 6                     | 7                      | 200/335                    | 0.5                     | 2                        | 25   |   |   |   | PBSS5630PA  |   |
| 40                      | 2                     | 3                      | 215/-                      | 0.5                     | 5                        | 170  |   |   |   |   |   |
|                         | 4                     | 15                     | 200/310                    | 0.5                     | 2                        | 46   |   |   | PBSS5240X   |   |   |
|                         |                       |                        | 250/370                    | 0.5                     | 2                        | 33   |   |   | PBSS302PD   |   |   |
|                         | 5                     | 10                     | 250/350                    | 0.5                     | 2                        | 40 <sup>1)</sup>   | PBSS5540Z   |   |   |   |   |
| 50                      | 2                     | 5                      | 200/-                      | 0.5                     | 2                        | 90 <sup>2)</sup>   |   |   | PBSS5250X   |   |   |
|                         | 3                     | 5                      | 200/300                    | 0.5                     | 2                        | 70   |   |   |   | PBSS5350D   |   |
|                         |                       |                        | 200/375                    | 0.5                     | 2                        | 70   |   |   | PBSS5350X   |   |   |
|                         |                       |                        | 200/300                    | 0.5                     | 2                        | 70   | PBSS5350Z   |   |   |   |   |
| 60                      | 3                     | 6                      | 130/220                    | 0.5                     | 5                        | 55   |   |   |   |   | PBSS5360PAS   |
|                         |                       |                        | 130/-                      | 0.5                     | 5                        | 55   | PBSS5360Z   | PBSS5360X   |   |   |   |
|                         |                       |                        | 180/265                    | 0.5                     | 2                        | 55   |   |   | PBSS303PD   |   |   |
|                         | 4.2                   | 8.4                    | 200/295                    | 0.5                     | 2                        | 35   |   |   | PBSS304PX   |   |   |
|                         | 4.5                   | 9                      | 200/295                    | 0.5                     | 2                        | 35   | PBSS304PZ   |   |   |   |   |
|                         | 5                     | 6                      | 170/260                    | 0.5                     | 2                        | 35   |   |   |   | PBSS560PA   |   |
|                         | 5                     | 15                     | 200/300                    | 0.5                     | 2                        | 30   |   |   | PBSS4041PX  |   |   |
| 5.7                     | 200/300               |                        | 0.5                        | 2                       | 22                       | PBSS4041PZ   |   |   |   |   |   |
| 80                      | 3                     | 5                      | 155/225                    | 0.5                     | 2                        | 55   |   |   |   | PBSS304PD   |   |
|                         |                       |                        | 180/265                    | 0.5                     | 2                        | 40   |   |   |   | PBSS580PA   |   |
|                         | 4                     | 10                     | 200/300                    | 0.5                     | 2                        | 35   |   |   | PBSS5480X   |   |   |
|                         |                       |                        | 200/280                    | 0.5                     | 2                        | 36   |   |   | PBSS305PX   |   |   |
| 4.5                     | 9                     | 200/280                | 0.5                        | 2                       | 36                       | PBSS305PZ  |   |   |   |   |   |
| 100                     | 1                     | 3                      | 150/350                    | 0.5                     | 5                        | 100  |   |   |   | PBSS9110D   |   |
|                         |                       |                        | 150/350                    | 0.5                     | 5                        | 90   |   |   | PBSS9110X   |   |   |
|                         |                       |                        | 150/-                      | 0.5                     | 5                        | 90   | PBSS9110Z   |   |   |   |   |
|                         | 2                     | 3                      | 175/275                    | 0.5                     | 2                        | 65   |   |   |   | PBSS305PD   |   |
|                         | 2.7                   | 4                      | 180/295                    | 0.5                     | 2                        | 45   |   |   |   | PBSS9410PA  |   |
| 3.7                     | 7.4                   | 200/300                | 0.5                        | 2                       | 45                       |  |   |   | PBSS306PX   |   |   |
| 4.1                     | 8.2                   | 200/300                | 0.5                        | 5                       | 45                       | PBSS306PZ  |   |   |   |   |   |





<sup>1)</sup> I<sub>C</sub> / I<sub>B</sub> = 20 <sup>2)</sup> V<sub>CEsat</sub> (max) <sup>3)</sup> Optimized for high-speed switching

Low  $V_{CEsat}$  (BISS) transistors single PNP up to 750 mW

| Package               |                    |                     |                         |                      |                       |   | SOT23   | SOT323 (SC-70)  | SOT363 (SC-88)   | DFN1006-3 (SOT883)  | DFN1006B-3 (SOT883B)  | DFN1010D-3 (SOT1215)  |
|-----------------------|--------------------|---------------------|-------------------------|----------------------|-----------------------|---|---|---|--|---|---|---|
|                       |                    |                     |                         |                      |                       |   |  |  |  |  |  |  |
| Size (mm)             |                    |                     |                         |                      |                       |   | 2.9 x 1.3 x 1.0   | 2.0 x 1.25 x 0.95   | 2.0 x 1.25 x 0.95  | 1.0 x 0.6 x 0.48  | 1.0 x 0.6 x 0.37  | 1.1 x 1.0 x 0.37  |
| P <sub>tot</sub> (mW) |                    |                     |                         |                      |                       |   | 480   | 350   | 430  | 250   | 250   | 750   |
| V <sub>CE0</sub> (V)  | I <sub>C</sub> (A) | I <sub>CM</sub> (A) | h <sub>FE</sub> min/typ | @ I <sub>C</sub> (A) | @ V <sub>CE</sub> (V) | V <sub>CEsat, typ</sub> (mV); I <sub>C</sub> = 0.5 A; I <sub>B</sub> = 0.05 A |   |   |  |   |   |   |
| 15                    | 0.5                | 1                   | 200/260                 | 0.01                 | 2                     | 150   |   |   |  | PBSS3515M   | PBSS3515MB  |   |
| 20                    | 1                  | 2                   | 300/450                 | 0.1                  | 2                     | 125 <sup>2)</sup>   | PBSS5120T   |   |  |   |   |   |
|                       | 2                  | 3                   | 225/-                   | 0.5                  | 2                     | 80 <sup>2)</sup>  | PBSS5220T   |   |  |   |   |   |
|                       |                    | 5                   | 220/420                 | 0.5                  | 2                     | 50  | PBSS5320T   |   |  |   |   |   |
|                       | 3.5                | 8                   | 250/400                 | 0.5                  | 2                     | 35  | PBSS4021PT  |   |  |   |   |   |
| 30                    | 1                  | 1.5                 | 180/295                 | 0.5                  | 2                     | 85  |   |   |  |   |   | PBSS5130QA  |
|                       |                    |                     | 260/350                 | 0.5                  | 2                     | 110   | PBSS5130T   |   |  |   |   |   |
|                       | 2                  | 3                   | 300/450                 | 0.1                  | 2                     | 70  | PBSS5230T   |   |  |   |   |   |
|                       |                    |                     | 180/295                 | 0.5                  | 2                     | 70  |   |   |  |   |   |   |
| 2.4                   | 5                  | 200/320             | 0.5                     | 2                    | 95                    | PBSS4032PT <sup>3)</sup>  |   |   |  |   |   |   |
| 40                    | 0.5                | 1                   | 200/380                 | 0.01                 | 2                     | 220   |   |   |  | PBSS3540M   | PBSS3540MB  |   |
|                       |                    | 1                   | 2                       | 300/520              | 0.1                   | 5   | 130   |   | PBSS5140U  |   |   |   |
|                       |                    |                     |                         | 300/800              | 0.1                   | 5   | 130   | PMMT591A  |  |   |   |   |
|                       |                    | 300/510             | 0.1                     | 5                    | 130                   | PBSS5140T   |   |   |  |   |   |   |
|                       | 2                  | 3                   | 300/-                   | 0.1                  | 2                     | 110 <sup>2)</sup>   |   |   | PBSS5240Y  |   |   |   |
| 300/450               |                    |                     | 0.1                     | 2                    | 70                    | PBSS5240T   |   |   |  |   |   |   |
| 50                    | 2                  | 3                   | 200/-                   | 0.5                  | 2                     | 90 <sup>2)</sup>  | PBSS5250T   |   |  |   |   |   |
|                       |                    |                     |                         |                      |                       |   | PBSS5250TH  |   |  |   |   |   |
|                       | 2                  | 3                   | 200/-                   | 0.5                  | 2                     | 90 <sup>2)</sup>  | PBSS5350TH  |   |  |   |   |   |
| 5                     |                    | 200/360             | 0.5                     | 2                    | 55                    | PBSS5350T   |   |   |  |   |   |   |
| 60                    | 1                  | 1.5                 | 120/185                 | 0.5                  | 2                     | 125   |   |   |  |   |   | PBSS5160QA  |
|                       |                    |                     | 150/250                 | 0.5                  | 5                     | 135   |   | PBSS5160U   |  |   |   |   |
|                       |                    | 150/250             | 0.5                     | 5                    | 120                   | PBSS5160T   |   |   |  |   |   |   |
|                       | 1.7                | 2.5                 | 120/185                 | 0.5                  | 2                     | 105   |   |   |  |   |   | PBSS5260QA  |
|                       | 2.7                | 8                   | 200/300                 | 0.5                  | 2                     | 49  | PBSS4041PT  |   |  |   |   |   |
| 100                   | 1                  | 3                   | 150/-                   | 0.25                 | 5                     | 93  |   |   | PBSS9110Y  |   |   |   |
|                       |                    |                     | 150/350                 | 0.5                  | 5                     | 95  | PBSS9110T   |   |  |   |   |   |





<sup>1)</sup> IC / IB = 20 <sup>2)</sup> V<sub>CEsat</sub> (max) <sup>3)</sup> Optimized for high-speed switching

## Low $V_{CEsat}$ (BISS) transistors double

| Package               |                    |           |                         |                      |                       |  |                             |                      |                      | SOT96 (SO8)   | SOT457 (SC-74)  | DFN2020-6 (SOT1118)   | DFN2020D-6 (SOT1118D)   |               |
|-----------------------|--------------------|-----------|-------------------------|----------------------|-----------------------|--|-----------------------------|----------------------|----------------------|---|---|---|---|---------------|
|                       |                    |           |                         |                      |                       |  |                             |                      |                      |  |  |  |  |               |
| Size (mm)             |                    |           |                         |                      |                       |  |                             |                      |                      | 4.9 x 3.9 x 1.75  | 2.9 x 1.5 x 1.0   | 2.0 x 2.0 x 0.62  | 2.0 x 2.0 x 0.62  |               |
| P <sub>tot</sub> (mW) |                    |           |                         |                      |                       |  |                             |                      |                      | 2000 <sup>2)</sup>  | 750   | 1300  | 1300  |               |
| V <sub>CEO</sub> (V)  | I <sub>c</sub> (A) | Polarity  | h <sub>FE</sub> min/typ | @ I <sub>c</sub> (A) | @ V <sub>CE</sub> (V) | V <sub>CEsat</sub> typ (mV); I <sub>c</sub> = 0.5 A; I <sub>b</sub> = 0.05 A | V <sub>CEsat</sub> max (mV) | @ I <sub>c</sub> (A) | @ I <sub>b</sub> (A) |   |   |   |   |               |
| 15                    | 0.5                | 2 x NPN   | 200                     | 0.01                 | 2                     | 170 <sup>1)</sup>  | 250                         | 0.5                  | 0.05                 |   |   |   |   |               |
|                       |                    | 2 x PNP   | 200                     | 0.01                 | 2                     | 170 <sup>1)</sup>  | 250                         | 0.5                  | 0.05                 |   |   |   |   |               |
|                       |                    | NPN / PNP | 200                     | 0.01                 | 2                     | 170 <sup>1)</sup>  | 250                         | 0.5                  | 0.05                 |   |   |   |   |               |
|                       |                    | NPN / PNP | 200                     | 0.01                 | 2                     | 170 <sup>1)</sup>  | 250                         | 0.5                  | 0.05                 |   |   |   |   |               |
| 20                    | 2                  | NPN / NPN | 230                     | 0.5                  | 2                     | 60   | 90                          | 0.5                  | 0.05                 |   |   |   | PBSS4220PANS  |               |
|                       | 2                  | PNP / PNP | 210                     | 0.5                  | 2                     | 70   | 110                         | 0.5                  | 0.05                 |   |   |   | PBSS5220PAPS  |               |
|                       | 7.5                | NPN / NPN | 300                     | 0.5                  | 2                     | 15   | 150                         | 4                    | 0.2                  | PBSS4021SN  |   |   |   |               |
|                       | 6.3                | PNP / PNP | 250                     | 0.5                  | 2                     | 24   | 225                         | 4                    | 0.2                  | PBSS4021SP  |   |   |   |               |
|                       | 7.5 / 6.3          | NPN / PNP | 300 / 250               | 0.5                  | 2                     | 15 / 24  | 150 / 225                   | 4                    | 0.2                  | PBSS4021SPN   |   |   |   |               |
| 30                    | 1                  | NPN / NPN | 210                     | 0.5                  | 2                     | 75   | 100                         | 0.5                  | 0.05                 |   |   |   | PBSS4130PAN   |               |
|                       |                    | PNP / PNP | 170                     | 0.5                  | 2                     | 85   | 140                         | 0.5                  | 0.05                 |   |   |   | PBSS5130PAP   |               |
|                       |                    | NPN / PNP | 210 / 170               | 0.5                  | 2                     | 75 / 85  | 100 / 140                   | 0.5                  | 0.05                 |   |   |   | PBSS4130PANP  |               |
|                       | 2                  | NPN / NPN | 230                     | 0.5                  | 2                     | 60   | 80                          | 0.5                  | 0.05                 |   |   |   | PBSS4230PAN   |               |
|                       |                    | PNP / PNP | 210                     | 0.5                  | 2                     | 75   | 110                         | 0.5                  | 0.05                 |   |   |   | PBSS5230PAP   |               |
|                       |                    | NPN / PNP | 230 / 210               | 0.5                  | 2                     | 60 / 75  | 80 / 100                    | 0.5                  | 0.05                 |   |   |   | PBSS4230PANP  |               |
|                       | 5.7                | NPN / NPN | 300                     | 0.5                  | 2                     | 57   | 250                         | 4                    | 0.4                  | PBSS4032SN <sup>3)</sup>  |   |   |   |               |
|                       | 4.8                | PNP / PNP | 200                     | 0.5                  | 2                     | 70   | 390                         | 4                    | 0.4                  | PBSS4032SP <sup>3)</sup>  |   |   |   |               |
|                       | 5.7 / 4.8          | NPN / PNP | 300 / 200               | 0.5                  | 2                     | 57 / 70  | 250 / 390                   | 4                    | 0.4                  | PBSS4032SPN <sup>3)</sup>   |   |   |   |               |
| 40                    | 1                  | NPN / PNP | 300 / 250               | 0.5                  | 5                     | 130 / 150  | 500                         | 1                    | 0.1                  |   |   |   | PBSS4140DPN   |               |
|                       | 2                  | NPN / PNP | 300 / 250               | 0.5                  | 5                     | 80 / 100   | 400 / 530                   | 2                    | 0.2                  |   |   |   | PBSS4240DPN   |               |
| 50                    | 2.7                | 2 x NPN   | 300                     | 0.5                  | 2                     | 50   | 340                         | 2.7                  | 0.27                 | PBSS4350SS  |   |   |   |               |
|                       |                    | 2 x PNP   | 200                     | 0.5                  | 2                     | 60   | 370                         | 2.7                  | 0.27                 | PBSS5350SS  |   |   |   |               |
|                       |                    | NPN / PNP | 300 / 200               | 0.5                  | 2                     | 50 / 60  | 340 / 370                   | 2.7                  | 0.27                 | PBSS4350SPN   |   |   |   |               |
| 60                    | 1                  | 2 x NPN   | 200                     | 0.5                  | 5                     | 115  | 250                         | 1                    | 0.1                  |   |   |   | PBSS4160DS  |               |
|                       |                    | 2 x PNP   | 150                     | 0.5                  | 5                     | 120  | 330                         | 1                    | 0.1                  |   |   |   | PBSS5160DS  |               |
|                       |                    | NPN / PNP | 200 / 150               | 0.5                  | 5                     | 115 / 120  | 250 / 330                   | 1                    | 0.1                  |   |   |   | PBSS4160DPN   |               |
|                       | 1                  | NPN / NPN | 150                     | 0.5                  | 2                     | 90   | 120                         | 0.5                  | 0.05                 |   |   |   | PBSS4160PAN   | PBSS4160PANS  |
|                       |                    | PNP / PNP | 120                     | 0.5                  | 2                     | 125  | 180                         | 0.5                  | 0.05                 |   |   |   | PBSS5160PAP   | PBSS5160PAPS  |
|                       |                    | NPN / PNP | 150 / 120               | 0.5                  | 2                     | 90 / 125   | 120 / 180                   | 0.5                  | 0.05                 |   |   |   | PBSS4160PANP  | PBSS4160PANPS |
|                       | 2                  | NPN / NPN | 210                     | 0.5                  | 2                     | 70   | 90                          | 0.5                  | 0.05                 |   |   |   | PBSS4260PAN   | PBSS4260PANS  |
|                       |                    | PNP / PNP | 140                     | 0.5                  | 2                     | 100  | 140                         | 0.5                  | 0.05                 |   |   |   | PBSS5260PAP   | PBSS5260PAPS  |
|                       |                    | NPN / PNP | 210 / 140               | 0.5                  | 2                     | 70 / 100   | 90 / 140                    | 0.5                  | 0.05                 |   |   |   | PBSS4260PANP  | PBSS4260PANPS |
|                       | 6.7                | NPN / NPN | 300                     | 0.5                  | 2                     | 20   | 190                         | 4                    | 0.2                  | PBSS4041SN  |   |   |   |               |
|                       | 5.9                | PNP / PNP | 200                     | 0.5                  | 2                     | 35   | 330                         | 4                    | 0.2                  | PBSS4041SP  |   |   |   |               |
|                       | 6.7 / 5.9          | NPN / PNP | 300 / 200               | 0.5                  | 2                     | 20 / 35  | 190 / 330                   | 4                    | 0.2                  | PBSS4041SPN   |   |   |   |               |
| 120                   | 1                  | NPN / NPN | 240                     | 0.1                  | 2                     | 90   | 120                         | 0.5                  | 0.05                 |   |   |   | PBSS4112PAN   |               |
|                       |                    | PNP / PNP | 190                     | 0.1                  | 2                     | 150  | 220                         | 0.5                  | 0.05                 |   |   |   | PBSS5112PAP   |               |
|                       |                    | NPN / PNP | 240 / 190               | 0.1                  | 2                     | 90 / 150   | 120 / 220                   | 0.5                  | 0.05                 |   |   |   | PBSS4112PANP  |               |

<sup>1)</sup> I<sub>c</sub>/I<sub>b</sub>=20 <sup>2)</sup> Device mounted on a ceramic PCB, Al<sub>2</sub>O<sub>3</sub>, standard footprint <sup>3)</sup> Optimized for high-speed switching

## Low $V_{CEsat}$ (BISS) transistors load switches





| Package                 |                       |   |             | SOT457<br>(SC-74)   | SOT363<br>(SC-88)   |
|-------------------------|-----------------------|---|-------------|---|---|
|                         |                       |   |             |  |  |
| Size (mm)               |                       |   |             | 2.9 x 1.5 x 1.0   |   |
| P <sub>tot</sub> (mW)   |                       |   |             | 750 <sup>1)</sup>   | 600 <sup>1)</sup>   |
| V <sub>CEO</sub><br>(V) | I <sub>C</sub><br>(A) | V <sub>CEsat</sub> max (mV); I <sub>C</sub> = 0.5 A;<br>I <sub>B</sub> = 0.05 A | R1, R2 (kΩ) |  |  |
| 15                      | 0.5                   | 250   | 2.2         |   |   |
|                         |                       |   | 4.7         |   |   |
|                         |                       |   | 10          |   |   |
|                         |                       |   | 22          |   |   |
| 20                      | 1                     | 150   | 2.2         |   | PBLS2001D   |
|                         |                       |   | 4.7         |   | PBLS2002D   |
|                         |                       |   | 10          |   | PBLS2003D   |
|                         |                       |   | 22          |   | PBLS2004D   |
|                         | 1.8                   | 70  | 2.2         | PBLS2021D   |   |
|                         |                       |   | 4.7         | PBLS2022D   |   |
|                         |                       |   | 10          | PBLS2023D   |   |
|                         |                       |   | 22          | PBLS2024D   |   |
| 40                      | 0.5                   | 350   | 2.2         |   | PBLS4001Y   |
|                         |                       |   | 4.7         |   | PBLS4002Y   |
|                         |                       |   | 10          |   | PBLS4003Y   |
|                         |                       |   | 22          |   | PBLS4004Y   |
|                         |                       |   | 47          |   | PBLS4005Y   |
|                         | 1                     | 170   | 2.2         |   | PBLS4001D   |
|                         |                       |   | 4.7         |   | PBLS4002D   |
|                         |                       |   | 10          |   | PBLS4003D   |
|                         |                       |   | 22          |   | PBLS4004D   |
|                         |                       |   | 47          |   | PBLS4005D   |
| 60                      | 1                     | 180   | 2.2         |   | PBLS6001D   |
|                         |                       |   | 4.7         |   | PBLS6002D   |
|                         |                       |   | 10          |   | PBLS6003D   |
|                         |                       |   | 22          |   | PBLS6004D   |
|                         |                       |   | 47          |   | PBLS6005D   |
|                         | 1.5                   | 100   | 2.2         | PBLS6021D   |   |
|                         |                       |   | 4.7         | PBLS6022D   |   |
|                         |                       |   | 10          | PBLS6023D   |   |
|                         |                       |   | 22          | PBLS6024D   |   |

<sup>1)</sup> Device mounted on a ceramic PCB, Al<sub>2</sub>O<sub>3</sub>, standard footprint


<sup>2)</sup> Device mounted on an FR4 PCB, single-sided copper, tin-plated, and standard footprint

## Low $V_{CEsat}$ (BISS) high voltage transistors

Types in **bold** represent new products

| Package        |                     |           |             | SOT223 (SC-73)  | SOT89 (SC-62)  | SOT1215   | SOT23   |           |
|----------------|---------------------|-----------|-------------|---|--|---|---|-----------|
|                |                     |           |             |  |  |  |  |           |
| Size (mm)      |                     |           |             | 6.5 x 3.5 x 1.65  | 4.5 x 2.5 x 1.5  | 1.1 x 1.0 x 0.37  | 2.9 x 1.3 x 1.0   |           |
| $P_{tot}$ (mW) |                     |           |             | 1700  | 1300   | 750   | 250   |           |
| Polarity       | $V_{CEO}$ [max] (V) | $I_C$ (A) | $hFE$ [min] |   |  |   |   |           |
| NPN            | 150                 | 0.5       | 100         |   |  | PBHV8515QA  |   |           |
|                |                     |           | 70          |   |  |   | PBHV8115TLH   |           |
|                |                     | 1         | 100         |   |  | PBHV8115X   | PBHV8115T   |           |
|                |                     |           |             | PBHV8115Z   |  |   |   |           |
|                |                     | PBHV8215Z |             |   |  |   |   |           |
|                |                     | 180       | 1           | 100   |  |   |   | PBHV8118T |
|                | 400                 |           | 0.5         | 100   | PBHV8540Z  | PBHV8540X   | PBHV8540T   |           |
|                |                     | 1         | 100         | PBHV8140Z   |  |   |   |           |
|                | 500                 | 0.15      | 50          |   |  |   |   | PMBTA45   |
|                |                     |           |             | 600   |  |   |   |           |
|                |                     | 0.1       | 70          | PBHV2160Z   |  |   |   |           |
|                |                     |           |             | PBHV8560Z   |  |   |   |           |
| 140            |                     | 4         | 100         | PBHV9414Z   |  |   |   |           |
|                |                     |           |             | 150   |  |   |   |           |
| 0.5            | 100                 |           |             | PBHV9515QA  |  |   |   |           |
|                |                     | 70        |             |   |  | PBHV9115TLH   |   |           |
| 1              | 100                 |           |             | PBHV9115X   | PBHV9115T  |   |   |           |
|                |                     | PBHV9115Z |             |   |  |   |   |           |
| PBHV9215Z      |                     |           |             |   |  |   |   |           |
| 400            | 0.25                | 100       |             |   | PBHV9040X  | PBHV9040T   |   |           |
|                |                     |           | PBHV9040Z   |   |  |   |   |           |
|                | 0.5                 | 100       | PBHV9540Z   |   | <b>PBHV9540X</b>   |   |   |           |
|                |                     |           | 500         |   |  |   |   |           |
|                | 0.15                | 100       |             |   |  | PBHV9050T   |   |           |
|                |                     |           | 0.25        | 100   | PBHV9050Z  |   |   |           |
| 600            | 0.1                 | 70        |             |   | PBHV3160Z  |   |   |           |
|                |                     |           | 0.5         | 70  | PBHV9560Z  |   |   |           |

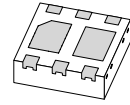
## Low $V_{CEsat}$ (BISS) RETs

| Package        |            |              |                  |                  | SOT23   |           |
|----------------|------------|--------------|------------------|------------------|---|-----------|
|                |            |              |                  |                  |  |           |
| Size (mm)      |            |              |                  |                  | 2.9 x 1.3 x 1.0   |           |
| $P_{tot}$ (mW) |            |              |                  |                  | 250   |           |
| $V_{CEO}$ (V)  | $I_C$ (mA) |              | R1 (k $\Omega$ ) | R2 (k $\Omega$ ) | NPN   | PNP       |
| 40             | 600        | R1 = R2      | 1                | 1                | PBRN113ET   | PBRP113ET |
|                |            |              | 2.2              | 2.2              | PBRN123ET   | PBRP123ET |
|                |            | R1 $\neq$ R2 | 1                | 10               | PBRN113ZT   | PBRP113ZT |
|                |            |              | 2.2              | 10               | PBRN123YT   | PBRP123YT |

## Low $V_{CEsat}$ (BISS) transistors

### Low $V_{CEsat}$ (BISS) transistors PNP - N-channel MOSFET combination

| Package          |              |                 |                 |                 |                   |                                  |                 |                 |              |                                 | DFN2020-6<br>(SOT1118) |
|------------------|--------------|-----------------|-----------------|-----------------|-------------------|----------------------------------|-----------------|-----------------|--------------|---------------------------------|------------------------|
| Size (mm)        |              |                 |                 |                 |                   |                                  |                 |                 |              |                                 | 2.0 x 2.0 x 0.62       |
| $P_{tot}$ (mW)   |              |                 |                 |                 |                   |                                  |                 |                 |              |                                 | 1300                   |
| $V_{CE0}$<br>(V) | $I_C$<br>(A) | $h_{FE}$<br>min | $h_{FE}$<br>max | @ $I_C$<br>(mA) | @ $V_{CE}$<br>(V) | $R_{CEsat}$ typ<br>(m $\Omega$ ) | $V_{DS}$<br>(V) | $V_{GS}$<br>(V) | $I_D$<br>(A) | $R_{Dson}$ typ<br>(m $\Omega$ ) |                        |
| 40               | 2            | 300             | 800             | 100             | 5                 | 240                              | 30              | 0.7             | 0.66         | 390                             | PBSM5240PF             |
|                  |              | 100             | -               | 100             | 5                 | 240                              | 30              | 0.7             | 0.66         | 390                             | PBSM5240PFH            |



### Low $V_{CEsat}$ (BISS) power transistors single

| Package          |              |                     |                |                   |          | LPAK56<br>(SOT669) |             |             |
|------------------|--------------|---------------------|----------------|-------------------|----------|--------------------|-------------|-------------|
| Size (mm)        |              |                     |                |                   |          | 5 x 6 x 1.1        |             |             |
| $P_{tot}$ (mW)   |              |                     |                |                   |          | 1250               |             |             |
| $V_{CE0}$<br>(V) | $I_C$<br>(A) | $h_{FE}$<br>min/typ | @ $I_C$<br>(A) | @ $V_{CE}$<br>(V) | Polarity |                    |             |             |
| 40               | 6            | 200 / 400           | 0.5            | 2                 | NPN      | PHPT60406NY        |             |             |
|                  |              |                     | 0.5            | 2                 | PNP      | PHPT60406PY        |             |             |
|                  | 10           | 200 / 400           | 0.5            | 2                 | NPN      | PHPT60410NY        |             |             |
|                  |              |                     | 0.5            | 2                 | PNP      | PHPT60410PY        |             |             |
|                  | 15           | 200 / 400           | 0.5            | 2                 | NPN      | PHPT60415NY        |             |             |
|                  |              |                     | 0.5            | 2                 | PNP      | PHPT60415PY        |             |             |
| 60               | 3            | 200 / 400           | 0.5            | 2                 | NPN      | PHPT60603NY        |             |             |
|                  |              |                     | 0.5            | 2                 | PNP      | PHPT60603PY        |             |             |
|                  | 6            | 200 / 400           | 0.5            | 2                 | NPN      | PHPT60606NY        |             |             |
|                  |              |                     | 0.5            | 2                 | PNP      | PHPT60606PY        |             |             |
|                  | 10           | 200 / 400           | 0.5            | 2                 | NPN      | PHPT60610NY        |             |             |
|                  |              |                     | 0.5            | 2                 | PNP      | PHPT60610PY        |             |             |
| 100              | 2            | 150 / 250           | 0.5            | 10                | NPN      | PHPT61002NYC       |             |             |
|                  |              |                     | 0.5            | 10                | PNP      | PHPT61002PYC       |             |             |
|                  |              |                     | 0.5            | 10                | NPN      | PHPT61002NYCLH     |             |             |
|                  |              |                     | 0.5            | 10                | PNP      | PHPT61002PYCLH     |             |             |
|                  | 3            | 150 / 250           | 0.5            | 10                | NPN      | PHPT61003NY        |             |             |
|                  |              |                     | 0.5            | 10                | PNP      | PHPT61003PY        |             |             |
|                  | 6            | 150 / 250           | 150 / 220      | 0.5               | 10       | NPN                | PHPT61006NY |             |
|                  |              |                     |                | 0.5               | 10       | PNP                | PHPT61006PY |             |
|                  |              | 10                  | 150 / 250      | 150 / 220         | 0.5      | 10                 | NPN         | PHPT61010NY |
|                  |              |                     |                |                   | 0.5      | 10                 | PNP         | PHPT61010PY |



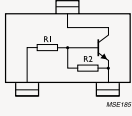
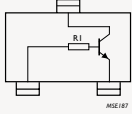


### Low $V_{CEsat}$ (BISS) power transistors double




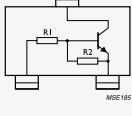
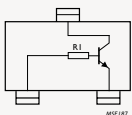
| Package          |              |                 |                 |                |                   |   |                            |                |                |          | LPAK56D (SOT1205) |               |
|------------------|--------------|-----------------|-----------------|----------------|-------------------|---|----------------------------|----------------|----------------|----------|-------------------|---------------|
| Size (mm)        |              |                 |                 |                |                   |   |                            |                |                |          | 5 x 6 x 1.1       |               |
| $P_{tot}$ (mW)   |              |                 |                 |                |                   |   |                            |                |                |          | 1250              |               |
| $V_{CE0}$<br>(V) | $I_C$<br>(A) | $I_{CM}$<br>(A) | $h_{FE}$<br>typ | @ $I_C$<br>(A) | @ $V_{CE}$<br>(V) | $V_{CEsat}$ typ (mV);<br>$I_C = 0.5$ A;<br>$I_B = 0.05$ A | $V_{CEsat}$<br>max<br>(mV) | @ $I_C$<br>(A) | @ $I_B$<br>(A) | Polarity | $h_{FE1}/h_{FE2}$ |               |
| 100              | 3            | 6               | 150             | 0.5            | 10                | 50  | 300                        | 3              | 0.2            | 2XNPN    | -                 | PHPT610030NK  |
|                  |              |                 |                 |                |                   | 70  | 400                        | 3              | 0.2            | 2XPNP    | -                 | PHPT610030PK  |
|                  |              |                 |                 |                |                   | 50 / 70   | 300 / 400                  | 3              | 0.2            | NPN/PNP  | -                 | PHPT610030NPK |
|                  |              |                 |                 |                |                   | 50  | 300                        | 3              | 0.2            | 2XNPN    | 0.95              | PHPT610035NK  |
|                  |              |                 |                 |                |                   | 70  | 400                        | 3              | 0.2            | 2XPNP    | 0.9               | PHPT610035PK  |



RETs 100 mA single - part 1




| Package               |                     |  |         |           | SOT23   |           | SOT323 (SC-70)  |           |
|-----------------------|---------------------|--|---------|-----------|---|-----------|---|-----------|
|                       |                     |  |         |           |  |           |  |           |
| Size (mm)             |                     |  |         |           | 2.9 x 1.3 x 1.0   |           | 2.0 x 1.25 x 0.95   |           |
| P <sub>tot</sub> (mW) |                     |  |         |           | 250   |           | 200   |           |
| V <sub>CE0</sub> (V)  | I <sub>C</sub> (mA) | Configuration  | R1 (kΩ) | R2 (kΩ)   | NPN   | PNP       | NPN   | PNP       |
| 50                    | 100                 |   | 1       | 1         |   | PDTA113ET |   | PDTA113EU |
|                       |                     |  | 2.2     | 2.2       | PDTC123ET   | PDTA123ET | PDTC123EU   | PDTA123EU |
|                       |                     |  | 4.7     | 4.7       | PDTC143ET   | PDTA143ET | PDTC143EU   | PDTA143EU |
|                       |                     |  | 10      | 10        | PDTC114ET   | PDTA114ET | PDTC114EU   | PDTA114EU |
|                       |                     |  | 22      | 22        | PDTC124ET   | PDTA124ET | PDTC124EU   | PDTA124EU |
|                       |                     |  | 47      | 47        | PDTC144ET   | PDTA144ET | PDTC144EU   | PDTA144EU |
|                       |                     |  | 100     | 100       | PDTC115ET   | PDTA115ET | PDTC115EU   | PDTA115EU |
|                       |                     |  | 1       | 10        |   | PDTA113ZT |   | PDTA113ZU |
|                       |                     |  | 2.2     | 10        | PDTC123YT   | PDTA123YT | PDTC123YU   | PDTA123YU |
|                       |                     |  | 2.2     | 47        | PDTC123JT   | PDTA123JT | PDTC123JU   | PDTA123JU |
|                       |                     |  | 4.7     | 10        | PDTC143XT   | PDTA143XT | PDTC143XU   | PDTA143XU |
|                       |                     |  | 4.7     | 47        | PDTC143ZT   | PDTA143ZT | PDTC143ZU   | PDTA143ZU |
|                       |                     |  | 10      | 47        | PDTC114YT   | PDTA114YT | PDTC114YU   | PDTA114YU |
|                       |                     |  | 22      | 47        | PDTC124XT   | PDTA124XT | PDTC124XU   | PDTA124XU |
|                       |                     | 47   | 10      | PDTC144VT | PDTA144VT   | PDTC144VU | PDTA144VU   |           |
|                       |                     | 47   | 22      | PDTC144WT | PDTA144WT   | PDTC144WU | PDTA144WU   |           |
|                       |                     |  | 2.2     | -         | PDTC123TT   | PDTA123TT | PDTC123TU   | PDTA123TU |
|                       |                     |  | 4.7     | -         | PDTC143TT   | PDTA143TT | PDTC143TU   | PDTA143TU |
|                       |                     |  | 10      | -         | PDTC114TT   | PDTA114TT | PDTC114TU   | PDTA114TU |
|                       |                     |  | 22      | -         | PDTC124TT   | PDTA124TT | PDTC124TU   | PDTA124TU |
|                       |                     |  | 47      | -         | PDTC144TT   | PDTA144TT | PDTC144TU   | PDTA144TU |
|                       |                     |  | 100     | -         | PDTC115TT   | PDTA115TT | PDTC115TU   | PDTA115TU |

RETs 100 mA single - part 2





| Package               |                     |   |         |           | DFN1006-3 (SOT883)  |            | DFN1006B-3 (SOT883B)   |            | SOT1215   |            |
|-----------------------|---------------------|---|---------|-----------|---|------------|--|------------|---|------------|
|                       |                     |   |         |           |  |            |  |            |  |            |
| Size (mm)             |                     |   |         |           | 1.0 x 0.6 x 0.48  |            | 1.0 x 0.6 x 0.37   |            | 1.1 x 1.0 x 0.37  |            |
| P <sub>tot</sub> (mW) |                     |   |         |           | 250   |            | 250  |            | 750   |            |
| V <sub>CE0</sub> (V)  | I <sub>C</sub> (mA) | Configuration   | R1 (kΩ) | R2 (kΩ)   | NPN   | PNP        | NPN  | PNP        | NPN   | PNP        |
| 50                    | 100                 |  | 1       | 1         |   | PDTA113EM  |  | PDTA113EMB |   |            |
|                       |                     |   | 2.2     | 2.2       | PDTC123EM   | PDTA123EM  | PDTC123EMB   | PDTA123EMB |   |            |
|                       |                     |   | 4.7     | 4.7       | PDTC143EM   | PDTA143EM  | PDTC143EMB   | PDTA143EMB | PDTC143EQA  | PDTA143EQA |
|                       |                     |   | 10      | 10        | PDTC114EM   | PDTA114EM  | PDTC114EMB   | PDTA114EMB | PDTC114EQA  | PDTA114EQA |
|                       |                     |   | 22      | 22        | PDTC124EM   | PDTA124EM  | PDTC124EMB   | PDTA124EMB | PDTC124EQA  | PDTA124EQA |
|                       |                     |   | 47      | 47        | PDTC144EM   | PDTA144EM  | PDTC144EMB   | PDTA144EMB | PDTC144EQA  | PDTA144EQA |
|                       |                     |   | 100     | 100       | PDTC115EM   | PDTA115EM  | PDTC115EMB   | PDTA115EMB |   |            |
|                       |                     |   | 1       | 10        |   | PDTA113ZM  |  | PDTA113ZMB |   |            |
|                       |                     |   | 2.2     | 10        | PDTC123YM   | PDTA123YM  | PDTC123YMB   | PDTA123YMB |   |            |
|                       |                     |   | 2.2     | 47        | PDTC123JM   | PDTA123JM  | PDTC123JMB   | PDTA123JMB | PDTC123JQA  | PDTA123JQA |
|                       |                     |   | 4.7     | 10        | PDTC143XM   | PDTA143XM  | PDTC143XMB   | PDTA143XMB | PDTC143XQA  | PDTA143XQA |
|                       |                     |   | 4.7     | 47        | PDTC143ZM   | PDTA143ZM  | PDTC143ZMB   | PDTA143ZMB | PDTC143ZQA  | PDTA143ZQA |
|                       |                     |   | 10      | 47        | PDTC114YM   | PDTA114YM  | PDTC114YMB   | PDTA114YMB | PDTC114YQA  | PDTA114YQA |
|                       |                     |   | 22      | 47        | PDTC124XM   | PDTA124XM  | PDTC124XMB   | PDTA124XMB |   |            |
|                       |                     | 47  | 10      | PDTC144VM | PDTA144VM   | PDTC144VMB | PDTA144VMB   |            |   |            |
|                       |                     | 47  | 22      | PDTC144WM | PDTA144WM   | PDTC144WMB | PDTA144WMB   |            |   |            |
|                       |                     |  | 2.2     | -         | PDTC123TM   | PDTA123TM  | PDTC123TMB   | PDTA123TMB |   |            |
|                       |                     |   | 4.7     | -         | PDTC143TM   | PDTA143TM  | PDTC143TMB   | PDTA143TMB |   |            |
|                       |                     |   | 10      | -         | PDTC114TM   | PDTA114TM  | PDTC114TMB   | PDTA114TMB |   |            |
|                       |                     |   | 22      | -         | PDTC124TM   | PDTA124TM  | PDTC124TMB   | PDTA124TMB |   |            |
|                       |                     |   | 47      | -         | PDTC144TM   | PDTA144TM  | PDTC144TMB   | PDTA144TMB |   |            |
|                       |                     |   | 100     | -         | PDTC115TM   | PDTA115TM  | PDTC115TMB   | PDTA115TMB |   |            |

## Resistor equipped transistors (RETs)

### RETs 100 mA double

| Package               |                     |               |          |         | DFN1010B-6 (SOT1216)  |           |           | DFN1412-6 (SOT1268)   |           |           | SOT363 (SC-88)  |           |           |        |        |
|-----------------------|---------------------|---------------|----------|---------|---|-----------|-----------|---|-----------|-----------|---|-----------|-----------|--------|--------|
|                       |                     |               |          |         |  |           |           |  |           |           |  |           |           |        |        |
| Size (mm)             |                     |               |          |         | 1.1 x 1.0 x 0.37  |           |           | 1.4 X 1.2 X 0.5   |           |           | 2.0 x 1.25 x 0.95   |           |           |        |        |
| P <sub>tot</sub> (mW) |                     |               |          |         | 350   |           |           | 480   |           |           | 300   |           |           |        |        |
| V <sub>CE0</sub> (V)  | I <sub>C</sub> (mA) | Configuration | R1 (kΩ)  | R2 (kΩ) | NPN / NPN   | NPN / PNP | PNP / PNP | NPN / NPN   | NPN / PNP | PNP / PNP | NPN / NPN   | NPN / PNP | PNP / PNP |        |        |
| 50                    | 100                 | R1 = R2       | 2.2      | 2.2     |   |           |           |   |           |           |   | PUMH20    | PUMD20    | PUMB20 |        |
|                       |                     |               | 4.7      | 4.7     |   |           |           |   |           |           |   | PUMH15    | PUMD15    | PUMB15 |        |
|                       |                     |               | 10       | 10      | PQMH11  | PQMD3     | PQMB11    | PRMH11  | PRMD3     | PRMB11    | PUMH11  | PUMD3     | PUMB11    |        |        |
|                       |                     |               | 22       | 22      |   | PQMD2     |           |   | PRMD2     |           | PUMH1   | PUMD2     | PUMB1     |        |        |
|                       |                     |               | 47       | 47      | PQMH2   | PQMD12    |           | PRMH2   | PRMD12    |           | PUMH2   | PUMD12    | PUMB2     |        |        |
|                       |                     |               | 100      | 100     |   |           |           |   |           |           | PUMH24  | PUMD24    | PUMB24    |        |        |
|                       |                     | R1 ≠ R2       | 2.2      | 47      | PQMH10  | PQMD10    |           |   | PRMH10    | PRMD10    |   |           | PUMH10    | PUMD10 | PUMB10 |
|                       |                     |               | 4.7      | 10      |   |           |           |   |           |           |   |           | PUMH18    | PUMD18 | PUMB18 |
|                       |                     |               | 4.7      | 47      | PQMH13  | PQMD13    |           |   | PRMH13    | PRMD13    |   |           | PUMH13    | PUMD13 | PUMB13 |
|                       |                     |               | 10       | 47      | PQMH9   |           |           |   | PRMH9     |           |   |           | PUMH9     | PUMD9  | PUMB9  |
|                       |                     |               | 22       | 47      |   | PQMD16    |           |   |           | PRMD16    |   |           | PUMH16    | PUMD16 | PUMB16 |
|                       |                     |               | 47       | 22      |   |           |           |   |           |           |   |           | PUMH17    | PUMD17 | PUMB17 |
|                       |                     | Only R1       | 47 / 2.2 | 47 / 47 |   |           |           |   |           |           |   |           |           | PUMD48 |        |
|                       |                     |               | 2.2      | -       |   |           |           |   |           |           |   |           | PUMH30    | PUMD30 | PUMB30 |
|                       |                     |               | 4.7      | -       |   |           |           |   |           |           |   |           | PUMH7     | PUMD6  | PUMB3  |
|                       |                     |               | 10       | -       |   |           |           |   |           |           |   |           | PUMH4     | PUMD4  | PUMB4  |
|                       |                     |               | 22       | -       |   |           |           |   |           |           |   |           | PUMH19    | PUMD19 | PUMB19 |
|                       |                     | 47            | -        |         |   |           |           |   |           |           |   | PUMH14    | PUMD14    | PUMB14 |        |



### RETs 500 mA single / double

| Package               |                     |               |         |         | SOT457 (SC-74)  |           | SOT23   |           | SOT323 (SC-70)  |           | SOT1215   |            |
|-----------------------|---------------------|---------------|---------|---------|---|-----------|---|-----------|---|-----------|---|------------|
|                       |                     |               |         |         |  |           |  |           |  |           |  |            |
| Size (mm)             |                     |               |         |         | 2.9 x 1.5 x 1.0   |           | 2.9 x 1.3 x 1.0   |           | 2.0 x 1.25 x 0.95   |           | 1.1 x 1.0 x 0.37  |            |
| P <sub>tot</sub> (mW) |                     |               |         |         | 750   |           | 250   |           | 200   |           | 750   |            |
| V <sub>CE0</sub> (V)  | I <sub>C</sub> (mA) | Configuration | R1 (kΩ) | R2 (kΩ) | NPN / NPN   | NPN / PNP | NPN   | PNP       | NPN   | PNP       | NPN   | PNP        |
| 50                    | 500                 | R1 = R2       | 1       | 1       |   |           | PDTD113ET   | PDTB113ET | PDTD113EU   | PDTB113EU | PDTD113EQA  | PDTB113EQA |
|                       |                     |               | 2.2     | 2.2     |   |           | PDTD123ET   | PDTB123ET | PDTD123EU   | PDTB123EU | PDTD123EQA  | PDTB123EQA |
|                       |                     |               | 4.7     | 4.7     |   |           | PDTD143ET   | PDTB143ET | PDTD143EU   | PDTB143EU | PDTD143EQA  | PDTB143EQA |
|                       |                     |               | 10      | 10      |   |           | PDTD114ET   | PDTB114ET | PDTD114EU   | PDTB114EU | PDTD114EQA  | PDTB114EQA |
|                       |                     | R1 ≠ R2       | 1       | 10      | PIMN31  | PIMC31    | PDTD113ZT   | PDTB113ZT | PDTD113ZU   | PDTB113ZU | PDTD113ZQA  | PDTB113ZQA |
|                       |                     |               | 2.2     | 10      |   |           | PDTD123YT   | PDTB123YT | PDTD123YU   | PDTB123YU | PDTD123YQA  | PDTB123YQA |
|                       |                     |               | 4.7     | 10      |   |           | PDTD143XT   | PDTB143XT | PDTD143XU   | PDTB143XU | PDTD143XQA  | PDTB143XQA |
|                       |                     | Only R1       | 2.2     | -       |   |           |   |           | PDTD123TT   | PDTB123TT |   |            |



### 3-terminal adjustable shunt regulators

Types in **bold red** are in development

| Type name              | Pinning configuration | Tamb(C°)   | Vref |       | Package  | Size(mm)        | Ptot(mW) | VKA(V) | IK(mA) |
|------------------------|-----------------------|------------|------|-------|--|-----------------|----------|--------|--------|
| <b>TLVH431NCDBZR</b>   | Normal pinning        | 0 to 70    | 1.5% | 1.24  | <br>SOT23 | 2.9 x 1.3 x 1.0 | 480      | 20     | 80     |
| <b>TLVH431NIDBZR</b>   | Normal pinning        | -40 to 85  |      |       |  |                 |          |        |        |
| <b>TLVH431NQDBZR</b>   | Normal pinning        | -40 to 125 |      |       |  |                 |          |        |        |
| <b>TLVH431NMQDBZR</b>  | Mirrored pinning      | -40 to 125 |      |       |  |                 |          |        |        |
| <b>TLVH431NACDBZR</b>  | Normal pinning        | 0 to 70    | 1%   | 2.495 |  |                 |          |        |        |
| <b>TLVH431NAIDBZR</b>  | Normal pinning        | -40 to 85  |      |       |  |                 |          |        |        |
| <b>TLVH431NAQDBZR</b>  | Normal pinning        | -40 to 125 |      |       |  |                 |          |        |        |
| <b>TLVH431NAMQDBZR</b> | Mirrored pinning      | -40 to 125 |      |       |  |                 |          |        |        |
| TL431CDBZR             | Normal pinning        | 0 to 70    | 2%   | 2.495 | <br>SOT23 | 2.9 x 1.3 x 1.0 | 580      | 36     | 100    |
| TL431IDBZR             | Normal pinning        | -40 to 85  |      |       |  |                 |          |        |        |
| TL431QDBZR             | Normal pinning        | -40 to 125 |      |       |  |                 |          |        |        |
| TL431FDT               | Normal pinning        | -40 to 125 |      |       |  |                 |          |        |        |
| TL431MFD               | Mirrored pinning      | -40 to 125 |      |       |  |                 |          |        |        |
| TL431ACDBZR            | Normal pinning        | 0 to 70    | 1%   | 2.495 |  |                 |          |        |        |
| TL431AIDBZR            | Normal pinning        | -40 to 85  |      |       |  |                 |          |        |        |
| TL431AQDBZR            | Normal pinning        | -40 to 125 |      |       |  |                 |          |        |        |
| TL431AFDT              | Normal pinning        | -40 to 125 |      |       |  |                 |          |        |        |
| TL431AMFD              | Mirrored pinning      | -40 to 125 |      |       |  |                 |          |        |        |
| TL431BCDBZR            | Normal pinning        | 0 to 70    | 0.5% | 2.495 |  |                 |          |        |        |
| TL431BIDBZR            | Normal pinning        | -40 to 85  |      |       |  |                 |          |        |        |
| TL431BQDBZR            | Normal pinning        | -40 to 125 |      |       |  |                 |          |        |        |
| TL431BFDT              | Normal pinning        | -40 to 125 |      |       |  |                 |          |        |        |
| TL431BMFD              | Mirrored pinning      | -40 to 125 |      |       |  |                 |          |        |        |



|  |           |
|--|-----------|
| <b>Zener diodes</b> .....  | <b>36</b> |
| General purpose Zener diodes .....   | 36        |
| Zener diodes specifications .....  | 37        |
| <b>Switching diodes</b> .....  | <b>38</b> |
| General purpose, high speed switching diodes $\leq 90V$ .....                                    | 38        |
| General purpose, high speed switching diodes 100V .....  | 38        |
| General purpose, switching diodes $\geq 100V$ .....  | 39        |
| Controlled avalanche switching diodes .....  | 40        |
| Low leakage current switching diodes .....   | 40        |
| <b>Recovery rectifiers</b> .....   | <b>41</b> |
| Recovery rectifiers - Automotive qualified .....   | 41        |
| Nomenclature recovery rectifiers automotive grade types .....                                    | 41        |
| <b>Schottky diodes and rectifiers</b> .....  | <b>42</b> |
| General purpose Schottky diodes $\leq 250$ mA .....  | 42        |
| Low capacitance Schottky diodes .....  | 43        |
| Medium power low VF Schottky rectifiers single $\geq 200$ mA - leadless DSN / DFN packages ..... | 44        |
| Medium power low VF Schottky rectifiers single $\geq 200$ mA .....                               | 46        |
| Medium power low VF Schottky rectifiers single $\geq 200$ mA - leaded packages .....             | 47        |
| Medium power low VF Schottky rectifiers dual $\geq 200$ mA .....                                 | 48        |
| <b>Nomenclatures</b> .....   | <b>49</b> |

## General purpose Zener diodes

| $I_F$ max (mA) | $P_{ZSM}$ (W) | $V_Z$ nom (V) | $V_Z$ tolerance | Note    | Configuration | Series  | Package         | Size (mm)          | $P_{tot}$ (mW)  |                    |      |
|----------------|---------------|---------------|-----------------|---------|---------------|---|-----------------|--------------------|---|--------------------|------|
| 500            | -             | 3.3~24        | C               | Europe  | Single        |    | 1N47xxA series  | SOD66 (DO-41)      |    | 4.8 x 2.6 x 0.81   | 1000 |
|                | 60            | 3.6~75        |                 |         |               |   | BZV85 series    |                    |   |                    |      |
| 250            | -             | 2.1~36        | About 2%        | Special | Single        |    | NZX series      | SOD27 (DO-35)      |    | 4.25 x 1.85 x 0.56 | 400  |
|                | 40            | 2.4~75        | B, C            | Europe  |               |   | BZX79 series    |                    |   |                    |      |
| 400            | 40            | 2.4~75        | C               | Europe  | Single        |    | BZV90 series    | SOT223 (SC-73)     |    | 6.5 x 3.5 x 1.65   | 1500 |
| 250            | 40            | 2.4~75        | C               | Europe  | Single        |    | BZV49 series    | SOT89 (SC-62)      |    | 4.5 x 2.5 x 1.5    | 1000 |
| 250            | 40            | 2.4~75        | B, C            | Europe  | Single        |    | BZV55 series    | SOD80C (MiniMelf)  |    | 3.5 x 1.5 x 1.5    | 400  |
| 200            | 40            | 2.4~75        | B, C            | Europe  | Dual c.a.     |    | BZB84 series    | SOT23              |    | 2.9 x 1.3 x 1.0    | 250  |
|                |               |               | A, B, C         |         | Single        |    | BZX84 series    |                    |   |                    |      |
| 250            | 30            | 5~6.8         | 0.2 V           | Ave     | Single        |    | PLVA600A series |                    |   |                    |      |
| 250            | 40            | 2.4~75        | B, C            | Europe  | Single        |   | BZT52 series    | SOD123             |   | 2.7 x 1.6 x 1.2    | 550  |
| 200            |               | 2.4~36        | B               | Japan   |               |   | PDZ-GW series   |                    |   |                    |      |
| 250            | -             | 3.0~30        | About 2.5%      | Special | Single        |  | NZH series      | SOD123F            |  | 2.6 x 1.6 x 1.1    | 830  |
|                | 40            | 2.4~75        | B, C            | Europe  |               |   | BZT52H series   |                    |   |                    |      |
| 200            | 40            | 10            | B2              | Japan   | Dual isolated |  | PZU10DB2 series | SOT353 (SC-88A)    |  | 2.0 x 1.25 x 0.95  | 300  |
| 200            | 40            | 2.4~15        | C               | Europe  | Dual c.a.     |  | BZB784 series   | SOT323 (SC-70)     |  | 2.0 x 1.25 x 0.95  | 350  |
| 200            | 40            | 2.4~75        | B, C            | Europe  | Single        |  | BZX84W series   |                    |   |                    |      |
| 200            | 30            | 100           | C               | Europe  | Back-to-back  |  | BZB100A         | SOD323 (SC-76)     |  | 1.7 x 1.25 x 0.95  | 300  |
|                | 40            | 2.4~36        | B2              | Japan   | Single        |  | PDZ-B series    |                    |   |                    |      |
| 250            | 40            | 2.4~75        | B, C            | Europe  | Single        |  | BZX384 series   | SOD323F (SC-90)    |  | 1.7 x 1.25 x 0.7   | 550  |
| 200            | 40            | 2.4~36        | B, B1, B2, B3   | Japan   | Single        |  | PZUxBA series   |                    |   |                    |      |
| 200            | 60            | 100           | C               | Europe  | Single        |  | BZX100A         | SOD323F (SC-90)    |  | 1.7 x 1.25 x 0.7   | 550  |
| 200            | 40            | 2.4~36        | B, B1, B2, B3   | Japan   | Single        |  | PZUxB series    |                    |   |                    |      |
| 250            | 40            | 2.4~75        | B, C            | Europe  | Single        |  | BZX84J series   |                    |   |                    |      |
| 200            | 40            | 2.4~75        | B, C            | Europe  | Single        |  | BZX585 series   | SOD523 (SC-79)     |  | 1.2 x 0.8 x 0.6    | 300  |
| 200            | 40            | 2.4~75        | B, C            | Europe  | Single        |  | BZX884 series   | DFN1006-2 (SOD882) |  | 1.0 x 0.6 x 0.48   | 250  |
|                |               | 2.4~36        | B, B2           | Japan   |               |   | PZUxBL series   |                    |   |                    |      |
| 250            | 40            | 2.4~30        | B               | Europe  | Single        |  | TDZxJ series    | SOD323F            |  | 1.7 x 1.25 x 0.7   | 500  |

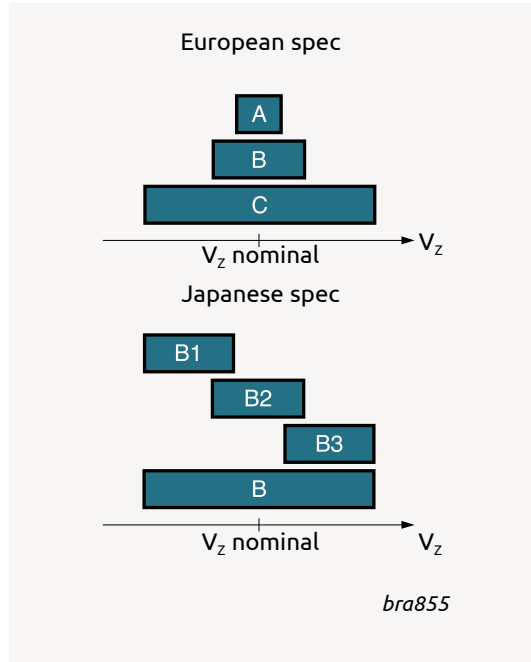
**Notes:**

Japan: B selection: app. 5%  $V_Z$  tolerance, B1, B2, B3 selections: app. 2%  $V_Z$  tolerance in sequential intervals  
 Europe: A selection: app. 1%  $V_Z$  tolerance, B selection: app. 2%  $V_Z$  tolerance, C selection: app. 5%  $V_Z$  tolerance;  
 the selections are in overlapping intervals

Ave: low-voltage avalanche regulator diodes  
 Dual c.a.: dual common anode

# Zener diodes specifications

## Differences in Zener specifications



## Japanese spec (PZU, PDZ)

| y =     | B-series      | B1-series     | B2-series     | B3-series     |
|---------|---------------|---------------|---------------|---------------|
|         | ± 5%          | ± 2%          | ± 2%          | ± 2%          |
|         | $V_z$ (V)     | $V_z$ (V)     | $V_z$ (V)     | $V_z$ (V)     |
| PZU2.4y | 2.3 - 2.6     | -             | -             | -             |
| PZU2.7y | 2.5 - 2.9     | 2.5 - 2.75    | 2.65 - 2.9    | -             |
| PZU3.0y | 2.8 - 3.2     | 2.8 - 3.05    | 2.95 - 3.2    | -             |
| PZU3.3y | 3.1 - 3.5     | 3.1 - 3.35    | 3.25 - 3.5    | -             |
| PZU3.6y | 3.4 - 3.8     | 3.4 - 3.65    | 3.55 - 3.8    | -             |
| PZU3.9y | 3.7 - 4.1     | 3.7 - 3.97    | 3.87 - 4.1    | -             |
| PZU4.3y | 4.01 - 4.48   | 4.01 - 4.21   | 4.15 - 4.34   | 4.28 - 4.48   |
| PZU4.7y | 4.42 - 4.9    | 4.42 - 4.61   | 4.55 - 4.75   | 4.69 - 4.9    |
| PZU5.1y | 4.84 - 5.37   | 4.84 - 5.04   | 4.98 - 5.2    | 5.14 - 5.37   |
| PZU5.6y | 5.31 - 5.92   | 5.31 - 5.55   | 5.49 - 5.73   | 5.67 - 5.92   |
| PZU6.2y | 5.86 - 6.53   | 5.86 - 6.12   | 6.06 - 6.33   | 6.26 - 6.53   |
| PZU6.8y | 6.47 - 7.14   | 6.47 - 6.73   | 6.65 - 6.93   | 6.86 - 7.14   |
| PZU7.5y | 7.06 - 7.84   | 7.06 - 7.36   | 7.28 - 7.6    | 7.52 - 7.84   |
| PZU8.2y | 7.76 - 8.64   | 7.76 - 8.1    | 8.02 - 8.36   | 8.28 - 8.64   |
| PZU9.1y | 8.56 - 9.55   | 8.56 - 8.93   | 8.85 - 9.23   | 9.15 - 9.55   |
| PZU10y  | 9.45 - 10.55  | 9.45 - 9.87   | 9.77 - 10.21  | 10.11 - 10.55 |
| PZU11y  | 10.44 - 11.56 | 10.44 - 10.88 | 10.76 - 11.22 | 11.1 - 11.56  |
| PZU12y  | 11.42 - 12.6  | 11.42 - 11.9  | 11.74 - 12.24 | 12.08 - 12.6  |
| PZU13y  | 12.47 - 13.96 | 12.47 - 13.03 | 12.91 - 13.49 | 13.37 - 13.96 |
| PZU14y  | -             | -             | 13.7 - 14.3   | -             |
| PZU15y  | 13.84 - 15.52 | 13.84 - 14.46 | 14.34 - 14.98 | 14.85 - 15.52 |
| PZU16y  | 15.37 - 17.09 | 15.37 - 16.01 | 15.85 - 16.51 | 16.35 - 17.09 |
| PZU18y  | 16.94 - 19.03 | 16.94 - 17.7  | 17.56 - 18.35 | 18.21 - 19.03 |
| PZU20y  | 18.86 - 21.08 | 18.86 - 19.7  | 19.52 - 20.39 | 20.21 - 21.08 |
| PZU22y  | 20.88 - 23.17 | 20.88 - 21.77 | 21.54 - 22.47 | 22.23 - 23.17 |
| PZU24y  | 22.93 - 25.57 | 22.93 - 23.96 | 23.72 - 24.78 | 24.54 - 25.57 |
| PZU27y  | 25.1 - 28.9   | -             | -             | -             |
| PZU30y  | 28 - 32       | -             | -             | -             |
| PZU33y  | 31 - 35       | -             | -             | -             |
| PZU36y  | 34 - 38       | -             | -             | -             |

## European spec (BZV, BZX, BZB, 1N47)





















| y =        | C-series    | B-series    | A-series      |
|------------|-------------|-------------|---------------|
|            | ±5%         | ±2%         | ±1%           |
|            | $V_z$ (V)   | $V_z$ (V)   | $V_z$ (V)     |
| BZX84-y2V4 | 2.2 - 2.6   | 2.35 - 2.45 | 2.37 - 2.43   |
| BZX84-y2V7 | 2.5 - 2.9   | 2.65 - 2.75 | 2.67 - 2.73   |
| BZX84-y3V0 | 2.8 - 3.2   | 2.94 - 3.06 | 2.97 - 3.03   |
| BZX84-y3V3 | 3.1 - 3.5   | 3.23 - 3.37 | 3.26 - 3.34   |
| BZX84-y3V6 | 3.4 - 3.8   | 3.53 - 3.67 | 3.56 - 3.64   |
| BZX84-y3V9 | 3.7 - 4.1   | 3.82 - 3.98 | 3.86 - 3.94   |
| BZX84-y4V3 | 4 - 4.6     | 4.21 - 4.39 | 4.25 - 4.35   |
| BZX84-y4V7 | 4.4 - 5     | 4.61 - 4.79 | 4.65 - 4.75   |
| BZX84-y5V1 | 4.8 - 5.4   | 5 - 5.2     | 5.04 - 5.16   |
| BZX84-y5V6 | 5.2 - 6     | 5.49 - 5.71 | 5.54 - 5.66   |
| BZX84-y6V2 | 5.8 - 6.6   | 6.08 - 6.32 | 6.13 - 6.27   |
| BZX84-y6V8 | 6.4 - 7.2   | 6.66 - 6.94 | 6.73 - 6.87   |
| BZX84-y7V5 | 7 - 7.9     | 7.35 - 7.65 | 7.42 - 7.58   |
| BZX84-y8V2 | 7.7 - 8.7   | 8.04 - 8.36 | 8.11 - 8.29   |
| BZX84-y9V1 | 8.5 - 9.6   | 8.92 - 9.28 | 9 - 9.2       |
| BZX84-y10  | 9.4 - 10.6  | 9.8 - 10.2  | 9.9 - 10.1    |
| BZX84-y11  | 10.4 - 11.6 | 10.8 - 11.2 | 10.8 - 11.11  |
| BZX84-y12  | 11.4 - 12.7 | 11.8 - 12.2 | 11.88 - 12.12 |
| BZX84-y13  | 12.4 - 14.1 | 12.7 - 13.3 | 12.87 - 13.13 |
| BZX84-y15  | 13.8 - 15.6 | 14.7 - 15.3 | 14.85 - 15.15 |
| BZX84-y16  | 15.3 - 17.1 | 15.7 - 16.3 | 15.84 - 16.16 |
| BZX84-y18  | 16.8 - 19.1 | 17.6 - 18.4 | 17.82 - 18.18 |
| BZX84-y20  | 18.8 - 21.2 | 19.6 - 20.4 | 19.8 - 20.2   |
| BZX84-y22  | 20.8 - 23.3 | 21.6 - 22.4 | 21.78 - 22.22 |
| BZX84-y24  | 22.8 - 25.6 | 23.5 - 24.5 | 23.76 - 24.24 |
| BZX84-y27  | 25.1 - 28.9 | 26.5 - 27.5 | 26.73 - 27.27 |
| BZX84-y30  | 28 - 32     | 29.4 - 30.6 | 29.70 - 30.30 |
| BZX84-y33  | 31 - 35     | 32.3 - 33.7 | 32.67 - 33.33 |
| BZX84-y36  | 34 - 38     | 35.3 - 36.7 | 35.64 - 36.36 |
| BZX84-y39  | 37 - 41     | 38.2 - 39.8 | 38.61 - 39.39 |
| BZX84-y43  | 40 - 46     | 42.1 - 43.9 | 42.57 - 43.43 |
| BZX84-y47  | 44 - 50     | 46.1 - 47.9 | -             |
| BZX84-y51  | 48 - 54     | 50 - 52     | 50.49 - 51.51 |
| BZX84-y56  | 52 - 60     | 54.9 - 57.1 | -             |
| BZX84-y62  | 58 - 66     | 60.8 - 63.2 | -             |
| BZX84-y68  | 64 - 72     | 66.6 - 69.4 | -             |
| BZX84-y75  | 70 - 79     | 73.5 - 76.5 | 74.25 - 75.75 |

## NZX-series in SOD27





















|         | $V_z$ (V) |         | $V_z$ (V)     |        | $V_z$ (V)     |
|---------|-----------|---------|---------------|--------|---------------|
| NZX2V1A | 2.0 - 2.2 | NZX6V2D | 6.1 - 6.4     | NZX14C | 13.8 - 14.3   |
| NZX2V4A | 2.3 - 2.5 | NZX6V2E | 6.3 - 6.6     | NZX15A | 14.1 - 14.7   |
| NZX2V4B | 2.4 - 2.6 | NZX6V8A | 6.4 - 6.7     | NZX15B | 14.5 - 15.1   |
| NZX2V7A | 2.5 - 2.7 | NZX6V8B | 6.6 - 6.9     | NZX15C | 14.9 - 15.5   |
| NZX2V7B | 2.6 - 2.8 | NZX6V8C | 6.7 - 7       | NZX15X | 14.35 - 15.09 |
| NZX2V7C | 2.7 - 2.9 | NZX6V8D | 6.9 - 7.2     | NZX16A | 15.3 - 15.9   |
| NZX3V0A | 2.8 - 3   | NZX7V5A | 7 - 7.3       | NZX16B | 15.7 - 16.5   |
| NZX3V0B | 2.9 - 3.1 | NZX7V5B | 7.2 - 7.6     | NZX16C | 16.3 - 17.1   |
| NZX3V0C | 3 - 3.2   | NZX7V5C | 7.3 - 7.7     | NZX18A | 16.9 - 17.7   |
| NZX3V3A | 3.1 - 3.3 | NZX7V5D | 7.5 - 7.9     | NZX18B | 17.5 - 18.3   |
| NZX3V3B | 3.2 - 3.4 | NZX7V5X | 7.07 - 7.45   | NZX18C | 18.1 - 19     |
| NZX3V3C | 3.3 - 3.5 | NZX8V2A | 7.7 - 8.1     | NZX20A | 18.8 - 19.7   |
| NZX3V6A | 3.4 - 3.6 | NZX8V2B | 7.9 - 8.3     | NZX20B | 19.5 - 20.4   |
| NZX3V6B | 3.5 - 3.7 | NZX8V2C | 8.1 - 8.5     | NZX20C | 20.2 - 21.2   |
| NZX3V6C | 3.6 - 3.8 | NZX8V2D | 8.3 - 8.7     | NZX22A | 20.9 - 21.9   |
| NZX3V9A | 3.7 - 3.9 | NZX9V1A | 8.5 - 8.9     | NZX22B | 21.6 - 22.6   |
| NZX3V9B | 3.8 - 4   | NZX9V1B | 8.7 - 9.1     | NZX22C | 22.3 - 23.3   |
| NZX3V9C | 3.9 - 4.1 | NZX9V1C | 8.9 - 9.3     | NZX24A | 22.9 - 24     |
| NZX4V3A | 4 - 4.2   | NZX9V1D | 9.1 - 9.5     | NZX24B | 23.6 - 24.7   |
| NZX4V3B | 4.1 - 4.3 | NZX9V1E | 9.3 - 9.7     | NZX24C | 24.3 - 25.5   |
| NZX4V3C | 4.2 - 4.4 | NZX10A  | 9.5 - 9.9     | NZX24X | 22.61 - 23.77 |
| NZX4V3D | 4.3 - 4.5 | NZX10B  | 9.7 - 10.1    | NZX27A | 25.2 - 26.6   |
| NZX4V7A | 4.4 - 4.6 | NZX10C  | 9.9 - 10.3    | NZX27B | 26.2 - 27.6   |
| NZX4V7B | 4.5 - 4.7 | NZX10D  | 10.2 - 10.6   | NZX27C | 27.2 - 28.6   |
| NZX4V7C | 4.6 - 4.8 | NZX11A  | 10.4 - 10.8   | NZX27X | 26.99 - 28.39 |
| NZX4V7D | 4.7 - 4.9 | NZX11B  | 10.7 - 11.1   | NZX30A | 28.2 - 29.6   |
| NZX5V1A | 4.8 - 5   | NZX11C  | 10.9 - 11.3   | NZX30B | 29.2 - 30.6   |
| NZX5V1B | 4.9 - 5.1 | NZX11D  | 11.1 - 11.6   | NZX30C | 30.2 - 31.6   |
| NZX5V1C | 5 - 5.2   | NZX12A  | 11.4 - 11.9   | NZX30X | 29.02 - 30.51 |
| NZX5V1D | 5.1 - 5.3 | NZX12B  | 11.6 - 12.1   | NZX33A | 31.2 - 32.6   |
| NZX5V6A | 5.2 - 5.5 | NZX12C  | 11.9 - 12.4   | NZX33B | 32.2 - 33.6   |
| NZX5V6B | 5.3 - 5.6 | NZX12D  | 12.2 - 12.7   | NZX33C | 33.2 - 34.5   |
| NZX5V6C | 5.4 - 5.7 | NZX12X  | 11.44 - 12.03 | NZX36A | 34.2 - 35.7   |
| NZX5V6D | 5.5 - 5.8 | NZX13A  | 12.4 - 12.9   | NZX36B | 35.3 - 36.8   |
| NZX5V6E | 5.6 - 5.9 | NZX13B  | 12.6 - 13.1   | NZX36C | 36.4 - 38     |
| NZX6V2A | 5.7 - 6   | NZX13C  | 12.9 - 13.4   | NZX36X | 35.36 - 37.19 |
| NZX6V2B | 5.8 - 6.1 | NZX14A  | 13.2 - 13.7   |        |               |
| NZX6V2C | 6 - 6.3   | NZX14B  | 13.5 - 14     |        |               |

## Switching diodes

### General purpose, high speed switching diodes <= 90V




































| $V_R$ max (V)  | $V_F$ max (V) | @ $I_F$ (mA) | $I_R$ max (nA) | @ $V_R$ (V) | $t_{rr}$ max (ns) | Package   | SOD80C (MiniMelf)   | SOT23   | SOT143B   | SOT323 (SC-70)  | SOT363 (SC-88)  | DFN1412-6 (SOT1268)   | DFN1010D-3 (SOT1215)  | DFN1006-3 (SOT883)  |  |
|----------------|---------------|--------------|----------------|-------------|-------------------|---|---|---|---|---|---|---|---|---|--|
|                |               |              |                |             |                   |   |  |  |  |  |  |  |  |  |  |
| Size (mm)      |               |              |                |             |                   |   | 3.5 x 1.5 x 1.5   | 2.9 x 1.3 x 1.0   | 2.9 x 1.3 x 1.0   | 2.0 x 1.25 x 0.95   | 2.0 x 1.25 x 0.95   | 1.4 x 1.2 x 0.5   | 1.1 x 1.0 x 0.37  | 1.0 x 0.6 x 0.48  |  |
| $P_{tot}$ (mW) |               |              |                |             |                   |   | <b>400</b>  | <b>250</b>  | <b>250</b>  | <b>200</b>  | <b>350</b>  | <b>480</b>  | <b>325</b>  | <b>250</b>  |  |
| 50             | 1             | 50           | 100            | 50          | 4                 |    |   | BAL74   |   |   |   |   |   |   |  |
|                |               |              |                |             |                   |    |   | BAV74   |   |   |   |   |   |   |  |
| 70             | 1             | 50           | 1000           | 70          | 4                 |    |   | BAL99   |   |   |   |   |   |   |  |
|                |               |              |                |             |                   |    |   |   |   |   |   |   |   |   |  |
| 75             | 1             | 50           | 1000           | 75          | 4                 |    |   |   | BAS28   |   |   |   |   |   |  |
|                |               |              |                |             |                   |    | BAS32L  |   |   |   |   |   |   |   |  |
| 80             | 1             | 50           | 500            | 80          | 4                 |    |   |   |   | 1PS300  |   |   |   |   |  |
|                |               |              |                |             |                   |    |   |   |   | 1PS301  |   |   |   |   |  |
|                |               |              |                |             |                   |   |   |   |   | 1PS302  |   |   |   |   |  |
| 90             | 1             | 50           | 500            | 80          | 4                 |  |   | BAW56   |   | BAW56W  |   |   | BAW56QA   | BAW56M  |  |
|                |               |              |                |             |                   |  |   |   |   |   | BAW56S  | BAW56SRA  |   |   |  |
|                |               |              |                |             |                   |  |   |   |   |   | BAW756S   |   |   |   |  |

### General purpose, high speed switching diodes 100V

| $V_R$ max (V)  | $V_F$ max (V) | @ $I_F$ (mA) | $I_R$ max (nA) | @ $V_R$ (V) | $t_{rr}$ max (ns) | Package   | SOT23   | SOD123  | SOD123F   | SOT323 (SC-70)  | SOT363 (SC-88)  | SOD323 (SC-76)  | SOD323F (SC-90)   | DFN1412-6 (SOT1268)  | SOD523 (SC-79)  | DFN1010D-3 (SOT1215)  | DFN1006-2 (SOD882)  | DFN1006-3 (SOT883)  | DFN1006D-2 (SOD882D)  |            |            |
|----------------|---------------|--------------|----------------|-------------|-------------------|---|---|---|---|---|---|---|---|--|---|---|---|---|---|------------|------------|
|                |               |              |                |             |                   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |            |            |
| Size (mm)      |               |              |                |             |                   |   | 2.9 x 1.3 x 1.0   | 2.7 x 1.6 x 1.2   | 2.6 x 1.6 x 1.1   | 2.0 x 1.25 x 0.95   | 2.0 x 1.25 x 0.95   | 1.7 x 1.25 x 0.95   | 1.7 x 1.25 x 0.7  | 1.4 x 1.2 x 0.5  | 1.2 x 0.8 x 0.6   | 1.1 x 1.0 x 0.37  | 1.0 x 0.6 x 0.48  | 1.0 x 0.6 x 0.48  | 1.0 x 0.6 x 0.37  |            |            |
| $P_{tot}$ (mW) |               |              |                |             |                   |   | <b>250</b>  | <b>380</b>  | <b>375</b>  | <b>200</b>  | <b>300</b>  | <b>300</b>  | <b>300</b>  | <b>300</b>   | <b>480</b>  | <b>250</b>  | <b>325</b>  | <b>250</b>  | <b>250</b>  | <b>250</b> | <b>250</b> |
| 100            | 1             | 50           | 500            | 80          | 4                 |  |   | BAS16GW   | BAS16H  |   |   | BAS316  | BAS16J  |  | BAS516  |   | BAS16L  |   | BAS16LD   |            |            |
|                |               |              |                |             |                   |  | BAS16   |   | BAS16W  |   |   |   |   | BAS16QA  |   |   |   |   |   |            |            |
|                |               |              |                |             |                   |  |   |   |   | BAS16VY   |   |   |   |  |   |   |   |   |   |            |            |
|                |               |              |                |             |                   |  | BAV70   |   | BAV70W  |   |   |   |   |  | BAV70QA   |   | BAV70M  |   |   |            |            |
|                |               |              |                |             |                   |  |   |   |   | BAV70S  |   |   | BAV70SRA  |  |   |   |   |   |   |            |            |
|                |               |              |                |             |                   |  | BAV99   |   | BAV99W  |   |   |   |   |  | BAV99QA   |   |   |   |   |            |            |
|                |               |              |                |             |                   |  |   |   |   | BAV99S  |   |   |   |  |   |   |   |   |   |            |            |







General purpose, switching diodes >= 100V

Types in **bold** represent new products


















| $V_r$ max (V)   | $V_f$ max (V) | $I_f$ (mA) | $I_R$ max (mA) | $V_R$ (V) | $t_{rr}$ max (ns) | Package   | SOD80C (MiniMelf)   | SOT457 (SC-74)  | SOT23   | SOT143B   | SOD123  | SOD123F   | SOT323 (SC-70)  | SOT353 (SC-88A)   | SOT363 (SC-88)  | SOD323 (SC-76)   | SOD323F (SC-90)   | SOD523 (SC-79)  | DFN1006D-2 (SOD882(D))  | DFN1010D-3 (SOT1215)  |   |   |   |        |        |                |  |
|---|---------------|------------|----------------|-----------|-------------------|---|---|---|---|---|---|---|---|---|---|--|---|---|---|---|---|---|---|--------|--------|----------------|--|
|   |               |            |                |           |                   |    |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |        |        |                |  |
|   |               |            |                |           |                   | Size (mm)   | 3.5 x 1.5 x 1.5   | 2.9 x 1.5 x 1.0   | 2.9 x 1.3 x 1.0   | 2.9 x 1.3 x 1.0   | 2.7 x 1.6 x 1.2   | 2.6 x 1.6 x 1.1   | 2.0 x 1.25 x 0.95   | 2.0 x 1.25 x 0.95   | 2.0 x 1.25 x 0.95   | 1.7 x 1.25 x 0.95  | 1.7 x 1.25 x 0.7  | 1.2 x 0.8 x 0.6   | 1.0 x 0.6 x 0.48 (1.0 x 0.6 x 0.37)   | 1.1 x 1.0 x 0.37  |   |   |   |        |        |                |  |
|   |               |            |                |           |                   | $P_{tot}$ (mW)  | <b>400</b>  | <b>250</b>  | <b>250</b>  | <b>250</b>  | <b>380</b>  | <b>375</b>  | <b>200</b>  | <b>255</b>  | <b>300</b>  | <b>300</b>   | <b>300</b>  | <b>250</b>  | <b>250</b>  | <b>325</b>  |   |   |   |        |        |                |  |
| 100   | 1             | 100        | 100            | 100       | 50                |    |   |   | BAS19   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |        |        |                |  |
| 150   | 1             | 100        | 100            | 150       | 50                |    | BAV102  |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |        |        |                |  |
|   |               |            |                |           |                   |    |   |   | BAS20   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |        |        |                |  |
| 200   | 1             | 100        | 100            | 200       | 50                |    | BAV103  |   |   |   | BAS21GW   | BAS21H  |   |   |   |  | BAS321  | BAS321J   | <b>BAS521B</b>  | BAS21LL (LD)  | <b>BAV21QA</b>  |   |   |        |        |                |  |
|   |               |            |                |           |                   |    |   |   | BAS21   |   |   | BAS21W  |   |   |   |  |   |   |   |   |   |   |   |        |        |                |  |
|   |               |            |                |           |                   |    |   |   |   | BAS23   |   |   |   |   |   |  |   |   |   |   |   |   |   |        |        |                |  |
|   |               |            |                |           |                   |    |   |   |   |   |   |   |   |   |   |  |   | BAS21PG   |   |   |   |   |   |        |        |                |  |
|   |               |            |                |           |                   |    |   |   |   |   |   |   | BAS23A  |   |   |  | BAS21AW   |   |   |   |   |   |   |        |        |                |  |
|   |               |            |                |           |                   |   |   |   |   |   |   |   | BAS23C  |   |   |  |   |   |   |   |   |   |   |        |        | <b>BAV23QA</b> |  |
|   |               |            |                |           |                   |  |   |   |   |   |   |   | BAS23S  |   |   |  |   | BAS21SW   |   |   |   |   |   |        |        |                |  |
|   |               |            |                |           |                   |  |   |   |   |   |   |   | BA-S21AVD   |   |   |  |   |   |   |   |   |   |   |        |        |                |  |
|   |               |            |                |           |                   |  |   |   |   |   |   |   | BAS21VD   |   |   |  |   |   |   |   |   |   |   |        |        |                |  |
|   |               |            |                |           |                   | 300   | 1.1   | 100   | 150   | 250   | 50  |  |   |   |   |  |   |   |   |   |   |   |   | BAS21J | BAS521 |                |  |
|  |               |            | BAS101         |           |                   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |        |        |                |  |
|  |               |            | BAS101S        |           |                   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |        |        |                |  |
|  |               |            |                |           |                   |   |   |   |   |   |   | BAS101  |   |   |   |  |   |   |   |   |   |   |   |        |        |                |  |
|  |               |            |                |           |                   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   | BAS101S   |        |        |                |  |

## Switching diodes

### Controlled avalanche switching diodes

| $V_R$ max (V) | $V_F$ max (V) | @ $I_F$ (mA) | $I_R$ max (nA)<br>@ $V_R$ max | $I_{FBM}$ max (A) | $I_{FRM}$ max (mA) | $C_i$ max (pF) | $t_{rr}$ max (ns) | Package   | SOT23   | SOT143B         |
|---------------|---------------|--------------|-------------------------------|-------------------|--------------------|----------------|-------------------|---|---|-----------------|
|               |               |              |                               |                   |                    |                |                   |  |  |                 |
|               |               |              |                               |                   |                    |                |                   | Size (mm)   | 2.9 x 1.3 x 1.0   | 2.9 x 1.3 x 1.0 |
|               |               |              |                               |                   |                    |                |                   | $P_{tot}$ (mW)  | 250   | 250             |
| 60            | 1             | 200          | 100                           | 9                 | 600                | 2.5            | 6                 |  |   | BAS56           |
| 90            | 1             | 200          | 100                           | 10                | 600                | 35             | 50                |  | BAS29   |                 |
|               |               |              |                               |                   |                    |                |                   |  | BAS31   |                 |
|               |               |              |                               |                   |                    |                |                   |  | BAS35   |                 |



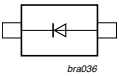
### Low leakage current switching diodes

| $V_R$ max (V) | $V_F$ max (V) | @ $I_F$ (mA) | $I_R$ max (nA)<br>@ $V_R$ max | $t_{rr}$ max ( $\mu$ s) | Package   | SOD80C<br>(MiniMelf)  | SOD68<br>(DO-34)  | SOT23   | SOD123  | SOD123F   | SOT323<br>(SC-70)  | SOD323<br>(SC-76)   | SOD523<br>(SC-79)   | DFN1010D-3<br>(SOT1215)   | DFN1006-3<br>(SOT883)   | DFN1006-2<br>(SOD882) |
|---------------|---------------|--------------|-------------------------------|-------------------------|---|---|---|---|---|---|--|---|---|---|---|-----------------------|
|               |               |              |                               |                         |    |  |  |  |  |  |  |  |  |  |  |                       |
|               |               |              |                               |                         | Size (mm)   | 3.5 x 1.5 x 1.5   | 3.04 x 1.6 x 0.55   | 2.9 x 1.3 x 1.0   | 2.7 x 1.6 x 1.2   | 2.6 x 1.6 x 1.1   | 2.0 x 1.25 x 0.95  | 1.7 x 1.25 x 0.95   | 1.2 x 0.8 x 0.6   | 1.1 x 1.0 x 0.37  | 1.0 x 0.6 x 0.48  | 1.0 x 0.6 x 0.48      |
|               |               |              |                               |                         | $P_{tot}$ (mW)  | 400   | 300   | 250   | 380   | 375   | 250  | 250   | 250   | 305   | 250   | 250                   |
| 75            | 1             | 10           | 5                             | 3                       |  |   |   |   | BAS116GW  | BAS116H   |  | BAS416  | BAS716  |   |   | BAS116L               |
|               |               |              |                               |                         |  |   |   | BAS116  |   |   |  |   | BAS116QA  |   |   |                       |
|               |               |              |                               |                         |  |   |   | BAV199  |   |   | BAV199W  |   |   |   |   |                       |
|               |               |              |                               |                         |  |   |   | BAW156  |   |   |  |   |   |   |   |                       |
|               |               |              |                               |                         |  |   |   | BAV170  |   |   |  |   | BAV170QA  | BAV170M   |   |                       |
| 125           | 1             | 100          | 1                             | 1.5 typ                 |  | BAS45AL   | BAS45A  |   |   |   |  |   |   |   |   |                       |



Recovery rectifiers - Automotive qualified

Types in **bold** represent new products

| V <sub>r</sub> max (V) | V <sub>f</sub> max (V) | I <sub>F</sub> (A) | I <sub>r</sub> max (µA) | V <sub>r</sub> (V) | t <sub>rr</sub> max (ns) | Package   | CFP5 (SOD128)  | CFP3 (SOD123W)  |
|------------------------|------------------------|--------------------|-------------------------|--------------------|--------------------------|---|--|---|
|                        |                        |                    |                         |                    |                          |   |  |  |
|                        |                        |                    |                         |                    |                          |   | 3.8 x 2.5 x 1.0  | 2.6 x 1.7 x 1.0   |
|                        |                        |                    |                         |                    |                          |   | 1050   | 950   |
| 200                    | 0.93                   | 1                  | 0.2                     | 200                | 25                       |  |  | <b>PNE20010ER</b>   |
|                        | 0.98                   | 2                  | 0.2                     | 200                | 25                       |   |  | <b>PNE20020ER</b>   |
|                        | 0.95                   | 2                  | 0.2                     | 200                | 25                       |   | <b>PNE20020EP</b>  |   |
|                        | 0.98                   | 3                  | 0.2                     | 200                | 30                       |   | <b>PNE20030EP</b>  |   |
| 400                    | 1.1                    | 1                  | 1                       | 400                | 1800                     |   |  | PNS40010ER  |

Diodes

Nomenclature recovery rectifiers automotive grade types

**PNE 200 10 E R**

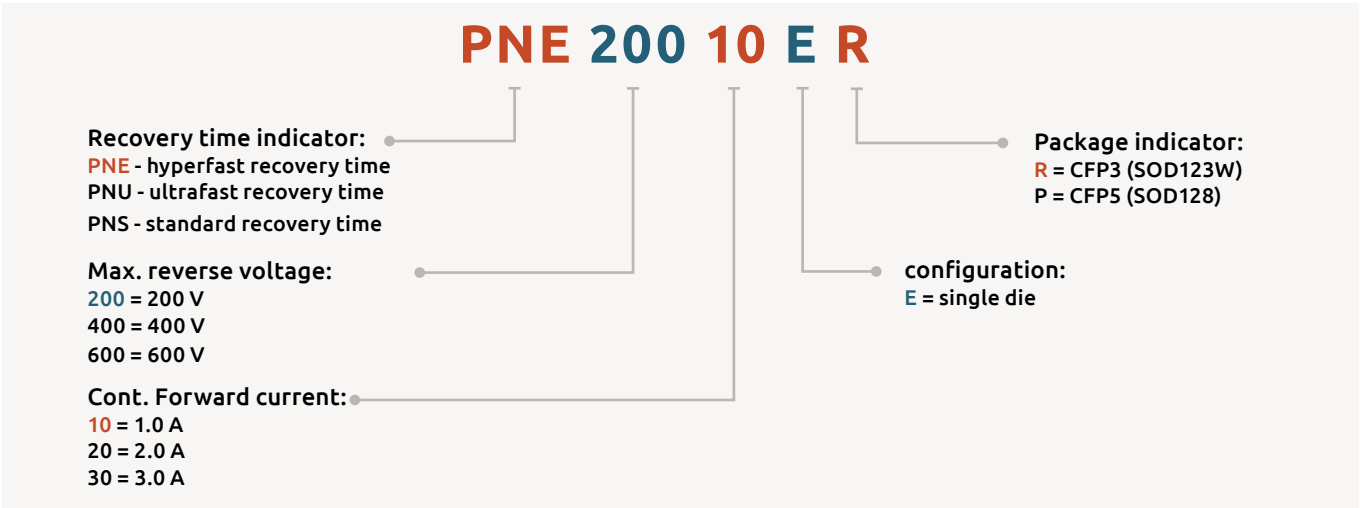
**Recovery time indicator:**  
**PNE** - hyperfast recovery time  
 PNU - ultrafast recovery time  
 PNS - standard recovery time

**Max. reverse voltage:**  
 200 = 200 V  
 400 = 400 V  
 600 = 600 V

**Cont. Forward current:**  
**10** = 1.0 A  
 20 = 2.0 A  
 30 = 3.0 A






**Package indicator:**  
**R** = CFP3 (SOD123W)  
**P** = CFP5 (SOD128)

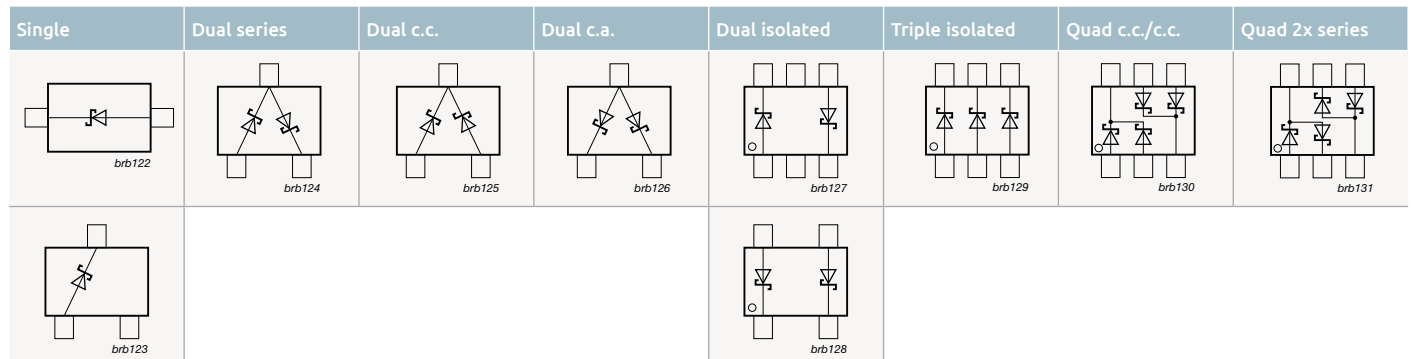
**configuration:**  
**E** = single die










# Schottky diodes and rectifiers







## General purpose Schottky diodes <= 250 mA

| IF max (mA) | VR max (V)     | VF max (mV)     | @ IF (mA) | IR max (µA) | @ VR (V) | Package         | SOD80C (MiniMelf)   | SOD68 (DO-34)  | SOT23   | SOT143B   | SOD123  |                 |
|-------------|----------------|-----------------|-----------|-------------|----------|-----------------|---|--|---|---|---|-----------------|
|             |                |                 |           |             |          |                 |  |  |  |  |  |                 |
|             |                |                 |           |             |          |                 | Size (mm)   | 3.5 x 1.5 x 1.5  | 3.04 x 1.6 x 0.55   | 2.9 x 1.3 x 1.0   | 2.9 x 1.3 x 1.0   | 2.7 x 1.6 x 1.2 |
|             |                |                 |           |             |          |                 | P <sub>tot</sub> (mW)   | 300  | 500   | 250   | 250   | 357             |
| 70          | 70             | 750             | 10        | 0.1         | 50       | Single          |   |  | BAS70   |   |   |                 |
|             |                |                 |           |             |          | Dual series     |   |  | BAS70-04  |   |   |                 |
|             |                |                 |           |             |          | Dual c.c.       |   |  | BAS70-05  |   |   |                 |
|             |                |                 |           |             |          | Dual c.a.       |   |  | BAS70-06  |   |   |                 |
|             |                |                 |           |             |          | Dual isolated   |   |  |   | BAS70-07  |   |                 |
|             |                |                 |           |             |          | Triple isolated |   |  |   |   |   |                 |
|             |                |                 |           |             |          | Quad 2x series  |   |  |   |   |   |                 |
| 120         | 40             | 370             | 1         | 0.5         | 30       | Single          |   |  |   |   |   |                 |
|             |                |                 |           |             |          | Dual series     |   |  | BAS40   |   |   |                 |
|             |                |                 |           |             |          | Dual c.c.       |   |  | BAS40-04  |   |   |                 |
|             |                |                 |           |             |          | Dual c.a.       |   |  | BAS40-05  |   |   |                 |
|             |                |                 |           |             |          | Dual c.a.       |   |  | BAS40-06  |   |   |                 |
|             |                |                 |           |             |          | Dual isolated   |   |  |   | BAS40-07  |   |                 |
|             |                |                 |           |             |          | Quad c.c./c.c.  |   |  |   |   |   |                 |
| 200         | 30             | 300             | 10        | 30          | 10       | Single          |   |  |   |   |   |                 |
|             |                |                 |           |             |          | Dual series     |   |  | BAT754  |   |   |                 |
|             |                |                 |           |             |          | Dual c.c.       |   |  | BAT754S   |   |   |                 |
|             |                |                 |           |             |          | Dual c.a.       |   |  | BAT754C   |   |   |                 |
|             |                | Dual c.a.       |           |             | BAT754A  |                 |   |  |   |   |   |                 |
|             |                | Dual isolated   |           |             |          |                 |   |  |   |   |   |                 |
|             |                | Triple isolated |           |             |          |                 |   |  |   |   |   |                 |
|             | Quad c.c./c.c. |                 |           |             |          |                 |   |  |   |   |   |                 |
|             | Quad 2x series |                 |           |             |          |                 |   |  |   |   |   |                 |
|             | 40             | 10              | 2         | 2           | 25       | Single          | BAS85   | BAT85  | BAT54   |   | BAT54GW   |                 |
|             |                |                 |           |             |          | Dual series     |   |  | BAT54S  |   |   |                 |
|             |                |                 |           |             |          | Dual c.c.       |   |  | BAT54C  |   |   |                 |
|             |                |                 |           |             |          | Dual c.a.       |   |  | BAT54A  |   |   |                 |
|             |                |                 |           |             |          | Dual isolated   |   |  |   | BAT74   |   |                 |
|             |                |                 |           |             |          | Triple isolated |   |  |   |   |   |                 |
|             | 30             | 10              | 15        | 0.5         | 25       | Single          |   |  | BAT721  |   |   |                 |
|             |                |                 |           |             |          | Dual series     |   |  | BAT721S   |   |   |                 |
| Dual c.c.   |                |                 |           |             |          |                 |   | BAT721C  |   |   |   |                 |
| Dual c.a.   |                |                 |           |             |          |                 |   | BAT721A  |   |   |   |                 |
| Dual c.c.   |                |                 |           |             |          |                 |   |  |   |   |   |                 |
| Dual c.a.   |                |                 |           |             |          |                 |   |  |   |   |   |                 |
| 50          | 200            | 200             | 1         | 10          | Single   |                 |   |  |   |   |   |                 |
|             |                |                 |           |             | Single   |                 |   |  |   |   |   |                 |
| 250         | 100            | 850             | 250       | 4           | 75       | Single          | BAS86   | BAT86  |   |   | BAT46GW   |                 |
|             |                |                 |           |             |          | Single          |   |  |   |   |   |                 |






| SOD123F   | SOT323 (SC-70)  | SOT363 (SC-88)  | SOD323F (SC-90)   | SOD323 (SC-76)   | SOD523 (SC-79)  | DFN1006-2 (SOD882)/ DFN1006-3 (SOT883)  |
|---|---|---|---|--|---|---|
|  |  |  |  |  |  |  |
| 2.6 x 1.6 x 1.1   | 2.0 x 1.25 x 0.95   | 2.0 x 1.25 x 0.95   | 1.7 x 1.25 x 0.7  | 1.7 x 1.25 x 0.95  | 1.2 x 0.8 x 0.6   | 1.0 x 0.6 x 0.48  |
| 375   | 250   | 300   | 385   | 400  | 275   | 250   |
| BAS70H  | BAS70W<br>BAS70-04W<br>BAS70-05W<br>BAS70-06W                                     | BAS70-07S<br>BAS70XY  |   | 1PS76SB70  | 1PS79SB70   | BAS70L  |
| BAS40H  | BAS40W<br>BAS40-04W<br>BAS40-05W<br>BAS40-06W                                     |   |   | RB751V40<br>1PS76SB40  | RB751S40<br>1PS79SB40   | RB751CS40<br>BAS40L   |
|   |   | 1PS88SB48<br>BAS40XY  |   |  | 1PS79SB31   |   |
| BAT54H  | BAT54W<br>BAT54SW<br>BAT54CW<br>BAT54AW   | BAT754L   | BAT54J  | 1PS76SB10  | 1PS79SB10   | BAT54L<br>BAT54CM   |
|   |   | BAT74S  |   |  |   |   |
|   |   | BAT54XY   |   |  | RB521S30<br>RB520S30  | RB521CS30L<br>RB520CS30L  |
|   |   |   |   | 1PS76SB21  |   |   |
|   |   |   |   |  | 1PS79SB30   |   |
|   | BAT854W<br>BAT854SW<br>BAT854CW<br>BAT854AW                                       |   |   |  |   |   |
| BAT46WH   |   |   | BAT46WJ   |  |   |   |

## Low capacitance Schottky diodes








| $I_F$ max (mA) | $V_R$ max (V) | $V_F$ max (mV) @ $I_F$ (mA) | $C_j$ max (pF) @ $V_R = 0$ V | Package         | SOT23   | SOT323 (SC-70)  | SOT363 (SC-88)  | SOD323 (SC-76)  | SOD523 (SC-79)  | DFN1006-2 (SOD882)  |           |
|----------------|---------------|-----------------------------|------------------------------|-----------------|---|---|---|---|---|---|-----------|
|                |               |                             |                              |                 |  |  |  |  |  |  |           |
|                |               |                             |                              | Size (mm)       | 2.9 x 1.3 x 1.0   | 2.0 x 1.25 x 0.95   | 2.0 x 1.25 x 0.95   | 1.7 x 1.25 x 0.95   | 1.2 x 0.8 x 0.6   | 1.0 x 0.6 x 0.48  |           |
|                |               |                             |                              | $P_{tot}$ (mW)  | 250   | 250   | 300   | 400   | 500   | 250   |           |
| 30             | 4             | 450                         | 1                            | Single          | BAT17   |   |   | 1PS76SB17   | 1PS79SB17   |   |           |
|                |               |                             |                              | Triple isolated |   |   |   |   |   |   |           |
|                |               |                             |                              | Dual series     | PMBD353<br>PMBD354 <sup>1)</sup>  |   |   |   |   |   |           |
|                | 15            | 340                         | 1                            | 1               | Single  |   | 1PS70SB82   |   |   |   | 1PS10SB82 |
|                |               |                             |                              |                 | Triple isolated   |   |   | 1PS88SB82   |   |   |           |
|                |               |                             |                              |                 | Dual series   |   | 1PS70SB84   |   |   |   |           |
|                |               |                             |                              |                 | Dual c.c.   |   | 1PS70SB85   |   |   |   |           |
|                |               |                             |                              | Dual c.a.       |   | 1PS70SB86   |   |   |   |   |           |

<sup>1)</sup>Diodes have matched capacitance

Medium power low VF Schottky rectifiers single  $\geq 200$  mA - leadless DSN / DFN packages




| $I_F$ max (A) | $V_R$ max (V) | $V_F$ max (mV)<br>@ $I_F$ max | $I_R$ max (mA)<br>@ $V_R$ max | Package     | DSN0603-2<br>(SOD962)   | DSN0603B-2 (SOD962B)  | DSN1006-2<br>(SOD993)   |  |  |
|---------------|---------------|-------------------------------|-------------------------------|-------------|---|---|---|--|--|
|               |               |                               |                               |             |  |  |  |  |  |
|               |               |                               |                               |             | 0.6 x 0.3 x 0.3   | 0.6 x 0.3 x 0.2   | 1.0 x 0.6 x 0.28  |  |  |
|               |               |                               |                               |             | 525   | 525   | 1.000   |  |  |
|               |               |                               |                               |             |   |   |   |  |  |
| 0.1           | 30            | 840                           | 0.0008                        | Low $I_R$   |   |   |   |  |  |
| 0.2           | 20            | 420                           | 0.045                         | Low $V_F$   | PMEG2002AESF  | PMEG2002AESFB   |   |  |  |
|               |               | 490                           | 0.0035                        | Low $I_R$   | PMEG2002ESF   |   |   |  |  |
|               | 30            | 470                           | 0.08                          | Low $V_F$   | PMEG3002AESF  |   |   |  |  |
|               |               | 480                           | 0.05                          | low $V_F$   |   |   |   |  |  |
|               |               | 520                           | 0.015                         | Low $I_R$   |   |   |   |  |  |
|               |               | 535                           | 0.009                         | Low $I_R$   | PMEG3002ESF   |   |   |  |  |
|               | 40            | 525                           | 0.08                          | Low $V_F$   | PMEG4002AESF  |   |   |  |  |
|               |               | 600                           | 0.0065                        | Low $I_R$   | PMEG4002ESF   |   |   |  |  |
|               |               | 600                           | 0.01                          | low $I_R$   |   |   |   |  |  |
|               |               | 600                           | 0.1                           | low $V_F$   |   |   |   |  |  |
|               | 0.5           | 20                            | 390                           | 0.2         | low $V_F$   |   |   |  |  |
|               |               |                               | 410                           | 0.3         | low $V_F$   |   |   |  |  |
| 440           |               |                               | 1.5                           | low $V_F$   |   |   |   |  |  |
| 500           |               |                               | 0.03                          | low $I_R$   |   |   |   |  |  |
| 550           |               |                               | 0.045                         | Low $V_F$   | PMEG2005AESF  |   |   |  |  |
| 620           |               |                               | 0.0035                        | Low $I_R$   | PMEG2005ESF   |   |   |  |  |
| 30            |               | 500                           | 0.5                           | low $V_F$   |   |   |   |  |  |
|               |               | 630                           | 0.08                          | Low $V_F$   | PMEG3005AESF  |   |   |  |  |
|               |               | 670                           | 0.015                         | Low $I_R$   |   |   |   |  |  |
|               |               | 720                           | 0.009                         | Low $I_R$   | PMEG3005ESF   |   |   |  |  |
| 40            |               | 590                           | 0.01                          | low $I_R$   |   |   |   |  |  |
|               |               | 820                           | 0.08                          | Low $V_F$   | PMEG4005AESF  |   |   |  |  |
|               | 880           | 0.0065                        | Low $I_R$                     | PMEG4005ESF |   |   |   |  |  |
|               |               |                               |                               |             |   |   |   |  |  |
| 1             | 20            | 375                           | 1.9                           | low $V_F$   |   |   |   |  |  |
|               |               | 415                           | 0.6                           | low $V_F$   |   |   |   |  |  |
|               |               | 490                           | 0.2                           | low $V_F$   |   |   |   |  |  |
|               | 30            | 480                           | 1.25                          | Low $V_F$   |   |   | PMEG3010AESB  |  |  |
|               |               | 565                           | 0.045                         | Low $I_R$   |   |   | PMEG3010ESB   |  |  |
|               | 40            | 505                           | 0.115                         | Low $V_F$   |   |   | PMEG4010AESB  |  |  |
|               |               | 600                           | 0.02                          | low $I_R$   |   |   |   |  |  |
|               |               | 610                           | 0.04                          | Low $I_R$   |   |   | PMEG4010ESB   |  |  |
|               | 60            | 625                           | 0.65                          | Low $V_F$   |   |   | PMEG6010AESB  |  |  |
|               |               | 730                           | 0.03                          | Low $I_R$   |   |   | PMEG6010ESB   |  |  |
|               | 1.5           | 20                            | 420                           | 0.9         | low $V_F$   |   |   |  |  |
|               |               | 40                            | 610                           | 0.03        | low $I_R$   |   |   |  |  |
| 2             | 20            | 420                           | 1.9                           | low $V_F$   |   |   |   |  |  |
|               |               | 450                           | 0.9                           | low $V_F$   |   |   |   |  |  |
|               | 30            | 470                           | 2.5                           | low $V_F$   |   |   |   |  |  |
|               | 40            | 535                           | 0.1                           | low $V_F$   |   |   |   |  |  |
|               |               | 530                           | 0.2                           | low $V_F$   |   |   |   |  |  |
|               | 60            | 575                           | 0.25                          | low $V_F$   |   |   |   |  |  |

Types in **bold** represent new products

| DSN1006U-2<br>(SOD995)  | DFN2020-3<br>(SOT1061)  | DFN2020D-3<br>(SOT1061D)  | DFN1608D-2<br>(SOD1608)   | DFN1006-2<br>(SOD882)  | DFN1006D-2<br>(SOD882D)   | DFN0603-2<br>(SOD972E)  |
|---|---|---|---|--|---|---|
|  |  |  |  |  |  |  |
| 1.0 x 0.6 x 0.28  | 2.0 x 2.0 x 0.62  | 2.0 x 2.0 x 0.62  | 1.6 x 0.8 x 0.37  | 1.0 x 0.6 x 0.48   | 1.0 x 0.6 x 0.37  | 0.63 x 0.33 x 0.25  |
| 1.190   | 960   | 960   | 780   | 565  | 660   | 570   |
|   |   |   |   |  |   | <b>PMEG3001EEF</b>  |
|   |   |   |   | PMEG3002AEL  | PMEG3002AELD  | <b>PMEG3002EEF</b>  |
|   |   |   |   | PMEG4002EL   | PMEG4002ELD   |   |
|   |   |   |   | PMEG6002EL   | PMEG6002ELD   |   |
|   |   |   | PMEG2005EPK   |  | PMEG2005BELD  |   |
|   |   |   |   | PMEG2005AEL  | PMEG2005AELD  |   |
|   |   |   |   | PMEG2005EL   | PMEG2005ELD   |   |
|   |   |   |   | PMEG3005EL   | PMEG3005ELD   |   |
|   |   |   |   |  |   | <b>PMEG3005EEF</b>  |
|   |   |   | PMEG4005EPK   |  |   |   |
|   | PMEG2010EPA   | PMEG2010EPAS  |   |  |   |   |
|   |   |   | PMEG2010EPK   |  | PMEG2010BELD  |   |
| PMEG3010AESA  |   |   |   |  |   |   |
|   |   |   | PMEG4010EPK   |  |   |   |
|   |   |   |   | PMEG2015EPK  |   |   |
|   |   |   |   | PMEG4015EPK  |   |   |
|   | PMEG2020EPA   | PMEG2020EPAS  |   |  |   |   |
|   |   |   | PMEG2020EPK   |  |   |   |
|   | PMEG3020EPA   | PMEG3020EPAS  |   |  |   |   |
|   | PMEG4020EPA   | PMEG4020EPAS  |   |  |   |   |
|   |   |   | PMEG4020EPK   |  |   |   |
|   | PMEG6020EPA   | PMEG6020EPAS  |   |  |   |   |




## Medium power low VF Schottky rectifiers single $\geq 200$ mA

Types in **bold** represent new products

| $I_F$ max (A) | $V_F^R$ max (V) | $V_F$ max (mV) @ $I_F$ max | $I_R$ max (mA) @ $V_R$ max | Package                            | CFP15 (SOT1289)   | CFP5 (SOD128)   | CFP3 (SOD123W)  |  |
|---------------|-----------------|----------------------------|----------------------------|------------------------------------|---|---|---|--|
|               |                 |                            |                            |                                    |  |  |  |  |
|               |                 |                            |                            | Size (mm)                          | 5.8 x 4.3 x 0.78  | 3.8 x 2.5 x 1.0   | 2.6 x 1.7 x 1.0   |  |
|               |                 |                            |                            | $P_{tot}$ (mW) @ 1 cm <sup>2</sup> | 2150  | 1050  | 950   |  |
|               |                 |                            |                            | Optimization                       |   |   |   |  |
| 1             | 20              | 340                        | 1                          | Low $V_F$                          |   |   | PMEG2010ER  |  |
|               |                 | 450                        | 0.05                       | Low $I_R$                          |   |   | PMEG2010BER   |  |
|               | 30              | 360                        | 1.5                        | Low $V_F$                          |   | PMEG3010EP  | PMEG3010ER  |  |
|               |                 | 450                        | 0.05                       | Low $I_R$                          |   | PMEG3010BEP   | PMEG3010BER   |  |
|               | 40              | 490                        | 0.05                       | Low $V_F$                          |   | PMEG4010EP  | PMEG4010ER  |  |
|               |                 |                            |                            | Low $V_F$                          |   | PMEG4010ETP   | PMEG4010ETR   |  |
|               | 60              | 460                        | 0.022                      | Low $V_F$ /Low $I_R$               |   |   | PMEG40T10ER <sup>1)</sup>   |  |
|               |                 |                            |                            | Low $V_F$                          |   | PMEG6010EP  | PMEG6010ER  |  |
|               |                 |                            |                            | Low $V_F$                          |   |   | PMEG6010ETR   |  |
|               |                 | 530                        | 0.06                       |                                    |   | <b>PMEG60T10ELP<sup>1)</sup></b>  |   |  |
| 590           |                 | 0.0008                     | Low $V_F$ /Low $I_R$       |                                    |   | <b>PMEG60T10ELR<sup>1)</sup></b>  |   |  |
| 100           | 600             | 0.00065                    | Low $V_F$ /Low $I_R$       |                                    |   | PMEG6010ELR   |   |  |
|               | 660             | 0.0003                     | Low $I_R$                  |                                    |   | PMEG6010ELR   |   |  |
| 2             | 30              | 770                        | 0.00015                    | Low $I_R$                          |   |   | PMEG10010ELR  |  |
|               |                 | 360                        | 3                          | Low $V_F$                          |   | PMEG3020EP  |   |  |
|               |                 | 420                        | 1.5                        | Low $V_F$                          |   | PMEG3020CEP   | PMEG3020ER  |  |
|               |                 | 450                        | 0.1                        | Low $I_R$                          |   | PMEG3020BEP   |   |  |
|               | 40              | 520                        | 0.05                       | Low $I_R$                          |   | PMEG3020DEP   | PMEG3020BER   |  |
|               |                 |                            |                            | Low $V_F$                          |   | PMEG4020EP  | PMEG4020ER  |  |
|               |                 |                            |                            | Low $V_F$                          |   | PMEG4020ETP   | PMEG4020ETR   |  |
|               | 60              | 515                        | 0.022                      | Low $V_F$ /Low $I_R$               |   | PMEG40T20EP <sup>1)</sup>   | PMEG40T20ER <sup>1)</sup>   |  |
|               |                 |                            |                            | Low $V_F$                          |   | PMEG6020EP  | PMEG6020ER  |  |
|               |                 | 530                        | 0.2                        | Low $V_F$                          |   | PMEG6020ETP   | PMEG6020ETR   |  |
|               |                 | 620                        | 0.0012                     | Low $V_F$ /Low $I_R$               |   | <b>PMEG60T20ELP<sup>1)</sup></b>  | PMEG60T20ELR <sup>1)</sup>  |  |
|               |                 | 680                        | 0.0007                     | Low $I_R$                          |   | PMEG6020AELP  | PMEG6020AELR  |  |
|               | 100             | 760                        | 0.0003                     | Low $I_R$                          |   |   | PMEG6020ELR   |  |
|               |                 | 770                        | 0.0003                     | Low $I_R$                          |   | PMEG10020AELP   | PMEG10020AELR   |  |
|               |                 | 830                        | 0.00015                    | Low $I_R$                          |   |   | PMEG10020ELR  |  |
| 3             | 30              | 360                        | 5                          | Low $V_F$                          |   | PMEG3030EP  |   |  |
|               |                 | 450                        | 0.15                       | Low $I_R$                          | PMEG030V030EPD  | PMEG3030BEP   |   |  |
|               | 40              | 490                        | 0.12                       | Low $V_F$                          | PMEG040V030EPD  |   |   |  |
|               |                 |                            |                            | Low $V_F$                          |   | PMEG4030EP  |   |  |
|               |                 |                            |                            | Low $V_F$                          |   | PMEG4030ETP   |   |  |
|               |                 | 525                        | 0.028                      | Low $V_F$ /Low $I_R$               |   | PMEG40T30EP <sup>1)</sup>   | PMEG40T30ER <sup>1)</sup>   |  |
|               | 45              | 540                        | 0.1                        | Low $I_R$                          |   |   | PMEG4030ER  |  |
|               |                 | 480                        | 0.044                      | Low $V_F$ /Low $I_R$               | PMEG045T030EPD <sup>1)</sup>  |   |   |  |
|               | 60              | 50                         | 530                        | 0.1                                | Low $V_F$   | PMEG050V030EPD  |   |  |
|               |                 |                            | 475                        | 0.4                                | Low $V_F$   |   | PMEG6030EVP   |  |
|               |                 |                            | 530                        | 0.2                                | Low $V_F$   | PMEG060V030EPD  | PMEG6030EP  |  |
|               |                 |                            |                            |                                    | Low $V_F$   |   | PMEG6030ETP   |  |
|               |                 | 620                        | 0.0018                     | Low $V_F$ /Low $I_R$               |   | <b>PMEG60T30ELP<sup>1)</sup></b>  | <b>PMEG60T30ELR<sup>1)</sup></b>  |  |
|               |                 | 690                        | 0.001                      | Low $I_R$                          |   | PMEG6030ELP   |   |  |
| 100           | 770             | 0.00045                    | Low $I_R$                  |                                    | PMEG10030ELP  |   |   |  |
| 4.5           | 60              | 530                        | 0.4                        | Low $V_F$                          |   | PMEG6045ETP   |   |  |
| 5             | 30              | 360                        | 8                          | Low $V_F$                          |   | PMEG3050EP  |   |  |
|               |                 | 450                        | 0.25                       | Low $I_R$                          |   | PMEG3050BEP   |   |  |
|               |                 | 500                        | 0.15                       | Low $V_F$                          | PMEG030V050EPD  |   |   |  |
|               | 40              | 490                        | 0.3                        | Low $V_F$                          |   | PMEG4050EP  |   |  |
|               |                 |                            | 0.3                        | Low $V_F$                          |   | PMEG4050ETP   |   |  |
|               |                 | 520                        | 0.12                       | Low $V_F$                          | PMEG040V050EPD  |   |   |  |
|               | 45              | 525                        | 0.041                      | Low $V_F$ /Low $I_R$               |   |   | PMEG40T50EP <sup>1)</sup>   |  |
|               |                 | 490                        | 0.3                        | Low $V_F$                          | PMEG045V050EPD  |   |   |  |
|               |                 | 525                        | 0.044                      | Low $V_F$ /Low $I_R$               | PMEG045T050EPD <sup>1)</sup>  |   |   |  |
|               |                 | 560                        | 0.4                        | Low $V_F$                          | PMEG060V050EPD  |   |   |  |
| 60            | 690             | 0.0018                     | Low $V_F$ /Low $I_R$       |                                    | <b>PMEG60T50ELP<sup>1)</sup></b>  |   |   |  |
| 6             | 100             | 840                        | 0.00045                    | Low $I_R$                          | PMEG100V060ELPD   |   |   |  |
| 8             | 100             | 850                        | 0.0005                     | Low $I_R$                          | PMEG100V080ELPD   |   |   |  |









<sup>1)</sup> Trench process

## Medium power low VF Schottky rectifiers single $\geq 200$ mA
















| $I_F$ max (A) | $V_R$ max (V) | $V_F$ max (mV) @ $I_F$ max | $I_R$ max (mA) @ $V_R$ max | Package                            | CFP15 (SOT1289)   | CFP5 (SOD128)   | CFP3 (SOD123W)  |
|---------------|---------------|----------------------------|----------------------------|------------------------------------|---|---|---|
|               |               |                            |                            |                                    |  |  |  |
|               |               |                            |                            | Size (mm)                          | 5.8 x 4.3 x 0.78  | 3.8 x 2.5 x 1.0   | 2.6 x 1.7 x 1.0   |
|               |               |                            |                            | $P_{tot}$ (mW) @ 1 cm <sup>2</sup> | 2150  | 1050  | 950   |
|               |               |                            |                            | Optimization                       |   |   |   |
| 10            | 45            | 490                        | 0.6                        | Low $V_F$                          | PMEG045V100EPD  |   |   |
|               |               | 540                        | 0.5                        | Low $V_F$                          | PMEG45A100EPD   |   |   |
|               |               | 545                        | 0.08                       | Low $V_F$ /Low $I_R$               | PMEG045T100EPD <sup>1)</sup>  |   |   |
|               | 60            | 0.7                        | Low $V_F$                  | PMEG060V100EPD                     |   |   |   |
|               | 100           | 850                        | 0.0008                     | Low $I_R$                          | PMEG100V100ELPD   |   |   |
| 15            | 45            | 490                        | 1                          | Low $V_F$                          | PMEG045V150EPD  |   |   |
|               |               | 550                        | 0.1                        | Low $V_F$ /Low $I_R$               | PMEG045T150EPD <sup>1)</sup>  |   |   |
|               |               | 580                        |                            | Low $V_F$ /Low $I_R$               | PMEG45T150EPD <sup>1)</sup>   |   |   |
|               |               | 570                        | 0.098                      | Low $V_F$ /Low $I_R$               | PMEG045T150EIPD <sup>1)</sup>   |   |   |
|               | 50            | 500                        | 1                          | Low $V_F$                          | PMEG050V150EPD  |   |   |
|               |               | 550                        | 0.1                        | Low $I_R$                          | PMEG050T150EPD <sup>1)</sup>  |   |   |

<sup>1)</sup> Trench process

## Medium power low VF Schottky rectifiers single $\geq 200$ mA - leaded packages

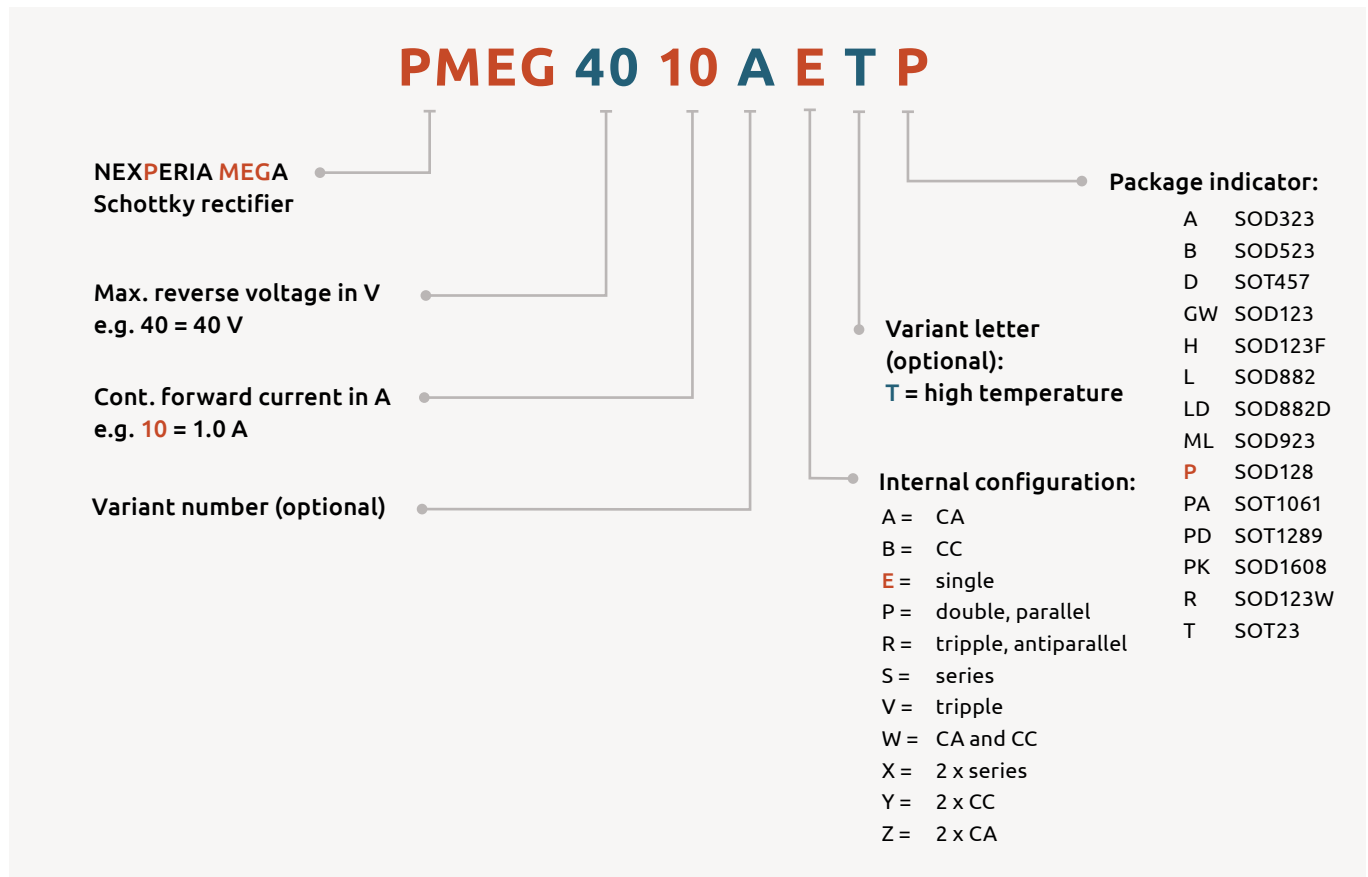
| $I_F$ max (A) | $V_R$ max (V) | $V_F$ max (mV) @ $I_F$ max | $I_R$ max (mA) @ $V_R$ max | Package                            | SOT457 (SC-74)  | SOT23   | SOD123  | SOD123F   | SOT323 (SC-70)   | SOD323F (SC-90)   | SOD323 (SC-76)  | SOD523 (SC-79)  |
|---------------|---------------|----------------------------|----------------------------|------------------------------------|---|---|---|---|--|---|---|---|
|               |               |                            |                            |                                    |  |  |  |  |  |  |  |  |
|               |               |                            |                            | Size (mm)                          | 2.9 x 1.5 x 1.0   | 2.9 x 1.3 x 1.0   | 2.7 x 1.6 x 1.2   | 2.6 x 1.6 x 1.1   | 2.0 x 1.25 x 0.95  | 1.7 x 1.25 x 0.7  | 1.7 x 1.25 x 0.95   | 1.2 x 0.8 x 0.6   |
|               |               |                            |                            | $P_{tot}$ (mW) @ 1 cm <sup>2</sup> | 540   | 420   | 660   | 830   | 400  | 830   | 570   | 500   |
|               |               |                            |                            | Optimization                       |   |   |   |   |  |   |   |   |
| 0.2           | 30            | 480                        | 0.05                       | Low $V_F$                          |   |   |   |   |  | PMEG3002EJ  |   | PMEG3002AEB   |
|               | 40            | 600                        | 0.01                       | Low $I_r$                          |   |   |   |   |  | PMEG4002EJ  |   | PMEG4002EB  |
|               | 60            | 600                        | 0.1                        | Low $V_F$                          |   |   |   |   |  | PMEG6002EJ  |   | PMEG6002EB  |
| 0.5           | 20            | 390                        | 0.2                        | Low $V_F$                          |   | PMEG2005ET  | PMEG2005EGW   | PMEG2005EH  |  | PMEG2005EJ  | PMEG2005AEA   |   |
|               |               | 480                        | 0.03                       | Low $I_r$                          |   |   |   |   |  |   |   | PMEG2005EB  |
|               | 30            | 430                        | 0.15                       | Low $V_F$                          |   | PMEG3005ET  | PMEG3005EGW   | PMEG3005EH  |  | PMEG3005EJ  | PMEG3005AEA   |   |
|               |               | 500                        | 0.5                        | Low $V_F$                          |   |   |   |   |  |   |   | PMEG3005EB  |
|               | 40            | 470                        | 0.1                        | Low $V_F$                          |   | PMEG4005ET  | PMEG4005EGW   | PMEG4005EH  |  | PMEG4005EJ  | PMEG4005AEA   |   |
|               |               | 550                        | 1.1                        | Low $V_F$                          |   | BAT720  |   |   | 1PS70SB20  |   |   |   |
| 640           | 0.008         | Low $I_r$                  |                            |                                    |   |   |   |   | PMEG4005EJ   | PMEG4005AEA   |   |   |
| 0.75          | 40            | 740                        | 0.008                      | Low $I_r$                          |   |   |   |   |  |   | BAT165A   |   |
| 1             | 20            | 430                        | 0.2                        | Low $V_F$                          |   | PMEG2010AET   |   | PMEG2010AEH   |  |   |   |   |
|               |               | 500                        | 0.2                        | Low $V_F$                          |   | PMEG2010ET  |   | PMEG2010EH  |  | PMEG2010EJ  | PMEG2010BEA   |   |
|               |               | 550                        | 0.07                       | Low $I_r$                          |   |   |   |   |  | PMEG2010AEJ   | PMEG2010EA BAT760   |   |
|               |               | 620                        | 1.5                        | Low $V_F$                          |   |   |   |   |  |   |   | PMEG2010AEB   |
|               | 30            | 450                        | 1                          | Low $V_F$                          | 1PS74SB23   |   |   |   |  |   |   |   |
|               |               | 520                        | 0.1                        | Low $I_r$                          |   |   |   | PMEG3010CEH   |  | PMEG3010CEJ   |   |   |
|               |               | 560                        | 0.15                       | Low $V_F$                          |   | PMEG3010ET  | PMEG3010EGW   | PMEG3010EH  |  | PMEG3010EJ  | PMEG3010BEA   |   |
|               |               | 680                        | 0.5                        | Low $V_F$                          |   |   |   |   |  |   |   | PMEG3010EB  |
|               | 40            | 570                        | 0.05                       | Low $I_r$                          |   |   | PMEG4010CEGW  | PMEG4010CEH   |  | PMEG4010CEJ   |   |   |
|               |               | 640                        | 0.05                       | Low $V_F$                          |   | PMEG4010ET  | PMEG4010EGW   | PMEG4010EH  |  | PMEG4010EJ  | PMEG4010BEA   |   |
|               |               | 840                        | 0.008                      | Low $I_r$                          |   |   |   |   |  |   | PMEG4010CEA   |   |
|               |               | 660                        | 0.05                       | Low $I_r$                          |   |   | PMEG6010CEGW  | PMEG6010CEH   |  | PMEG6010CEJ   |   |   |
| 1.5           | 20            | 660                        | 0.2                        | Low $I_r$                          |   |   | PMEG2015EH  |   | PMEG2015EJ   | PMEG2015SEA   |   |   |
|               | 30            | 500                        | 1                          | Low $V_F$                          |   |   | PMEG3015EH  |   | PMEG3015EJ   |   |   |   |
| 2             | 10            | 460                        | 3                          | Low $V_F$                          |   |   | PMEG1020EH  |   | PMEG1020EJ   | PMEG1020EA  |   |   |
|               | 20            | 525                        | 0.2                        | Low $V_F$                          |   |   | PMEG2020EH  |   | PMEG2020EJ   | PMEG2020AEA   |   |   |
|               | 30            | 620                        | 1                          | Low $V_F$                          |   | PMEG3020EGW   | PMEG3020EH  |   | PMEG3020EJ   |   |   |   |
| 3             | 10            | 530                        | 3                          | Low $V_F$                          |   |   | PMEG1030EH  |   | PMEG1030EJ   |   |   |   |

## Medium power low VF Schottky rectifiers dual $\geq 200$ mA

| $I_F$ max (A) | $V_R$ max (V) | $V_F$ max (mV) @ $I_F$ max | $I_R$ max (mA) @ $V_R$ max | Optimization | Package   | SOT223 (SC-73)  | SOT23   | DFN2020-3 (SOT1061)   | DFN2020D-3 (SOT1061D)   |                  |
|---------------|---------------|----------------------------|----------------------------|--------------|---|---|---|---|---|------------------|
|               |               |                            |                            |              |   |    |  |  |  |                  |
|               |               |                            |                            |              |   | Size (mm)   | 6.5 x 3.5 x 1.65  | 2.9 x 1.3 x 1.0   | 2.0 x 2.0 x 0.62  | 2.0 x 2.0 x 0.63 |
|               |               |                            |                            |              |   | $P_{tot}$ (mW) @ 1 cm <sup>2</sup>  | 1500  | 400   | 1000  | 1000             |
| 0.5           | 20            | 390                        | 0.2                        | Low $V_F$    |    |   | PMEG2005CT  |   |   |                  |
|               | 30            | 430                        | 0.15                       | Low $V_F$    |   | PMEG3005CT  |   |   |   |                  |
|               | 40            | 470                        | 0.1                        | Low $V_F$    |   | PMEG4005CT  |   |   |   |                  |
| 1.0           | 25            | 450                        | 1.0                        | Low $V_F$    |    | BAT120S   |   |   |   |                  |
|               |               |                            |                            | Low $V_F$    |    | BAT120C   |   |   |   |                  |
|               |               |                            |                            | Low $V_F$    |    | BAT120A   |   |   |   |                  |
|               | 40            | 500                        | 0.05                       | Low $V_F$    |   |   |   | PMEG4010CPA   | PMEG4010CPAS  |                  |
|               |               |                            |                            | Low $V_F$    |  |   |   | PMEG6010CPA   | PMEG6010CPAS  |                  |
|               | 60            | 650                        | 0.35                       | Low $V_F$    |  | BAT160S   |   |   |   |                  |
|               |               |                            |                            | Low $V_F$    |  | BAT160C   |   |   |   |                  |
|               |               |                            |                            | Low $V_F$    |  | BAT160A   |   |   |   |                  |
|               | 2.0           | 20                         | 420                        | 1.0          | Low $V_F$   |  |   |   | PMEG2020CPA   | PMEG2020CPAS     |
| 30            |               | 440                        | 2.0                        | Low $V_F$    |  |   |   | PMEG3020CPA   | PMEG3020CPAS  |                  |

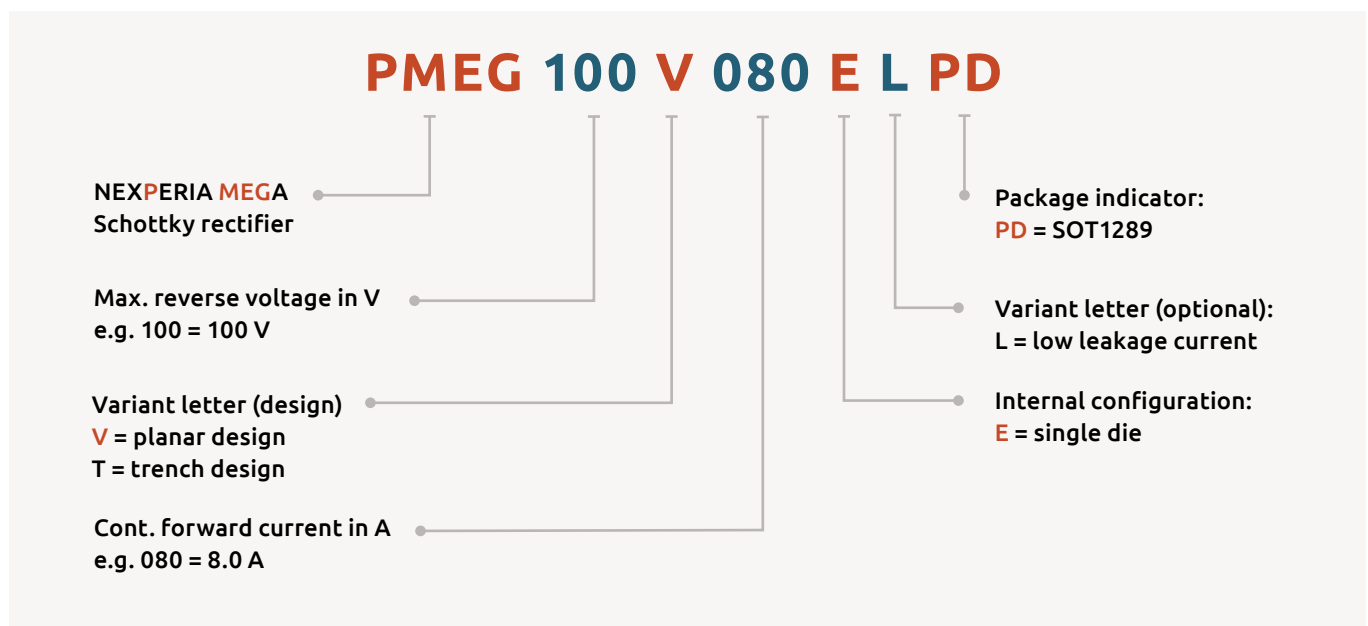


Nomenclature of automotive grade Schottky rectifier in medium-power packages



Diodes

Nomenclature of automotive grade Schottky rectifier in CFP15 (SOT1289) power package

















# ESD protection, TVS, filtering and signal conditioning

|   |           |
|---|-----------|
| <b>Low capacitance ESD protection for high-speed interfaces.....</b>                  | <b>52</b> |
| USB 3.x and eSATA protection and filtering for high-speed and super-speed lines ..... | 54        |
| Low capacitance ESD protection for high-speed interfaces - HDMI2.0, DisplayPort.....  | 55        |
| TrEOS protection devices .....  | 56        |
| TrEOS2 protection devices .....   | 56        |
| <b>General ESD protection devices.....</b>  | <b>57</b> |
| <b>Application-specific ESD solutions .....</b>                                       | <b>61</b> |
| Audio interface protection .....  | 61        |
| Automotive high-speed network protection .....  | 62        |
| Automotive in-vehicle network bus line protection .....                               | 62        |
| Battery and charger port protection .....   | 63        |
| HDMI and display port protection.....   | 63        |
| <b>EMI solutions with integrated protection .....</b>                                 | <b>64</b> |
| Antenna protection (NFC, WiFi,...).....   | 64        |
| USB and SATA protection.....  | 64        |
| Common mode filter for USB 2.0.....   | 64        |
| Common mode filter for USB 3.x.....   | 65        |
| Common mode filter for HDMI and MIPI.....   | 65        |
| HDMI signal conditioning.....   | 66        |
| LCD and camera RC filter with integrated protection.....                              | 66        |
| Memory and SIM card filter with integrated protection .....                           | 66        |
| <b>Transient voltage surge suppressor (TVS).....</b>                                  | <b>67</b> |
| TVS diodes for mobile applications .....  | 67        |
| TVS diodes, 24 W/40 W (automotive).....   | 67        |
| TVS diodes, 400 W .....   | 68        |
| TVS diodes, 600 W .....   | 69        |
| <b>Nomenclatures .....</b>  | <b>70</b> |

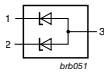
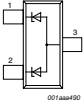



## Low capacitance ESD protection for high-speed interfaces

Products in **bold red** are under development, types in **bold** represent new products

| Number of protected lines |               | $V_{RWM}$ (V) | $C_{line}$ typ (pF) | $C_{line}$ max (pF) | ESD rating max (kV) [1] | Configuration   | Type  | Package   | Size (mm)           |   |                  |   |                  |
|---------------------------|---------------|---------------|---------------------|---------------------|-------------------------|---|---|---|---------------------|---|------------------|---|------------------|
| Unidirectional            | Bidirectional |               |                     |                     |                         |   |   |   |                     |   |                  |   |                  |
| 1                         | 0             | 5             | 0.45                | 0.5                 | 20                      |  | PESD5V0C1USF  | DSN0603-2 (SOD962)<br>   | 0.6 x 0.3 x 0.3     |   |                  |   |                  |
|                           |               | 6.5           | 0.45                | 0.5                 | 20                      |   | <b>PESD6V5C1USF</b>   |   |                     |   |                  |   |                  |
|                           |               | 5             | 0.6                 | 0.75                | 10                      |   | PESD5V0F1USF  |   |                     |   |                  |   |                  |
|                           |               | 5             | 0.95                | 1.15                | 8                       |   | PESD5V0X1ULD  | DFN1006D-2 (SOD882D)<br> | 1.0 x 0.6 x 0.37    |   |                  |   |                  |
|                           |               |               | 1.55                | 1.75                | 15                      |   | PESD5V0X1UALD   |   |                     |   |                  |   |                  |
|                           |               | 16            | 0.83                | 0.98                | 8                       |   | PESD16VX1UL   | DFN1006-2 (SOD882)<br>   | 1.0 x 0.6 x 0.48    |   |                  |   |                  |
|                           |               | 5             | 0.95                | 1.15                | 8                       |   | PESD5V0X1UB   | SOD523 (SC-79)<br>       | 1.2 x 0.8 x 0.6     |   |                  |   |                  |
|                           |               |               | 1.55                | 1.75                | 15                      |   | PESD5V0X1UAB  |   |                     |   |                  |   |                  |
|                           |               | 3.3           | 0.6                 | 1.5                 | 30                      | PESD3V3U1UT   | SOT23<br>                | 2.9 x 1.3 x 1.0   |                     |   |                  |   |                  |
|                           |               | 5             | 0.6                 | 1.5                 | 30                      | PESD5V0U1UT   |   |   |                     |   |                  |   |                  |
|                           |               | 12            | 0.6                 | 1.5                 | 30                      | PESD12VU1UT   |   |   |                     |   |                  |   |                  |
|                           |               | 15            | 0.6                 | 1.5                 | 30                      | PESD15VU1UT   |   |   |                     |   |                  |   |                  |
|                           |               | 24            | 0.6                 | 1.5                 | 23                      | PESD24VU1UT   |   |   |                     |   |                  |   |                  |
|                           |               |               |                     |                     |                         |   |   |   |                     |   |                  |   |                  |
|                           |               | 0             | 1                   | 5                   | 0.2                     | 0.3   | 8   |                          | PESD5V0F1BSH        | DSN0402-2 (SOD992)<br> | 0.4 x 0.2 x 0.12 |   |                  |
|                           |               |               |                     | 2.0                 | 0.69                    | 0.82  | 20  |   | <b>PESD2V0Y1BSF</b> | DSN0603-2 (SOD962)<br> | 0.6 x 0.3 x 0.3  |   |                  |
| 2.5                       | 0.25          |               |                     | 0.30                | 15                      | <b>PESD2V5Y1BSF</b>   |   |   |                     |   |                  |   |                  |
| 3.3                       | 0.24          |               |                     | 0.29                | 15                      | <b>PESD3V3Y1BSF</b>   |   |   |                     |   |                  |   |                  |
|                           | 0.2           |               |                     | 0.25                | 20                      | PESD3V3C1BSF  |   |   |                     |   |                  |   |                  |
|                           | 0.28          |               |                     | 0.35                | 20                      | PESD3V3Z1BSF  |   |   |                     |   |                  |   |                  |
|                           | 0.45          |               |                     | 0.6                 | 30                      | <b>PESD3V3Z1BCSF</b>  |   |   |                     |   |                  |   |                  |
|                           | 0.55          |               |                     | 0.65                | 30                      | <b>PESD3V3W1BCSF</b>  |   |   |                     |   |                  |   |                  |
| 4.0                       | 0.24          |               |                     | 0.29                | 15                      | <b>PESD4V0Y1BSF</b>   |   |   |                     |   |                  |   |                  |
|                           | 0.28          |               |                     | 0.35                | 20                      | <b>PESD4V0Z1BSF</b>   |   |   |                     |   |                  |   |                  |
|                           | 0.45          |               |                     | 0.6                 | 30                      | <b>PESD4V0Z1BCSF</b>  |   |   |                     |   |                  |   |                  |
|                           | 0.55          |               |                     | 0.65                | 30                      | <b>PESD4V0W1BCSF</b>  |   |   |                     |   |                  |   |                  |
|                           | 0.1           |               |                     | 0.15                | 10                      | <b>PESD5V0R1BSF</b>   |   |   |                     |   |                  |   |                  |
| 5                         | 0.15          |               |                     | 0.19                | 15                      | PESD5V0H1BSF  |   |   |                     |   |                  |   |                  |
|                           | 0.2           |               |                     | 0.25                | 20                      | PESD5V0C1BSF  |   |   |                     |   |                  |   |                  |
|                           | 0.1           |               |                     | 0.15                | 10                      | PESD7V0R1BSF  |   |   |                     |   |                  |   |                  |
| 7                         | 0.15          |               |                     | 0.19                | 15                      | <b>PESD7V0H1BSF</b>   |   |   |                     |   |                  |   |                  |
|                           | 0.2           |               |                     | 0.25                | 20                      | <b>PESD7V0C1BSF</b>   |   |   |                     |   |                  |   |                  |
|                           | 0.2           |               |                     | 0.25                | 20                      | <b>PESD9V0C1BSF</b>   |   |   |                     |   |                  |   |                  |
| 5.5                       | 0.25          |               |                     | 0.3                 | 10                      | PESD5V0F1BSF  | DSN0603-2 (SOD962)<br> |   | 0.6 x 0.3 x 0.3     |   |                  |   |                  |
| 3.3                       | -             |               |                     | 1.1                 | 20                      | PESD5V0F1BRSF   |   |   |                     |   |                  |   |                  |
| 5.0                       | -             |               |                     | 1.1                 |                         |   |   |   |                     |   |                  |   |                  |
| 18                        | 0.28          |               |                     | 0.45                | 10                      | PESD18VF1BSF  |   |   |                     |   |                  |   |                  |
| 24                        | 0.25          |               |                     | 0.4                 | 10                      | PESD24VF1BSF  |   |   |                     |   |                  |   |                  |
| 5                         | 0.4           |               |                     | 0.55                | 10                      | PESD5V0F1BLD  |   |   |                     |   |                  | DFN1006D-2 (SOD882D)<br> | 1.0 x 0.6 x 0.37 |
| 3.3                       | 1.3           |               |                     | 1.6                 | 9                       | PESD3V3X1BCL  |   |   |                     |   |                  |   |                  |
| 5.5                       | 0.4           |               |                     | 0.55                | 10                      | PESD5V0F1BL   |   |   |                     |   |                  | DFN1006-2 (SOD882)<br>   | 1.0 x 0.6 x 0.48 |
| 5                         | 0.49          |               |                     | 0.6                 | 8                       | PESD5V0X1BCL  |   |   |                     |   |                  |   |                  |
|                           | 0.85          |               |                     | 0.95                | 15                      | PESD5V0X1BCAL   |   |   |                     |   |                  |   |                  |
|                           | 0.9           |               |                     | 1.3                 | 9                       | PESD5V0X1BL   |   |   |                     |   |                  |   |                  |
| 18                        | 0.35          |               |                     | 0.5                 | 10                      | PESD18VF1BL   |   |   |                     |   |                  |   |                  |
| 24                        | 0.3           |               |                     | 0.45                | 10                      | PESD24VF1BL   |   |   |                     |   |                  |   |                  |

[1] according to IEC 61000-4-2 (contact discharge)

## Low capacitance ESD protection for high-speed interfaces

| Number of protected lines |               | $V_{RWM}$ (V) | $C_{line}$ typ (pF) | $C_{line}$ max (pF)  | ESD rating max (kV) <sup>[1]</sup> | Configuration  | Type  | Package              | Size (mm)         |                 |
|---------------------------|---------------|---------------|---------------------|----------------------|------------------------------------|--|---|----------------------|-------------------|-----------------|
| Unidirectional            | Bidirectional |               |                     |                      |                                    |  |   |                      |                   |                 |
| 2                         | 1             | 5             | 0.5                 | 0.65                 | 10                                 | <br>btb051      | PESD5V0X2UMB  | DFN1006B-3 (SOT883B) | 1.0 x 0.6 x 0.37  |                 |
|                           |               |               |                     |                      |                                    |  | PESD5V0X2UM   | DFN1006-3 (SOT883)   | 1.0 x 0.6 x 0.48  |                 |
|                           |               |               | PESD5V0X2UAMB       | DFN1006B-3 (SOT883B) | 1.0 x 0.6 x 0.37                   |  |   |                      |                   |                 |
|                           |               |               | PESD5V0X2UAM        | DFN1006-3 (SOT883)   | 1.0 x 0.6 x 0.48                   |  |   |                      |                   |                 |
|                           |               |               |                     | 0.9                  | 1.3                                | 9  | <br>007aaa490 | PESD5V0X1BT          | SOT23             | 2.9 x 1.3 x 1.0 |
|                           | 0             | 80            | 0.6                 | 0.75                 | 30                                 | <br>006aaa783 | NUP1301U  | SOT323               | 2.0 x 1.25 x 0.95 |                 |
| NUP1301                   |               |               |                     |                      |                                    |  | SOT23   | 2.9 x 1.3 x 1.0      |                   |                 |
| NUP1301QA                 |               |               |                     |                      |                                    |  | SOT1215   | 1.0 x 1.0 x 0.4      |                   |                 |
| 3                         | 0             | 5.5           | 1                   | 1.5                  | 8                                  | <br>24a551    | PRTR5V0U2X  | SOT143B              | 2.9 x 1.3 x 1.0   |                 |
|                           |               |               | 1.8                 | -                    | 12                                 |  | PRTR5V0U2AX   |                      |                   |                 |
|                           |               |               | 1                   | 1.5                  | 8                                  | <br>24a552    | PRTR5V0U2F  | DFN1410-6 (SOT886)   | 1.45 x 1.0 x 0.48 |                 |

ESD protection, TVS, filtering and signal conditioning

<sup>[1]</sup> according to IEC 61000-4-2 (contact discharge)

## Low capacitance ESD protection for high-speed interfaces

Types in **bold** represent new products

| Number of protected lines |               | $V_{RWM}$ (V) | $C_{line\ typ}$ (pF) | $C_{line\ max}$ (pF) | ESD rating max (kV) <sup>[1]</sup> | Configuration    | Type                | Package            | Size (mm)         |
|---------------------------|---------------|---------------|----------------------|----------------------|------------------------------------|------------------|---------------------|--------------------|-------------------|
| Unidirectional            | Bidirectional |               |                      |                      |                                    |                  |                     |                    |                   |
| 4                         | 0             | 3.3           | 0.75                 | 0.9                  | 25                                 |                  | <b>PESD3V3X4UHM</b> | DFN1308-6<br>      | 1.3 x 0.8 x 0.4   |
|                           |               |               |                      |                      |                                    |                  | IP4220CZ6           | SOT457 (SC-74)<br> | 2.9 x 1.5 x 1.0   |
|                           |               | PRTR5V0U4D    |                      |                      |                                    |                  |                     |                    |                   |
|                           |               | 5.5           | 0.7                  | 0.85                 | 12                                 |                  | PUSB2X4D            | SOT363 (SC-88)<br> | 2.9 x 1.5 x 1.0   |
|                           |               |               |                      |                      |                                    |                  | PUSB2X4Y            |                    | 2.0 x 1.25 x 0.95 |
| 0.6                       | 0.8           | 8             |                      | IP4283CZ10-TBR       | DFN2510A-10 (SOT1176)<br>          | 2.5 x 1.0 x 0.48 |                     |                    |                   |

<sup>[1]</sup> according to IEC 61000-4-2 (contact discharge)



## USB 3.x and eSATA protection and filtering for high-speed and super-speed lines

Products in **bold red** are under development, types in **bold** represent new products

| Baseband interface | Number of protected lines | $C_d$ (pF) | ESD rating max (kV) | $R_{dyn}$ ( $\Omega$ ) | Remark                                   | Type             | Package | Size (mm)        |                  |          |                         |                  |
|--------------------|---------------------------|------------|---------------------|------------------------|--|------------------|---------|------------------|------------------|----------|-------------------------|------------------|
| USB3.0 - 5 Gbps    | 4                         | 0.55       | 8                   | 0.3 / 0.4              | ESD Protection for high-speed interfaces | IP4292CZ10-TBR   |         | 2.5 x 1.0 x 0.48 |                  |          |                         |                  |
|                    |                           | 0.5        | 10                  |                        |  | IP4294CZ10-TBR   |         |                  |                  |          |                         |                  |
| 0.5                |                           | 10         | PUSB3F96            |                        |  |                  |         |                  |                  |          |                         |                  |
| 0.5                |                           | 10         | PUSB3F97            |                        |  |                  |         |                  |                  |          |                         |                  |
| 0.5                |                           | 10         | PUSB3F99            |                        |  |                  |         |                  |                  |          |                         |                  |
| 0.5                |                           | 10         | PUSB3FA0            |                        |  |                  |         |                  |                  |          |                         |                  |
| USB3.1 - 10 Gbps   |                           | 0.29       | 15                  | 0.27                   | 0.27                                     | TrEOS Protection |         |                  | PUSB3FR4         |          |                         |                  |
|                    |                           |            | 15                  | 0.27                   |  |                  |         |                  | <b>PUSB3FA1</b>  |          |                         |                  |
|                    |                           |            | 15                  | 0.4                    |  |                  |         |                  | PUSB3AB4         |          |                         |                  |
|                    |                           |            | 15                  | 0.4                    |  |                  |         |                  | PUSB3FA2         |          |                         |                  |
|                    | 6                         |            | 0.29                | 15                     |  |                  | 0.27    | 0.27             | TrEOS Protection | PUSB3FR6 | DFN2111-7 (SOT1358)<br> | 2.1 x 1.1 x 0.48 |
|                    |                           |            |                     | 0.27                   |  |                  | 15      |                  |                  | 0.5      |                         |                  |
| 0.15               |                           | 15         |                     | 0.4                    | PUSB3AB6                                 |                  |         |                  |                  |          |                         |                  |


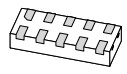


## USB 3.x and eSATA protection and filtering for high-speed and super-speed lines

Products in **bold red** are under development, types in **bold** represent new products

| Baseband interface | Number of protected lines | C <sub>T</sub> (pF) | ESD rating max (kV) | R <sub>dyn</sub> (Ω)   | Remark   | Type                 | Package   | Size (mm)       |
|--------------------|---------------------------|---------------------|---------------------|--|--|----------------------|---|-----------------|
| USB3.1 - 10 Gbps   | 1                         | 0.1                 | 10                  | 0.45   | TrEOS Protection   | <b>PESD5V0R1BSF</b>  | DSN0603-2 (SOD962)<br> | 0.6 x 0.3 x 0.3 |
|                    |                           | 0.15                | 15                  | 0.25   |  | PESD5V0H1BSF         |   |                 |
|                    |                           | 0.2                 | 20                  | 0.23   |  | PESD5V0C1BSF         |   |                 |
|                    |                           | 0.2                 | 20                  | 0.23   |  | PESD3V3C1BSF         |   |                 |
|                    |                           | 0.24                | 15                  | 0.28   |  | <b>PESD2V5Y1BSF</b>  |   |                 |
|                    |                           | 0.25                | 15                  | 0.25   |  | <b>PESD3V3Y1BSF</b>  |   |                 |
|                    |                           | 0.28                | 20                  | 0.19   |  | PESD3V3Z1BSF         |   |                 |
|                    |                           | 0.45                | 30                  | 0.11   |  | <b>PESD3V3Z1BCSF</b> |   |                 |
|                    |                           | 0.55                | 30                  | 0.1  |  | <b>PESD3V3W1BCSF</b> |   |                 |
|                    |                           | 0.45                | 20                  | 0.1  |  | PESD5V0C1USF         |   |                 |
|                    |                           | 0.1                 | 10                  | 0.45   |  | PESD7V0R1BSF         |   |                 |
|                    |                           | 0.15                | 15                  | 0.25   |  | PESD7V0H1BSF         |   |                 |
|                    |                           | 0.2                 | 20                  | 0.23   |  | PESD7V0C1BSF         |   |                 |
|                    |                           | 0.2                 | 20                  | 0.23   |  | <b>PESD9V0C1BSF</b>  |   |                 |
|                    |                           | 0.45                | 20                  | 0.1  |  | PESD6V5C1USF         |   |                 |
|                    | 2                         | 0.25                | 15                  | 0.14   | Common Mode Filter with TrEOS Protection for ultra high-speed interfaces | PCMF1USB3S           | WLCSP5<br>           | 1.2 x 0.8 x 0.6 |
|                    |                           | 20                  | 0.22                | Common Mode Filter with TrEOS Protection for ultra high-speed interfaces | PCMF1USB3B/C   |                      |   |                 |

ESD protection, TVS, filtering and signal conditioning

## Low capacitance ESD protection for high-speed interfaces - HDMI2.0, DisplayPort

| Number of protected lines |               | V <sub>RWMX</sub> (V) | C <sub>line typ</sub> (pF) | C <sub>line max</sub> (pF) | ESD rating <sup>(1)</sup> max (kV) | I <sub>r</sub> max (μA) @ V <sub>RWMX</sub> | Configuration   | Type           | Package  | Size (mm)        |
|---------------------------|---------------|-----------------------|----------------------------|----------------------------|------------------------------------|---|---|----------------|--|------------------|
| Unidirectional            | Bidirectional |                       |                            |                            |                                    |   |   |                |  |                  |
| 4                         | 0             | 5.5                   | 0.27                       | 0.34                       | 10                                 | -   |  | IP4294CZ10-TBR | DFN2510A-10 (SOT1176)<br> | 2.5 x 1.0 x 0.48 |
|                           |               | PUSB3F96              |                            |                            |                                    |   |   |                |  |                  |
|                           |               | PHDMI2F4              |                            |                            |                                    |   |   |                |  |                  |
| 0                         | 4             | 3.3                   | 0.17                       | 0.2                        | 15                                 | 0.1   |  | PUSB3FR4       |  |                  |
|                           |               | PHDMI2FR4             |                            |                            |                                    |   |   |                |  |                  |
|                           |               | PUSB3AB4              |                            |                            |                                    |   |   |                |  |                  |
|                           |               | 5                     |                            |                            |                                    |   |  | PHDMI2AB4      |  |                  |

<sup>(1)</sup> according to IEC 61000-4-2 (contact discharge)

## TrEOS protection devices

Unique combination of low capacitance, low clamping and high robustness for very fast, sensitive data lines

Products in **bold red** are under development, types in **bold** represent new products

| Type                 | device                                 | $V_{RWM}$ (V) | Uni- or bidirectional | $C_d$ typ (pF) | ESD rating max (kV) ( $\Omega$ ) | $R_{dyn}$ TLP ( $\Omega$ ) | 8/20 $\mu$ s (A) | Number of protected lines | Package     | Size (mm)        |     |
|----------------------|--|---------------|-----------------------|----------------|----------------------------------|----------------------------|------------------|---------------------------|-------------|------------------|-----|
| PUSB3FR4             | ESD protection                         | 3.3           | uni                   | 0.29           | 15                               | 0.27                       | 7                | 4                         | DFN2510A-10 | 2.5 x 1.0 x 0.48 |     |
| PUSB3FR6             |  |               |                       | 0.35           | 15                               | 0.29                       | 7                | 6                         | DFN2111-7   | 2.1 x 1.1 x 0.48 |     |
| PUSB3AB4             |  |               | bi                    | 0.17           | 15                               | 0.4                        | 7                | 4                         | DFN2510A-10 | 2.5 x 1.0 x 0.48 |     |
| PUSB3AB6             |  |               |                       | 0.15           | 15                               | 0.4                        | 7                | 6                         | DFN2111-7   | 2.1 x 1.1 x 0.48 |     |
| PCMF1USB3S           | Common Mode Filter with ESD protection | 5             | uni                   | 0.3            | 15                               | 0.14                       |                  | 2                         | WLCSP5      | 0.8 x 1.2 x 0.5  |     |
| PCMF2USB3S           |  |               |                       |                |                                  |                            |                  | 4                         | WLCSP10     | 1.6 x 1.2 x 0.5  |     |
| PCMF3USB3S           |  |               |                       |                |                                  |                            |                  | 6                         | WLCSP15     | 2.4 x 1.2 x 0.5  |     |
| PESD1USB3S           | ESD protection in PCMF footprint       | 5             | uni                   | 0.45           | 15                               | 0.14                       |                  | 2                         | WLCSP5      | 0.8 x 1.2 x 0.5  |     |
| PESD2USB3S           |  |               |                       |                |                                  |                            |                  | 4                         | WLCSP10     | 1.6 x 1.2 x 0.5  |     |
| PESD3USB3S           |  |               |                       |                |                                  |                            |                  | 6                         | WLCSP15     | 2.4 x 1.2 x 0.5  |     |
| <b>PCMF1USB3B/C</b>  | Common Mode Filter with ESD protection | 4             | bi                    | 0.3            | 20                               | 0.22                       | 9.5              | 2                         | WLCSP5      | 0.8 x 1.2 x 0.5  |     |
| <b>PCMF2USB3B/C</b>  |  |               |                       | 0.3            | 20                               | 0.22                       | 9.5              | 4                         | WLCSP10     | 1.6 x 1.2 x 0.5  |     |
| <b>PCMF3USB3B/C</b>  |  |               |                       | 0.3            | 20                               | 0.22                       | 9.5              | 6                         | WLCSP15     | 2.4 x 1.2 x 0.5  |     |
| <b>PCMF1USB3BA/C</b> |  |               |                       | 0.3            | 20                               | 0.22                       | 9.5              | 2                         | WLCSP5      | 0.8 x 1.2 x 0.5  |     |
| <b>PCMF2USB3BA/C</b> |  |               |                       | 0.3            | 20                               | 0.22                       | 9.5              | 4                         | WLCSP10     | 1.6 x 1.2 x 0.5  |     |
| <b>PCMF3USB3BA/C</b> |  |               |                       | 0.3            | 20                               | 0.22                       | 9.5              | 6                         | WLCSP15     | 2.4 x 1.2 x 0.5  |     |
| <b>PESD1USB3B/C</b>  | ESD protection in PCMF footprint       | 4             | bi                    | 0.29           | 20                               | 0.2                        | 9.5              | 2                         | WLCSP5      | 0.8 x 1.2 x 0.5  |     |
| <b>PESD2USB3B/C</b>  |  |               |                       | 0.29           | 20                               | 0.2                        | 9.5              | 4                         | WLCSP10     | 1.6 x 1.2 x 0.5  |     |
| <b>PESD3USB3B/C</b>  |  |               |                       | 0.29           | 20                               | 0.2                        | 9.5              | 6                         | WLCSP15     | 2.4 x 1.2 x 0.5  |     |
| PESD3V3Z1BSF         | ESD protection                         | 3.3           | bi                    | 0.28           | 20                               | 0.19                       | 9.5              | 1                         | DSN0603-2   | 0.6 x 0.3 x 0.3  |     |
| PESD3V3W1BSF         |  |               |                       | 0.45           | 30                               | 0.11                       | 15               |                           |             |                  |     |
| <b>PESD3V3W1BCSF</b> |  |               |                       | 0.55           | 30                               | 0.1                        | 20               |                           |             |                  |     |
| PESD3V3C1BSF         |  |               |                       | 0.2            | 20                               | 0.23                       | 9                |                           |             |                  |     |
| <b>PESD4V0Z1BSF</b>  |  |               |                       | 4              | 0.28                             | 30                         | 0.19             |                           |             |                  | 9.5 |
| PESD4V0Z1BCSF        |  | 0.45          |                       |                | 30                               | 0.11                       | 15               |                           |             |                  |     |
| <b>PESD4V0W1BCSF</b> |  | 0.55          |                       |                | 30                               | 0.1                        | 20               |                           |             |                  |     |
| <b>PESD5V0R1BSF</b>  |  | 5             |                       | 0.1            | 10                               | 0.45                       | 4.5              |                           |             |                  |     |
| PESD5V0H1BSF         |  |               |                       | 0.15           | 15                               | 0.25                       | 7                |                           |             |                  |     |
| PESD5V0C1BSF         |  |               |                       | 0.2            | 20                               | 0.23                       | 9                |                           |             |                  |     |
| PESD5V0C1USF         |  | 6.5           |                       | uni            | 0.45                             | 20                         | 0.1              |                           |             |                  | 9   |
| <b>PESD6V5C1USF</b>  |  |               |                       | uni            | 0.45                             | 20                         | 0.1              |                           |             |                  | 9   |
| PESD7V0R1BSF         |  | 7             |                       | bi             | 0.1                              | 10                         | 0.45             |                           |             |                  | 4.5 |
| <b>PESD7V0H1BSF</b>  |  |               |                       |                | 0.15                             | 15                         | 0.25             |                           |             |                  | 7   |
| <b>PESD7V0C1BSF</b>  |  |               |                       |                | 0.2                              | 20                         | 0.23             |                           |             |                  | 9   |
| <b>PESD9V0C1USF</b>  |  |               |                       |                | 0.2                              | 20                         | 0.23             |                           |             |                  | 9   |

## TrEOS2 protection devices

Industry-leading low trigger voltages  $V_{t1}$

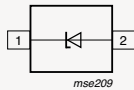






Types in **bold** represent new products

| Type               | device         | $V_{RWM}$ (V) | Uni- or bidirectional | $C_d$ typ (pF) | ESD rating max (kV) ( $\Omega$ ) | $R_{dyn}$ TLP ( $\Omega$ ) | Trigger voltage $V_{t1}$ | Number of protected lines | Package   | Size (mm)       |
|--------------------|----------------|---------------|-----------------------|----------------|----------------------------------|----------------------------|--------------------------|---------------------------|-----------|-----------------|
| <b>PES2V0Y1BSF</b> | ESD protection | 2.0           | bi                    | 0.69           | 20                               | 0.2                        | 4.3                      | 1                         | DSN0603-2 | 0.6 x 0.3 x 0.3 |
| <b>PES2V5Y1BSF</b> |                | 2.5           |                       | 0.25           | 15                               | 0.28                       | 4.9                      |                           |           |                 |
| <b>PES3V3Y1BSF</b> |                | 3.3           |                       | 0.24           | 15                               | 0.25                       | 7                        |                           |           |                 |
| <b>PES4V0Y1BSF</b> |                | 4             |                       | 0.24           | 15                               | 0.25                       | 7                        |                           |           |                 |



# General purpose ESD protection devices

Types in **bold** represent new products

| Number of protected lines |               | V <sub>RWM</sub> (V) | C <sub>line typ</sub> (pF) | C <sub>line max</sub> (pF) | I <sub>pp max</sub> (A) [1] | ESD rating max (kV) [2] | I <sub>r</sub> max (μA) @ V <sub>RWM</sub> | Configuration   | Type                | Package   | Size (mm)  |                 |                 |                   |                  |   |
|---------------------------|---------------|----------------------|----------------------------|----------------------------|-----------------------------|-------------------------|--|---|---------------------|---|--|-----------------|-----------------|-------------------|------------------|---|
| Unidirectional            | Bidirectional |                      |                            |                            |                             |                         |  |   |                     |   |  |                 |                 |                   |                  |   |
| 1                         | 0             | 5                    | 35                         | 42                         | 3.5                         | 30                      | 0.1  |  | PESD5V0S1USF        | DSN0603-2 (SOD962)  | 0.6 x 0.3 x 0.3  |                 |                 |                   |                  |   |
|                           |               | 5.5                  | 12                         | 15.4                       | 1.2                         | 30                      | 0.1  |   | PESD5V0L1USF        |    |  |                 |                 |                   |                  |   |
|                           |               | 3.3                  | 2.6                        | 3.1                        |                             |                         | 9  |   | 0.1 (@ 3 V)         | PESD3V3U1UL   | DFN1006-2 (SOD882)   | 1.0 x 0.6 x 0.5 |                 |                   |                  |   |
|                           |               |                      | 34                         | 40                         | 4.5                         | 30                      | 0.3  |   | PESD3V3L1UL         |   |  |                 |                 |                   |                  |   |
|                           |               | 5                    | 207                        | 300                        | 15                          | 30                      | 2  |   | PESD3V3S1UL         |   |  |                 |                 |                   |                  |   |
|                           |               |                      | 2                          | 2.6                        |                             | 9                       | 0.1  |   | PESD5V0U1UL         |   |  |                 |                 |                   |                  |   |
|                           |               | 5                    | 25                         | 30                         | 3.5                         | 26                      | 0.1  |   | PESD5V0L1UL         |    |  |                 |                 |                   |                  |   |
|                           |               |                      | 152                        | 200                        | 15                          | 30                      | 1  |   | PESD5V0S1UL         |   |  |                 |                 |                   |                  |   |
|                           |               | 12                   | 38                         | 75                         | 5                           | 30                      | 0.05                                       |   | PESD12VS1UL         |   |  |                 |                 |                   |                  |   |
|                           |               | 15                   | 32                         | 70                         | 5                           | 30                      | 0.05                                       |   | PESD15VS1UL         |   |  |                 |                 |                   |                  |   |
|                           |               | 24                   | 23                         | 50                         | 3                           | 23                      | 0.05                                       |   | PESD24VS1UL         |   |  |                 |                 |                   |                  |   |
|                           |               | 36                   | 18                         | 30                         | 2.5                         | 30                      | 0.01                                       |   | PESD36VS1UL         |   |  |                 |                 |                   |                  |   |
|                           |               | 5                    | 25                         | 30                         | 3.5                         | 26                      | 0.1  |   | PESD5V0L1ULD        | DFN1006D-2 (SOD882D)  |  |                 | 1.0 x 0.6 x 0.4 |                   |                  |   |
|                           |               |                      | 152                        | 200                        | 15                          | 30                      | 1  |   | PESD5V0S1ULD        |   |  |                 |                 |                   |                  |   |
|                           |               | 8                    | 70                         | 90                         | 13                          | 30                      | 0.5  |   | <b>PESD8V0S1ULD</b> |   |  |                 |                 |                   |                  |   |
|                           |               | 12                   | 38                         | 75                         | 5                           | 30                      | 0.05                                       |   | PESD12VS1ULD        |   |  |                 |                 |                   |                  |   |
|                           |               | 15                   | 32                         | 70                         | 5                           | 30                      | 0.05                                       |   | PESD15VS1ULD        |   |  |                 |                 |                   |                  |   |
|                           |               | 24                   | 23                         | 50                         | 3                           | 23                      | 0.05                                       |   | PESD24VS1ULD        |   |  |                 |                 |                   |                  |   |
|                           |               | 2.5                  | 229                        | 300                        | 20                          | 30                      | 6  |   | PESD5Z2.5           |   | SOD523 (SC-79)   | 1.2 x 0.8 x 0.6 |                 |                   |                  |   |
|                           |               | 3.3                  | 2.6                        | 3.1                        |                             |                         | 9  |   | 0.1 (@ 3 V)         |   |  |                 |                 | PESD3V3U1UB       |                  |   |
|                           |               |                      | 34                         | 40                         | 4.5                         | 30                      | 0.3  |   | PESD3V3L1UB         |   |  |                 |                 |                   |                  |   |
|                           |               |                      | 172                        | 200                        | 20                          | 30                      | 0.05                                       |   | PESD5Z3.3           |   |  |                 |                 |                   |                  |   |
|                           |               |                      | 207                        | 300                        | 18                          | 30                      | 2  |   | PESD3V3S1UB         |   |  |                 |                 |                   |                  |   |
|                           |               | 5                    | 2                          | 2.6                        |                             | 9                       | 0.1  |   | PESD5V0U1UB         |   |  |                 |                 |                   |                  |   |
|                           |               |                      | 25                         | 30                         | 3.5                         | 26                      | 0.1  |   | PESD5V0L1UB         |  |  |                 |                 |                   |                  |   |
|                           |               |                      | 89                         | 150                        | 10                          | 30                      | 0.05                                       |   | PESD5Z5.0           |   |  |                 |                 |                   |                  |   |
|                           |               |                      | 152                        | 200                        | 15                          | 30                      | 1  |   | PESD5V0S1UB         |   |  |                 |                 |                   |                  |   |
|                           |               | 6                    | 78                         | 150                        | 10                          | 30                      | 0.01                                       |   | PESD5Z6.0           |   |  |                 |                 |                   |                  |   |
|                           |               | 7                    | 69                         | 150                        | 10                          | 30                      | 0.01                                       |   | PESD5Z7.0           |   |  |                 |                 |                   |                  |   |
|                           |               | 12                   | 35                         | 75                         | 6                           | 30                      | 0.01                                       |   | PESD5Z12            |   |  |                 |                 |                   |                  |   |
|                           |               |                      | 38                         | 75                         | 5                           | 30                      | 0.05                                       |   | PESD12VS1UB         |   |  |                 |                 |                   |                  |   |
|                           |               | 15                   | 32                         | 70                         | 5                           | 30                      | 0.05                                       |   | PESD15VS1UB         |   |  |                 |                 |                   |                  |   |
|                           |               | 24                   | 23                         | 50                         | 3                           | 23                      | 0.05                                       |   | PESD24VS1UB         |   |  |                 |                 |                   |                  |   |
|                           |               | 3.3                  | 2.6                        | 3.1                        |                             |                         | 9  |   | 0.1 (@ 3 V)         | PESD3V3U1UA   |  |                 | SOD323 (SC-76)  | 1.7 x 1.25 x 0.95 |                  |   |
|                           |               | 5                    | 2                          | 2.6                        |                             | 9                       | 0.1  |   | PESD5V0U1UA         |   |  |                 |                 |                   |                  |   |
|                           |               |                      | 25                         | 30                         | 3.5                         | 26                      | 0.1  |   | PESD5V0L1UA         |  |  |                 |                 |                   |                  |   |
|                           |               |                      | 480                        | 530                        | 47                          | 30                      | 4  |   | PESD5V0S1UA         |   |  |                 |                 |                   |                  |   |
|                           |               | 12                   | 160                        | 180                        | 22.5                        | 30                      | 0.1  |   | PESD12VS1UA         |   |  |                 |                 |                   |                  |   |
|                           |               | 24                   | 23                         | 50                         | 3                           | 23                      | 0.05                                       |   | PESD24VS1UA         |   |  |                 |                 |                   |                  |   |
|                           |               | 5                    | 480                        | 530                        | 47                          | 30                      | 4  |   | PESD5V0S1UJ         | SOD323F (SC-90)   |  |                 |                 |                   | 1.7 x 1.25 x 0.7 |   |
|                           |               | 12                   | 160                        | 180                        | 22.5                        | 30                      | 0.1  |   | PESD12VS1UJ         |   |  |                 |                 |                   |                  |  |
|                           |               | 36                   | 18                         | 30                         | 2.5                         | 30                      | 0.01                                       |   | PESD36VS1UJ         |   |  |                 |                 |                   |                  |   |

ESD protection, TVS, filtering and signal conditioning

[1] 8 / 20 μs exponential decay waveform according to IEC 61000-4-5 [2] according to IEC 61000-4-2 (contact discharge)

General purpose ESD protection protection devices

Types in **bold** represent new products

| Number of protected lines |               | V <sub>RWM</sub> (V) | C <sub>line</sub> typ (pF) | C <sub>line</sub> max (pF) | I <sub>pp</sub> max (A) [1] | ESD rating max (kV) [2] | I <sub>fr</sub> max (µA) @ V <sub>RWM</sub> | Configuration | Type                 | Package           | Size (mm)         |
|---------------------------|---------------|----------------------|----------------------------|----------------------------|-----------------------------|-------------------------|---|---------------|----------------------|-------------------|-------------------|
| Unidirectional            | Bidirectional |                      |                            |                            |                             |                         |   |               |                      |                   |                   |
| 0                         | 1             | 3.3                  | 5.5                        | 6                          | 5.4                         | 20                      | 0.1   |               | PESD3V3U1BCSF        |                   | 0.6 x 0.3 x 0.3   |
|                           |               |                      | 8.5                        | 10                         | 7.1                         | 30                      | 0.1   |               | PESD3V3V1BCSF        |                   |                   |
|                           |               | 5.5                  | 5.3                        | 6                          | 1                           | 20                      | 0.1   |               | PESD5V0V1BCSF        |                   |                   |
|                           |               |                      |                            |                            | 2                           | 20                      | 0.1   |               | PESD5V0V1BDSF        |                   |                   |
|                           |               |                      | 4.5                        | 1                          | 15                          | 0.1                     | PESD5V0V1BSF                                |               |                      |                   |                   |
|                           |               |                      | 12                         | 15.4                       | 3                           | 30                      | 0.1   |               | PESD5V0L1BSF         |                   |                   |
|                           |               |                      | 35                         | 45                         | 8                           | 30                      | 0.1   |               | PESD5V0S1BSF         |                   |                   |
|                           |               | 16                   | 5.7                        | 6.5                        | 1.3                         | 12                      | 0.05  |               | <b>PESD16VV1BSF</b>  |                   |                   |
|                           |               | 18                   | 4                          | 6                          | 3                           | 25                      | 0.1   |               | <b>PESD18VV1BBSF</b> |                   |                   |
|                           |               | 3.3                  | 101                        | -                          | 18                          | 30                      | 2   |               | PESD3V3L1BA          |                   |                   |
|                           |               | 5                    | 75                         | -                          | 15                          | 30                      | 1   |               | PESD5V0L1BA          |                   |                   |
|                           |               | 12                   | 19                         | -                          | 5                           | 30                      | 0.05  |               | PESD12VL1BA          |                   |                   |
|                           |               | 15                   | 16                         | -                          | 5                           | 30                      | 0.05  |               | PESD15VL1BA          |                   |                   |
|                           |               | 24                   | 11                         | -                          | 3                           | 23                      | 0.05  |               | PESD24VL1BA          |                   |                   |
|                           |               | 3.3                  | 11                         | 13                         | 5                           | 30                      | 0.01  |               | <b>PESD3V3V1BL</b>   |                   | 1.7 x 1.25 x 0.95 |
|                           |               |                      | 22                         | 30                         | 10                          | 30                      | 0.05  |               | PESD3V3T1BL          |                   |                   |
|                           |               |                      | 35                         | 40                         | 15                          | 30                      | 0.1   |               | <b>PESD3V3S1BL</b>   |                   |                   |
|                           |               |                      | 65                         | 78                         | 34                          | 30                      | 0.05  |               | <b>PTVS3V3D1BAL</b>  |                   |                   |
|                           |               | 4.5                  | 65                         | 78                         | 34                          | 30                      | 0.05  |               | PTVS4V5D1BL          |                   | 1.7 x 1.25 x 0.95 |
|                           |               | 5                    | 11                         | 13                         | 4.8                         | 30                      | 0.01  |               | PESD5V0V1BL          |                   |                   |
|                           |               | 5                    | 35                         | 45                         | 12                          | 30                      | 0.1   |               | PESD5V0S1BL          |                   | 1.7 x 1.25 x 0.95 |
|                           |               |                      | 5.5                        | 70                         | 84                          | 35                      | 30  |               | 0.1                  |                   |                   |
|                           |               | 12                   | 17                         | 25                         | 7.8                         | 15                      | 0.01  |               | PESD12VV1BL          |                   | 1.7 x 1.25 x 0.95 |
|                           |               | 3                    | 20                         | 25                         | 10                          | 30                      | 0.1   |               | <b>PESD3V3T1BLD</b>  |                   |                   |
|                           |               | 11                   | 13                         | 4.8                        | 30                          | 0.01                    | PESD5V0V1BLD                                |               |                      |                   |                   |
|                           |               |                      | 35                         | 45                         | 12                          | 30                      | 0.1   |               | PESD5V0S1BLD         |                   |                   |
|                           |               | 11                   | 13                         | 4.8                        | 30                          | 0.01                    | PESD5V0V1BB                                 |               |                      | 1.2 x 0.8 x 0.6   |                   |
|                           |               |                      | 35                         | 45                         | 12                          | 30                      | 0.1   |               |                      |                   | PESD5V0S1BB       |
|                           |               | 11                   | 13                         | 4.8                        | 30                          | 0.01                    | PESD5V0V1BA                                 |               |                      | 1.7 x 1.25 x 0.95 |                   |
|                           |               |                      | 35                         | 45                         | 12                          | 12                      | 0.1   |               |                      |                   | PESD5V0S1BA       |
|                           |               | 2.9                  | 3.5                        | 10                         | 0.1                         | PESD5V0U1BL             |   |               | 1.7 x 1.25 x 0.95    |                   |                   |
|                           |               |                      |                            |                            |                             | PESD5V0U1BLD            |   |               |                      |                   |                   |
|                           |               |                      |                            |                            |                             | PESD5V0U1BB             |   |               |                      |                   |                   |
| PESD5V0U1BA               |               |                      |                            |                            |                             |                         |   |               |                      |                   |                   |

[1] 8 / 20 µs exponential decay waveform according to IEC 61000-4-5

[2] according to IEC 61000-4-2 (contact discharge)

General purpose ESD protection devices

| Number of protected lines |               | $V_{RWM}$ (V) | $C_{line}$ typ (pF) | $C_{line}$ max (pF) | $I_{pp}$ max (A) [1] | ESD rating max (kV) [2] | $I_R$ max (μA) @ $V_{RWM}$ | Configuration | Type         | Package              | Size (mm)        |
|---------------------------|---------------|---------------|---------------------|---------------------|----------------------|-------------------------|----------------------------|---------------|--------------|----------------------|------------------|
| Unidirectional            | Bidirectional |               |                     |                     |                      |                         |                            |               |              |                      |                  |
| 2                         | 1             | 3.3           | 22                  | 28                  | 3                    | 15                      | 0.3                        |               | PESD3V3L2UM  | DFN1006-3 (SOT883)   | 1.0 x 0.6 x 0.5  |
|                           |               | 5             | 16                  | 19                  | 2.5                  | 15                      | 0.025                      |               | PESD5V0L2UM  |                      |                  |
|                           |               |               |                     |                     | 2.5                  | 15                      | 0.025                      |               | PESD5V0L2UMB | DFN1006B-3 (SOT883B) |                  |
|                           |               | 3.3           | 207                 | 300                 | 18                   | 30                      | 2                          |               | PESD3V3S2UT  | SOT23                | 2.9 x 1.3 x 1    |
|                           |               | 5.2           | 152                 | 200                 | 15                   | 30                      | 1                          |               | PESD5V2S2UT  |                      |                  |
|                           |               | 12            | 38                  | 75                  | 5                    | 30                      | 1                          |               | PESD12VS2UT  |                      |                  |
|                           |               | 15            | 32                  | 70                  | 5                    | 30                      | 1                          |               | PESD15VS2UT  |                      |                  |
|                           |               | 24            | 23                  | 50                  | 3                    | 23                      | 1                          |               | PESD24VS2UT  |                      |                  |
|                           |               | 36            | 17                  | 35                  | 2.5                  | 30                      | 1 (@ 30 V)                 |               | PESD36VS2UT  |                      |                  |
|                           |               | 3.3           | 207                 | 300                 | 18                   | 30                      | 2                          |               | PESD3V3S2UAT |                      |                  |
|                           |               | 5             | 152                 | 200                 | 15                   | 30                      | 1                          |               | PESD5V0S2UAT |                      |                  |
|                           |               | 15            | 32                  | 70                  | 5                    | 30                      | 0.05                       |               | PESD15VS2UAT |                      |                  |
|                           |               | 24            | 23                  | 50                  | 3                    | 23                      | 0.05                       |               | PESD24VS2UAT |                      |                  |
|                           |               | 5             | 38                  | 46                  | 6.5                  | 30                      | 0.09 (@ 4 V)               |               | PESD5V0L2UU  | SOT323 (SC-70)       | 2 x 1.25 x 0.95  |
|                           |               | 6             | 34                  | 40                  | 5.5                  | 30                      | 0.018 (@ 4.3 V)            |               | PESD6V0L2UU  |                      |                  |
| 0                         | 2             | 3.3           | 101                 | -                   | 15                   | 30                      | 2                          |               | PESD3V3L2BT  | SOT23                | 2.9 x 1.3 x 1    |
|                           |               | 5             | 75                  | -                   | 13                   | 30                      | 1                          |               | PESD5V0L2BT  |                      |                  |
|                           |               | 12            | 19                  | -                   | 5                    | 30                      | 0.05                       |               | PESD12VL2BT  |                      |                  |
|                           |               | 15            | 16                  | -                   | 5                    | 30                      | 0.05                       |               | PESD15VL2BT  |                      |                  |
|                           |               | 24            | 11                  | -                   | 3                    | 23                      | 0.05                       |               | PESD24VL2BT  |                      |                  |
|                           |               | 5             | 35                  | 45                  | 12                   | 30                      | 0.1                        |               | PESD5V0S2BT  |                      |                  |
|                           |               |               | 2.9                 | 3.5                 |                      | 10                      | 0.1                        |               | PESD5V0U2BT  |                      |                  |
|                           |               |               | 18                  | 20                  | 9                    | 30                      | 0.01                       |               | PESD5V0U2BM  | DFN1006-3 (SOT883)   | 1.0 x 0.6 x 0.5  |
|                           |               |               | 2.9                 | 3.5                 | 1.5                  | 10                      | 0.1                        |               | PESD5V0U2BMB | DFN1006B-3 (SOT883B) |                  |
|                           |               |               | 18                  | 20                  | 9                    | 30                      | 0.01                       |               | PESD5V0V2BMB |                      | 1 x 0.6 x 0.37   |
|                           |               |               | 35                  | 45                  | 35                   | 30                      | 0.1                        |               | PESD5V0S2BQA | DFN1010D-3 (SOT1215) | 1.1 x 1.0 x 0.37 |

ESD protection, TVS, filtering and signal conditioning

[1] 8 / 20 μs exponential decay waveform according to IEC 61000-4-5

[2] according to IEC 61000-4-2 (contact discharge)

General purpose ESD protection devices

Types in **bold** represent new products

| Number of protected lines |               | $V_{RWM}$ (V) | $C_{line typ}$ (pF) | $C_{line max}$ (pF) | $I_{PP max}$ (A) [1] | ESD rating max (kV) [2] | $I_R max$ (μA) @ $V_{RWM}$ | Configuration | Type                | Package             | Size (mm)       |  |                 |
|---------------------------|---------------|---------------|---------------------|---------------------|----------------------|-------------------------|----------------------------|---------------|---------------------|---------------------|-----------------|--|-----------------|
| Unidirectional            | Bidirectional |               |                     |                     |                      |                         |                            |               |                     |                     |                 |  |                 |
| 4                         | 3             | 3.3           | 22                  | 28                  | 3                    | 20                      | 0.3                        |               | PESD3V3L4UF         |                     | 1.45 x 1 x 0.5  |  |                 |
|                           |               |               | 110                 | 300                 | 10                   | 30                      | 1 (@ 3 V)                  |               | PESD3V3S4UF         |                     |                 |  |                 |
|                           |               | 5             | 16                  | 19                  | 2.5                  | 20                      | 0.025                      |               | PESD5V0L4UF         |                     |                 |  |                 |
|                           |               |               | 85                  | 220                 | 10                   | 30                      | 0.1 (@ 4.3 V)              |               | PESD5V0S4UF         |                     |                 |  |                 |
|                           |               | 3             | 200                 | 240                 |                      | 8                       | 2                          |               | BZA856A             |                     | 2 x 1.25 x 0.95 |  |                 |
|                           |               | 3.3           | 22                  | 28                  | 3                    | 20                      | 0.3                        |               | PESD3V3L4UG         |                     |                 |  |                 |
|                           |               | 5             | 16                  | 19                  | 2.5                  | 20                      | 0.025                      |               | PESD5V0L4UG         |                     |                 |  |                 |
|                           |               | 3             | 3                   | 3                   | 200                  | 240                     |                            | 8             | 2                   |                     | BZA456A         |  | 2.9 x 1.5 x 1   |
|                           |               |               |                     | 3.3                 | 215                  | 300                     | 20                         | 30            | 0.8                 |                     | PESD3V3S4UD     |  |                 |
|                           |               |               |                     | 5                   | 165                  | 220                     | 20                         | 30            | 0.2                 |                     | PESD5V0S4UD     |  |                 |
|                           |               |               |                     | 15                  | 37                   | 48                      |                            | 8             | 0.1                 |                     | BZA420A         |  |                 |
|                           |               |               |                     | 24                  | 40                   | 70                      | 4                          | 23            | 0.01                |                     | PESD24VS4UD     |  |                 |
| 0                         | 4             | 3.3           | 9.9                 | 3.5                 | 6                    | 20                      | 0.1                        |               | <b>PESD3V3L4BHM</b> | DFN1308-6 (SOT8006) | 1.3 x 0.8 x 0.4 |  |                 |
|                           |               |               |                     |                     |                      |                         |                            |               | PESD5V0U4BF         | DFN1410-6 (SOT886)  | 1.45 x 1 x 0.5  |  |                 |
|                           |               | 5             | 45                  | 75                  |                      | 15                      | 0.1                        |               | BZA408B             | SOT457 (SC-74)      | 2.9 x 1.5 x 1.0 |  |                 |
| 5                         | 4             | 3.3           | 20                  | 24                  | 3.2                  | 15                      | 2                          |               | PESD3V3L5UK         |                     | 1 x 1 x 0.5     |  |                 |
|                           |               |               |                     |                     |                      |                         |                            |               | PESD5V0L5UK         |                     |                 |  |                 |
|                           |               | 5             | 18.5                | 22                  |                      | 20                      | 0.5                        |               | PESD3V3L5UF         |                     | 1.45 x 1 x 0.5  |  |                 |
|                           |               | 3.3           | 22                  | 28                  | 2.5                  | 20                      | 0.3                        |               | PESD5V0L5UF         |                     |                 |  |                 |
|                           |               | 3             | 3                   | 3.3                 | 22                   | 28                      | 2.5                        | 20            | 0.3                 |                     | PESD3V3L5UY     |  | 2 x 1.25 x 0.95 |
|                           |               |               |                     |                     |                      |                         |                            |               |                     |                     | 5               |  |                 |
|                           |               |               |                     | 3.3                 | 215                  | 300                     | 20                         | 30            | 0.8                 |                     | PESD3V3S5UD     |  | 2.9 x 1.5 x 1.0 |
|                           |               |               |                     | 5                   | 165                  | 220                     | 20                         | 30            | 0.2                 |                     | PESD5V0S5UD     |  |                 |
|                           |               |               |                     | 24                  | 45                   | 70                      | 4                          | 23            | 0.015               |                     | PESD24VS5UD     |  |                 |
| 0                         | 5             | 5             | 2.9                 | 3.5                 | -                    | 10                      | 0.1                        |               | PESD5V0U5BF         | DFN1410-6 (SOT886)  | 1.45 x 1 x 0.5  |  |                 |

[1] 8 / 20 μs exponential decay waveform according to IEC 61000-4-5 [2] according to IEC 61000-4-2 (contact discharge)

# Audio interface protection

Types in **bold** represent new products

| Lines | $V_{RWM}(V)$ | $V_{BR\ min}(V)$ | $V_{BR\ max}(V)$ | $C_D\ typ(pF)$ | $C_D\ max(pF)$ | $I_{ppM}\ 8/20\mu s(A)$ | $V_{CL}\ 8/20\mu s @ I_{ppM}(V)$ | $V_{ESD}(kV)$ | Configuration | Type                 | Package                |                        |
|-------|--------------|------------------|------------------|----------------|----------------|-------------------------|----------------------------------|---------------|---------------|----------------------|------------------------|------------------------|
| 1     | 4            |                  |                  | 0.28           | 0.34           | 10                      | 5                                | 2             |               | <b>PESD4V0Z1BSF</b>  | DSN0603-2 (SOD962)<br> |                        |
|       |              |                  |                  | 0.45           | 0.60           | 15                      | 5                                | 30            |               | <b>PESD4V0Z1BCSF</b> |                        |                        |
|       |              |                  |                  | 0.55           | 0.65           | 20                      | 5                                | 30            |               | <b>PESD4V0W1BCSF</b> |                        |                        |
|       | 3.3          | 4.7              |                  |                | 22             | 30                      | -                                | -             | 30            |                      | PESD3V3T1BL            | DFN1006-2 (SOD882)<br> |
|       |              | 4.5              |                  |                | 65             | 78                      | 34                               | 13.2          | 30            |                      | <b>PTVS3V3D1BAL</b>    |                        |
|       | 4.5          | 4.7              |                  |                | 65             | 78                      | 34                               | 13.2          | 30            | <b>PTVS4V5D1BL</b>   |                        |                        |
|       | 5.5          | 5.6              | 7.6              |                | 70             | 84                      | 35                               | 12.2          | 30            | <b>PTVS5V5D1BL</b>   |                        |                        |
|       | 5            | 5.5              | 9.5              |                | 35             | 45                      | 12                               | 14            | 30            |                      | PESD5V0S1BL            |                        |
|       |              |                  |                  |                | 70             | 90                      | 28                               | 11.5          | 30            |                      | PESD5V0S2BQA           |                        |
|       |              |                  |                  |                | 35             | 45                      | 12                               | 14            | 30            | PESD5V0S1BLD         |                        |                        |
|       | 5.8          | 7.8              |                  |                | 11             | 13                      | 4.8                              | 12.5          | 30            |                      | PESD5V0V1BL            |                        |
|       |              |                  |                  |                | 11             | 13                      | 4.8                              | 12.5          | 30            |                      | PESD5V0V1BLD           |                        |
| 12    | 14.6         | 16.8             |                  | 17             | 25             | 7.8                     | 38                               | 30            |               | PESD12VV1BL          |                        |                        |
| 2     | 5            | 5.8              | 7.8              |                | 18             | 20                      | 9                                | 12.5          | 30            |                      | PESD5V0V2BM            |                        |
|       |              |                  |                  |                | 18             | 20                      | 9                                | 12.5          | 30            |                      | PESD5V0V2BMB           |                        |
|       | 4            |                  |                  |                | 0.3            |                         | 9.5                              | 6             | 20            |                      | <b>PCMF1USB3B/C</b>    | WLCSP5<br>             |
|       |              |                  |                  |                | 0.3            |                         | 9.5                              | 6             | 20            |                      | <b>PCMF2USB3B/C</b>    | WLCSP10<br>            |
|       |              |                  |                  |                | 0.3            |                         | 9.5                              | 6             | 20            |                      | <b>PCMF3USB3B/C</b>    | WLCSP15<br>            |
|       |              |                  |                  |                | 0.29           |                         | 9.5                              | 6             | 20            |                      | <b>PESD1USB3B/C</b>    | WLCSP5<br>             |
|       |              |                  |                  |                | 0.29           |                         | 9.5                              | 6             | 20            |                      | <b>PESD2USB3B/C</b>    | WLCSP10<br>            |
|       |              |                  |                  |                | 0.29           |                         | 9.5                              | 6             | 20            |                      | <b>PESD3USB3B/C</b>    | WLCSP15<br>            |

ESD protection, TVS, filtering and signal conditioning

## Automotive high-speed network protection

Types in **bold** represent new products

| Number of protected lines | $V_{RWM}$ (V) | $C_{line}$ typ (pF) | $I_{RM}$ max (μA) | ESD rating max (kV) [1] | Configuration | Type                | Package                  | Size (mm)        |
|---------------------------|---------------|---------------------|-------------------|-------------------------|---------------|---------------------|--------------------------|------------------|
| 1                         | 5.5           | 0.4                 | 0.1               | 10                      |               | <b>PESD5V0F1BLD</b> | DFN1006D-2 (SOD882D)<br> | 1.0 x 0.6 x 0.37 |
| 2                         | 5             | 1                   | 0.1               | 8                       |               | PESD2ETH-X          | SOT143B<br>              | 2.9 x 1.3 x 1.0  |
|                           |               | 1.8                 | 0.1               | 12                      |               | PESD2ETH-AX         |                          |                  |
| 2                         | 5             | 1.3                 | 0.1               | 8                       |               | PESD2ETH-D          | SOT457<br>               | 2.9 x 1.5 x 1.0  |
|                           |               | 2                   | 0.1               | 12                      |               | PESD2ETH-AD         |                          |                  |
| 4                         | 5.5           | 0.6                 | 1 @ 3 V           | 8                       |               | PESD1LVDS           | DFN2510-10 (SOT1165)<br> | 2.5 x 1.0 x 0.48 |
|                           |               | 0.6                 | 1 @ 3 V           | 8                       |               | PRTR5V0U4D          | SOT457<br>               | 2.9 x 1.5 x 1.0  |

[1] according to IEC 61000-4-2 (contact discharge)

## Automotive in-vehicle network bus line protection







| Number of protected lines bidirectional | $V_{RWM}$ (V)                | $C_{line}$ typ (pF) | $C_{line}$ max (pF) | $I_{PPM}$ 8/20μs (A)       | $V_{CL}$ 8/20μs @ $I_{PPM}$ (V) | ESD rating max (kV) [2] | $I_T$ max [μA] @ $V_{RWM}$ | Configuration | Type         | Package            | Size (mm)         |
|---|------------------------------|---------------------|---------------------|----------------------------|---------------------------------|-------------------------|----------------------------|---------------|--------------|--------------------|-------------------|
| 1                                       | 24                           | 14                  | 17                  | 3.5                        | 42                              | 30                      | 0.05                       |               | PESD1IVN24-A | SOD323 (SC-76)<br> | 1.7 x 1.25 x 0.95 |
|   | 27                           | 14                  | 17                  | 3                          | 45                              | 30                      | 0.05                       |               | PESD1IVN27-A |                    |                   |
| 2                                       | 24                           | 14                  | 17                  | 3.5                        | 42                              | 30                      | 0.05                       |               | PESD2IVN24-T | SOT23<br>          | 2.0 x 1.25 x 0.95 |
|   | 27                           | 14                  | 17                  | 3                          | 45                              | 30                      | 0.05                       |               | PESD2IVN27-T |                    |                   |
| 1                                       | 27                           | 14                  | 17                  | 3                          | 45                              | 30                      | 0.05                       |               | PESD1IVN27-U | SOT323             | 2.0 x 1.25 x 0.95 |
| 2                                       | 24                           | 14                  | 17                  | 3.5                        | 42                              | 30                      | 0.05                       |               | PESD2IVN24-U |                    |                   |
|   | 27                           | 14                  | 17                  | 3                          | 45                              | 30                      | 0.05                       |               | PESD2IVN27-U |                    |                   |
| 1                                       | 15 (diode 1)<br>24 (diode 2) | 13                  | 17                  | 3 (diode 1)<br>5 (diode 2) | 70 (diode 1)<br>44 (diode 2)    | 23                      | 0.05                       |               | PESD1LIN     | SOD323 (SC-76)<br> |                   |
| 2                                       | 24                           | 11                  | 17                  | 3                          | 70                              | 23                      | 0.05                       |               | PESD1CAN     | SOT23<br>          | 2.9 x 1.3 x 1.0   |
|   |                              | 25                  | 30                  | 5                          | 41                              | 30                      | 0.01                       |               | PESD2CAN     |                    |                   |
|   |                              | 11                  | 17                  | 3                          | 70                              | 23                      | 0.05                       |               |              | PESD1FLEX          |                   |
|   |                              | 9.3                 | 12                  | 3                          | 50                              | 23                      | 0.05                       |               |              | PESD1CAN-U         |                   |
| 1                                       | 26.5                         | 8.5                 | 11                  | 3                          | 53                              | 23                      | 0.05                       |               | PESD1IVN-U   | SOT323<br>         | 2.0 x 1.25 x 0.95 |
| 2                                       |                              |                     |                     |                            |                                 |                         |                            |               | PESD2IVN-U   |                    |                   |

[1] 8 / 20 μs surge pulse according to IEC 61000-4-5

[2] according to IEC 61000-4-2 (contact discharge)

## Battery and charger port protection

Types in **bold** represent new products

| Number of protected lines | C <sub>line</sub> (pF) | V <sub>RWM</sub> (V) | I <sub>PPM</sub> 8/20μs (A) | Type                | Package   | Size (mm)         |
|---------------------------|------------------------|----------------------|-----------------------------|---------------------|---|-------------------|
| 1 x bi                    | 65                     | 3.3                  | 34                          | <b>PTVS3V3D1BAL</b> | DFN1006-2<br>            | 1.0 x 0.6 x 0.48  |
|                           | 65                     | 4.5                  | 34                          | PTVS4V5D1BL         |   |                   |
|                           | 70                     | 5.5                  | 35                          | <b>PTVS5V5D1BL</b>  |   |                   |
| 1 x uni                   | 160                    | 12                   | 22.5                        | PESD12VS1UJ         | SOD323F (SC-90)   | 1.7 x 1.25 x 0.7  |
|                           | 480                    | 5                    | 22.5                        | PESD5V0S1UJ         |                          |                   |
|                           | 160                    | 12                   | 47                          | PESD12VS1UA         | SOD323 (SC-76)  | 1.7 x 1.25 x 0.95 |
|                           | 480                    | 5                    | 47                          | PESD5V0S1UA         |                          |                   |
| 2 x bi                    | 18                     | 5                    | 9                           | PESD5V0V2BM         | DFN1006-3 (SOT883)<br>   | 1.0 x 0.6 x 0.48  |
|                           | 18                     | 5                    | 9                           | PESD5V0V2BMB        | DFN1006B-3 (SOT883B)<br> | 1.0 x 0.6 x 0.37  |
|                           | 35                     | 5                    | 15                          | PESD5V0S2BQA        | DFN1010D-3 (SOT1215)<br> | 1.1 x 1.0 x 0.37  |

## HDMI and display port protection

| Interface    | Number of protected lines | C <sub>line</sub> (pF) | Remark  | Type           | Package  | Size (mm)         |
|--------------|---------------------------|------------------------|---|----------------|--|-------------------|
| Display port | 4                         | 0.6                    | ESD protection for ultra high-speed interfaces          | IP4283CZ10-TBR | DFN2510A-10 (SOT1176)<br> | 2.5 x 1.0 x 0.48  |
|              |                           | 0.55                   | ESD protection for ultra high-speed interfaces          | IP4292CZ10-TBR |  |                   |
|              |                           | 0.5                    | ESD protection for ultra high-speed interfaces          | IP4294CZ10-TBR |  |                   |
|              |                           |                        | ESD protection for ultra high-speed interfaces          | PHDMI2F4       |  |                   |
|              |                           | 0.27                   | ESD protection for ultra high-speed interfaces          | PHDMI2FR4      |  |                   |
|              |                           | 0.17                   | ESD protection for ultra high-speed interfaces          | PHDMI2AB4      |  |                   |
| HDMI         | 4                         | 0.6                    | ESD protection for ultra high-speed interfaces          | IP4283CZ10-TBR | DFN2510A-10 (SOT1176)<br> | 2.5 x 1.0 x 0.48  |
|              |                           | 0.55                   | ESD protection for ultra high-speed interfaces          | IP4292CZ10-TBR |  |                   |
|              |                           | 0.5                    | ESD protection for HDMI 2.0                             | PHDMI2F4       |  |                   |
|              |                           |                        | ESD protection for ultra high-speed interfaces          | IP4294CZ10-TBR |  |                   |
|              |                           | 0.27                   | ESD protection for ultra high-speed interfaces          | PHDMI2FR4      |  |                   |
|              |                           | 0.17                   | ESD protection for ultra high-speed interfaces          | PHDMI2AB4      |  |                   |
| LVDS         | 4                         | 0.8                    | Very low clamp ESD protection with 12 kV IEC ruggedness | PUSB2X4D       | SOT457 (SC-74)<br>        | 2.9 x 1.5 x 1.0   |
|              |                           | 0.8                    | Very low clamp ESD protection with 12 kV IEC ruggedness | PUSB2X4Y       | SOT363 (SC-88)<br>        | 2.0 x 1.25 x 0.95 |

ESD protection, TVS, filtering and signal conditioning

## Antenna protection (NFC, WiFi,...)

Products in **bold red** are under development

| Number of protected lines (Bidirectional) | $V_{RWM}$ [V] | $C_{line}$ typ [pF] | $C_{line}$ max [pF] | ESD rating <sup>(1)</sup> max [kV] | Configuration | Type         | Package            | Size             |
|---|---------------|---------------------|---------------------|------------------------------------|---------------|--------------|--------------------|------------------|
| 1   | 18            | 0.28                | 0.45                | 10                                 |               | PESD18VF1BSF | DSN0603-2 (SOD962) | 0.6 x 0.3 x 0.3  |
|   |               |                     |                     |                                    |               | PESD1NFC-SF  |                    |                  |
|   |               | 0.35                | 0.5                 | 10                                 |               | PESD18VF1BL  | DFN1006-2 (SOD882) | 1.0 x 0.6 x 0.48 |
|   |               |                     |                     |                                    |               | PESD1NFC-L   |                    |                  |
|   | 24            | 0.25                | 0.4                 | 10                                 |               | PESD24VF1BSF | DSN0603-2 (SOD962) | 0.6 x 0.3 x 0.3  |
|   |               |                     |                     |                                    |               | PESD2NFC-SF  |                    |                  |
|   |               | 0.3                 | 0.45                | 10                                 |               | PESD24VF1BL  | DFN1006-2 (SOD882) | 1.0 x 0.6 x 0.48 |
|   |               |                     |                     |                                    |               | PESD2NFC-L   |                    |                  |
| 30  | 0.27          |                     | 10                  | <b>PESD30VF1BL</b>                 |               |              |                    |                  |

<sup>(1)</sup> according to IEC 61000-4-2 (contact discharge)

## USB and SATA protection

| Interface  | Number of protected lines | $R_{line}$ | $C_{line}$ (pF) | Remark  | Type  | Package             | Size (mm)         |                   |
|--|---------------------------|------------|-----------------|---|---|---------------------|-------------------|-------------------|
| USB2.0 (Plastic package)                                     | 2                         | -          | 1.0             | ESD protection for up to 2 ultra high-speed datalines                           | PRTR5V0U2X  | SOT143B             | 2.9 x 1.3 x 1.0   |                   |
|  |                           |            | 1.8             | ESD protection for up to 2 ultra high-speed datalines with 12 kV ESD robustness | PRTR5V0U2AX   |                     |                   |                   |
|  |                           |            |                 | ESD protection for up to 2 ultra high-speed datalines                           | PRTR5V0U2F  | DFN1410-6 (SOT886)  | 1.45 x 1.0 x 0.48 |                   |
|  |                           |            |                 | USB protection for USB OTG with 5.5 V Vbat protection                           | PUSBM5V5X4-TL   | DFN1616-6 (SOT1189) | 1.6 x 1.6 x 0.48  |                   |
|  | 3 + 1                     |            |                 |   | USB protection for USB OTG with 12 V Vbat protection                              | PUSBM12VX4-TL       |                   |                   |
|  |                           |            | 4               | 0.8   | Very low clamp ESD protection for USB2.0 high-speed with 12 kV IEC ESD protection | PUSB2X4Y            | SOT363 (SC-88)    | 2.0 x 1.25 x 0.95 |
|  |                           |            |                 | 1   | Very low clamp ESD protection for USB2.0 high-speed with 12 kV IEC ESD protection | PUSB2X4D            | SOT457 (SC-74)    | 2.9 x 1.5 x 1.0   |
|  |                           |            |                 |   | Dual ESD protection for USB2.0 high-speed, SD-card, SIM card                      | IP4220CZ6           |                   |                   |
| Dual ESD protection for USB2.0 high-speed, SD-card, SIM card | PRTR5V0U4D                |            |                 |   |   |                     |                   |                   |

## Common mode filter for USB 2.0
















| Interface | Number of protected lines | $C_{line}$ (pF) | ESD rating max (kV) <sup>(1)</sup> | Remark   | Type      | Package | Size (mm)          |
|-----------|---------------------------|-----------------|------------------------------------|--|-----------|---------|--------------------|
| USB2.0    | 2                         | 1.5             | 15                                 | Common Mode filter with ESD protection for high-speed interfaces such as USB 2.0 | IP3319CX6 | WLCSP6  | 1.34 x 0.95 x 0.57 |

<sup>(1)</sup> according to IEC 61000-4-2 (contact discharge)



## Common mode filter for USB 3.x




Products in **bold red** are under development, types in **bold** represent new products

| Interface | Number of protected line pairs | Type                 | Differential Mode 3dB frequency | Common Mode rejection 800 MHz - 10 GHz | $C_d$ typical | $V_{RWM}$ | ESD rating | Channel series resistance | Package   | Size (mm)       |
|-----------|--------------------------------|----------------------|---------------------------------|--|---------------|-----------|------------|---------------------------|---|-----------------|
| USB3.x    | 1                              | <b>PCMF1USB3BA/C</b> | ~ 10 GHz                        |  | 0.25          | 4         | 15         | 3                         |    | 0.8 x 1.2 x 0.5 |
|           | 2                              | <b>PCMF2USB3BA/C</b> |                                 |  |               |           |            |                           |    | 1.6 x 1.2 x 0.5 |
|           | 3                              | <b>PCMF3USB3BA/C</b> |                                 |  |               |           |            |                           |    | 2.4 x 1.2 x 0.5 |
|           | 1                              | PCMF1USB3B/C         | 8.1 GHz                         | >12                                    | 0.3           | 4         | 20         | 3                         |    | 0.8 x 1.2 x 0.5 |
|           | 2                              | PCMF2USB3B/C         |                                 |  |               |           |            |                           |    | 1.6 x 1.2 x 0.5 |
|           | 3                              | PCMF3USB3B/C         |                                 |  |               |           |            |                           |    | 2.4 x 1.2 x 0.5 |
|           | 1                              | PCMF1USB3S           | 6 GHz                           | >12                                    | 0.3           | 5         | 15         | 3                         |    | 0.8 x 1.2 x 0.5 |
|           | 2                              | PCMF2USB3S           |                                 |  |               |           |            |                           |    | 1.6 x 1.2 x 0.5 |
|           | 3                              | PCMF3USB3S           |                                 |  |               |           |            |                           |  | 2.4 x 1.2 x 0.5 |
|           | 1                              | <b>PESD1USB3B</b>    | 16.1 GHz                        | ESD protection in PCMF footprint       | 0.3           | 4         | 20         | -                         |  | 0.8 x 1.2 x 0.5 |
|           | 2                              | <b>PESD2USB3B</b>    |                                 |  |               |           |            |                           |  | 1.6 x 1.2 x 0.5 |
|           | 3                              | <b>PESD3USB3B</b>    |                                 |  |               |           |            |                           |  | 2.4 x 1.2 x 0.5 |
|           | 1                              | PESD1USB3S           | 17 GHz                          | ESD protection in PCMF footprint       | 0.5           | 5         | 15         | -                         |  | 0.8 x 1.2 x 0.5 |
|           | 2                              | PESD2USB3S           |                                 |  |               |           |            |                           |  | 1.6 x 1.2 x 0.5 |
|           | 3                              | PESD3USB3S           |                                 |  |               |           |            |                           |  | 2.4 x 1.2 x 0.5 |

<sup>†1</sup> according to IEC 61000-4-2 (contact discharge)

ESD protection, TVS, filtering and signal conditioning

## Common mode filter for HDMI and MIPI

| Interface | Number of protected line pairs unidirectional | Type        | Differential Mode 3 dB frequency (typ.) | $C_d$ pF typical | $V_{RWM}$ | ESD rating <sup>†1</sup> max (kV) | Channel series resistance | Package   | Size (mm)       |
|-----------|---|-------------|---|------------------|-----------|-----------------------------------|---------------------------|---|-----------------|
| HDMI2.0   | 1   | PCMF1HDMI2S | >6 GHz                                  | 0.3              | 5         | 15                                | 3 Ω                       |  | 0.8 x 1.2 x 0.5 |
|           | 2   | PCMF2HDMI2S |   |                  |           |                                   |                           |  | 1.6 x 1.2 x 0.5 |
|           | 3   | PCMF3HDMI2S |   |                  |           |                                   |                           |  | 2.4 x 1.2 x 0.5 |

<sup>†1</sup> according to IEC 61000-4-2 (contact discharge)

## HDMI signal conditioning

| Interface  | Number of protected lines | Buffer | Level shifter | $C_{line}$ (pF)                     | Resistor ( $\Omega$ ) | LDO | Remark  | Type         | Package             | Size (mm)        |
|------------|---------------------------|--------|---------------|-------------------------------------|-----------------------|-----|---|--------------|---------------------|------------------|
| HDMI2.0 Tx | 13                        | yes    | yes           | 100 $\Omega$ differential impedance | integrated            | -   | Fully integrated HDMI source solution with current limiter, buffer, and level shifter for DDC, CEC, and Hot Plug                          | IP4786CZ32   | DFN5050-32 (SOT617) | 5.0 x 5.0 x 0.85 |
|            |                           |        |               |                                     |                       |     | Fully integrated HDMI source solution with enhanced ESD protection, current limiter, buffer, and level shifter for DDC, CEC, and Hot Plug | IP4788CZ32   |                     |                  |
| SD3.0      | 6                         | yes    | yes           | -                                   | internal              | LDO | SD 3.0-compliant memory card with integrated dual voltage-level translator with EMI filter and ESD protection                             | IP4856CX25/C | WLCSP25             | 2.4 x 2.4 x 0.4  |

## LCD and camera RC filter with integrated protection

| Number of protected lines | Line small-signal equivalents |                 |                 | Digital interface clock speed (MHz) | Insertion loss S21 ~ -3 dB (MHz) | Type             | Package              | Size (mm)         |
|---------------------------|-------------------------------|-----------------|-----------------|-------------------------------------|----------------------------------|------------------|----------------------|-------------------|
|                           | $R_{line}$ ( $\Omega$ )       | $C_{line}$ (pF) | $L_{line}$ (nH) |                                     |                                  |                  |                      |                   |
| 4                         | 40                            | 18              | -               | ~100                                | 300                              | IP4252CZ8-4-TTL  | DFN1714-8 (SOT1166)  | 1.7 x 1.35 x 0.52 |
|                           | 100                           | 45              | -               | ~40                                 | 130                              | IP4254CZ8-4-TTL  |                      |                   |
| 8                         | 40                            | 18              | -               | ~100                                | 300                              | IP4252CZ16-8-TTL | DFN3314-16 (SOT1168) | 3.3 x 1.35 x 0.53 |
|                           | 100                           | 45              | -               | ~40                                 | 130                              | IP4254CZ16-8-TTL |                      |                   |
|                           |                               | 15              | -               | ~110                                | 330                              | IP4251CZ16-8-TTL |                      |                   |



## Memory and SIM card filter with integrated protection

Types in **bold** represent new products


| Interface | Number of protected lines | Line small-signal equivalents |                 | Digital interface clock speed (MHz) | Remark  | Type                | Package             | Size (mm)         |
|-----------|---------------------------|-------------------------------|-----------------|-------------------------------------|---|---------------------|---------------------|-------------------|
|           |                           | $R_{line}$                    | $C_{line}$ (pF) |                                     |   |                     |                     |                   |
| SIM card  | 3                         | 47 $\Omega$ / 100 $\Omega$    | 20              | ~20                                 | Integrated SIM-card EMI filter and ESD protection                   | IP4264CZ8-20-TTL    | DFN1714-8 (SOT1166) | 1.7 x 1.35 x 0.52 |
| SD 3.0    | 6                         | -                             | 0.27            | 5000                                | 6-line bidirectional ESD protection for ultra high-speed interfaces | PUSB3TB6            | DFN2111-7 (SOT1358) | 2.1 x 1.1 x 0.5   |
|           |                           |                               | 0.35            |                                     |   | PUSB3FR6            |                     |                   |
|           |                           |                               | 0.15            |                                     |   | PUSB3AB6            |                     |                   |
| SD 3.0    | 4                         | -                             | 0.75            |                                     | 4-line unidirectional ESD protection                                | <b>PESD3V3X4UHM</b> | DFN1308-6           | 1.3 x 0.8 x 0.4   |

## TVS diodes for mobile applications

Types in **bold** represent new products

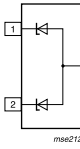

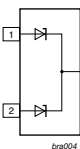
| $P_{RWM}$<br>10/1000µs | $V_{RWM}$ | $V_{BR}$ min | $V_{BR}$ max | $I_{ppm}$ 8/20µs | $V_{CL}$ 8/20µs | $I_{ppm}$ 10/1000µs | $V_{CL}$ 10/1000µs | Type                | Package  | Size             |
|------------------------|-----------|--------------|--------------|------------------|-----------------|---------------------|--------------------|---------------------|--|------------------|
| 300                    | 3.3       | 4.7          | -            | 34               | 13.2            | -                   | -                  | <b>PTVS3V3D1BAL</b> | DFN1006-2 (SOD882)<br>  | 1.0 x 0.6 x 0.48 |
|                        | 4.5       | 4.7          | -            | 34               | 13.2            | -                   | -                  | PTVS4V5D1BL         |  |                  |
|                        | 5.5       | 5.6          | 7.6          | 35               | 12.2            | -                   | -                  | <b>PTVS5V5D1BL</b>  |  |                  |
|                        | 7.5       | 8.33         | 9.21         | 178              | 19.7            | 23.3                | 12.9               | PTVS7V5U1UPA        | DFN2020-3 (SOT1061)<br> | 2.0 x 2.0 x 0.62 |
|                        | 10        | 11.1         | 12.3         | 148              | 23              | 17.6                | 17                 | PTVS10VU1UPA        |  |                  |
|                        | 12        | 13.3         | 14.7         | 131              | 25.2            | 15.1                | 19.9               | PTVS12VU1UPA        |  |                  |
|                        | 15        | 16.7         | 18.5         | 111              | 28.8            | 12.3                | 24.4               | PTVS15VU1UPA        |  |                  |
|                        | 18        | 20           | 22.1         | 97               | 32              | 10.3                | 29.2               | PTVS18VU1UPA        |  |                  |
|                        | 20        | 22.2         | 24.5         | 98.5             | 38.7            | 9.2                 | 32.5               | PTVS20VU1UPA        |  |                  |
|                        | 22        | 24.4         | 26.9         | 88.5             | 41              | 8.4                 | 35.5               | PTVS22VU1UPA        |  |                  |
|                        | 24        | 26.7         | 29.5         | 79               | 44.2            | 7.7                 | 38.8               | PTVS24VU1UPA        |  |                  |
|                        | 26        | 28.9         | 31.9         | 69               | 43.5            | 7                   | 43                 | PTVS26VU1UPA        |  |                  |

## TVS diodes for mobile applications

| $V_{RWM}$ (V) | $V_{BR}$ min (V) | $V_{BR}$ max (V) | 8/20µs pulse                        |                      | 10/1000µs pulse                        |                         | $I_{fm}$ typ @ $V_{RWM}$ (nA) | $I_{fm}$ max @ $V_{RWM}$ (nA) | $R_{dyn}$ (TLP) - 8/20µs | Type          | Package   | Size             |
|---------------|------------------|------------------|-------------------------------------|----------------------|--|-------------------------|-------------------------------|-------------------------------|--------------------------|---------------|---|------------------|
|               |                  |                  | $V_{cl}$ @ $I_{ppm}$ 8/20µs (V) max | $I_{ppm}$ 8/20µs (A) | $V_{cl}$ @ $I_{ppm}$ 10/1000µs (V) max | $I_{ppm}$ 10/1000µs (A) |                               |                               |                          |               |   |                  |
| 5             | 6.4              | 7.8              | 19.4                                | 100                  | 12                                     | 20                      | 25                            | 1000                          | 0.1                      | PTVS5V0Z1USKP | DSN1608-2 (SOD964)<br> | 1.6 x 0.8 x 0.27 |
|               |                  |                  | 18                                  | 80                   | 12                                     | 20                      | 25                            | 1000                          | 0.06                     | PTVS5V0Z1USK  |   |                  |
| 7.5           | 8.33             | 9.65             | 22                                  | 100                  | 13.5                                   | 17                      | 1                             | 200                           | 0.08                     | PTVS7V5Z1USK  |   |                  |
| 10            | 11.1             | 12.9             | 27                                  | 75                   | 18.2                                   | 12.5                    | 0.1                           | 200                           | 0.11                     | PTVS10VZ1USK  |   |                  |
| 12            | 13.3             | 15.4             | 29                                  | 65                   | 21.8                                   | 10.5                    | 0.1                           | 200                           | 0.11                     | PTVS12VZ1USK  |   |                  |
| 15            | 16.7             | 19.4             | 36                                  | 52                   | 27.4                                   | 7.5                     | 0.1                           | 200                           | 0.13                     | PTVS15VZ1USK  |   |                  |
| 18            | 20               | 23.2             | 44                                  | 41                   | 32.8                                   | 6.4                     | 0.1                           | 200                           | 0.17                     | PTVS18VZ1USK  |   |                  |
| 20            | 22.2             | 25.4             | 48.3                                | 41                   | 36.9                                   | 6                       | 1                             | 200                           | 0.2                      | PTVS20VZ1USK  |   |                  |
| 22            | 24.4             | 26.9             | 51                                  | 39                   | 40                                     | 5                       | 0.1                           | 200                           | 0.2                      | PTVS22VZ1USK  |   |                  |
| 26            | 28.9             | 33.4             | 57.5                                | 32                   | 46                                     | 4.5                     | 0.1                           | 200                           | 0.15                     | PTVS26VZ1USK  |   |                  |


ESD protection, TVS, filtering and signal conditioning

## TVS diodes, 24 W/40 W (automotive)

| Power (W) (10/1000 µs waveform) [1] | $V_{RWM}$ (V) | $V_{BR}$ min (V) @ $I_R$ | $V_{BR}$ typ (V) @ $I_R$ | $V_{BR}$ max (V) @ $I_R$ | $I_R$ (mA) | ESD rating max (kV) [1] | $C_{line}$ typ (pF) | $V_{CL}$ max (V) @ $I_{pp}$ [1] | $I_{pp}$ (A) [1] | $I_{RWM}$ max (µA) @ $V_{RWM}$ | Configuration  | Type   | Package  | Size (mm)       |           |            |
|-------------------------------------|---------------|--------------------------|--------------------------|--------------------------|------------|-------------------------|---------------------|---------------------------------|------------------|--------------------------------|--|--|--|-----------------|-----------|------------|
| 24                                  | 3             | 5.32                     | 5.6                      | 5.88                     | 20         | 30                      | 210                 | 8                               | 3                | 5                              | <br>mbz212 | MMBZ5V6AL  | SOT23<br> | 2.9 x 1.3 x 1.0 |           |            |
|                                     |               | 5.89                     | 6.2                      | 6.51                     | 1          | 30                      | 175                 | 8.7                             | 2.76             | 0.2                            |  | MMBZ6V2AL  |  |                 |           |            |
|                                     | 4.5           | 6.48                     | 6.8                      | 7.14                     | 1          | 30                      | 150                 | 9.6                             | 2.5              | 0.3                            |  | MMBZ6V8AL  |  |                 |           |            |
|                                     | 6             | 8.65                     | 9.1                      | 9.56                     | 1          | 30                      | 155                 | 14                              | 1.7              | 0.1                            |  | MMBZ9V1AL  |  |                 |           |            |
|                                     | 6.5           | 9.5                      | 10                       | 10.5                     | 1          | 30                      | 130                 | 14.2                            | 1.7              | 0.02                           |  | MMBZ10VAL  |  |                 |           |            |
| 40                                  | 8.5           | 11.4                     | 12                       | 12.6                     | 1          | 30                      | 110                 | 17                              | 2.35             | 0.005                          |  | <br>mbz004 |  |                 | MMBZ12VAL |            |
|                                     |               | 12                       | 14.25                    | 15                       | 15.75      | 1                       | 30                  | 85                              | 21               | 1.9                            |  |  |  |                 | 0.005     | MMBZ15VAL  |
|                                     |               | 13                       | 15.2                     | 16                       | 16.8       | 1                       | 30                  | 76                              | 23               | 1.9                            |  |  |  |                 | 0.005     | MMBZ16VAL  |
|                                     |               | 13                       | 15.68                    | 16                       | 16.32      | 1                       | 30                  | 76                              | 23               | 1.9                            |  |  |  |                 | 0.005     | MMBZ16VTAL |
|                                     |               | 14.5                     | 17.1                     | 18                       | 18.9       | 1                       | 30                  | 70                              | 25               | 1.6                            |  |  |  |                 | 0.005     | MMBZ18VAL  |
|                                     |               | 17                       | 19                       | 20                       | 21         | 1                       | 30                  | 65                              | 28               | 1.4                            |  |  |  |                 | 0.005     | MMBZ20VAL  |
|                                     |               | 22                       | 25.65                    | 27                       | 28.35      | 1                       | 30                  | 48                              | 40               | 1                              |  |  |  |                 | 0.005     | MMBZ27VAL  |
|                                     |               | 26                       | 31.35                    | 33                       | 34.65      | 1                       | 30                  | 45                              | 46               | 0.87                           |  |  |  |                 | 0.005     | MMBZ33VAL  |
|                                     |               | 8.5                      | 11.4                     | 12                       | 12.6       | 1                       | 30                  | 110                             | 17               | 2.35                           |  |  |  |                 | 0.005     | MMBZ12VDL  |
|                                     |               | 12.8                     | 14.3                     | 15                       | 15.8       | 1                       | 30                  | 85                              | 21.2             | 1.9                            |  |  |  |                 | 0.005     | MMBZ15VDL  |
|                                     |               | 14.5                     | 17.1                     | 18                       | 18.9       | 1                       | 30                  | 70                              | 25               | 1.6                            | 0.005  |  | MMBZ18VCL  |                 |           |            |
|                                     |               | 17                       | 19                       | 20                       | 21         | 1                       | 30                  | 65                              | 28               | 1.4                            | 0.005  |  | MMBZ20VCL  |                 |           |            |
|                                     |               | 22                       | 25.65                    | 27                       | 28.35      | 1                       | 30                  | 48                              | 38               | 1                              | 0.005  |  | MMBZ27VCL  |                 |           |            |
|                                     |               | 26                       | 31.35                    | 33                       | 34.65      | 1                       | 30                  | 45                              | 46               | 0.87                           | 0.005  |  | MMBZ33VCL  |                 |           |            |

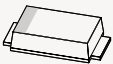
# Transient voltage surge suppressor (TVS)

## TVS diodes, 400 W

| Power (W)<br>(10/1000<br>µs waveform) <sup>[1]</sup> | V <sub>RWM</sub> (V) | V <sub>BR</sub> min (V) @ I <sub>R</sub> | V <sub>BR</sub> typ (V) @ I <sub>R</sub> | V <sub>BR</sub> max (V) @ I <sub>R</sub> | I <sub>R</sub> (mA) | V <sub>CL</sub> max (V) @ I <sub>PP</sub> <sup>[1]</sup> | I <sub>PP</sub> (A) <sup>[1]</sup> | I <sub>RM</sub> typ (µA) @ V <sub>RWM</sub> | I <sub>RM</sub> max (µA) @ V <sub>RWM</sub> | Type<br>(T <sub>J</sub> max = 150 °C) | Type<br>(T <sub>J</sub> max = 185 °C) | Package   | Size (mm)       |
|--|----------------------|--|--|--|---------------------|--|------------------------------------|---|---|---------------------------------------|---------------------------------------|---|-----------------|
| 350  | 3.5                  | 5.20                                     | 5.60                                     | 6.00                                     | 10                  | 8.0  | 43.8                               | 5   | 600   | PTVS3V3S1UR                           | PTVS3V3S1UTR                          |   |                 |
| 400  | 5.0                  | 6.40                                     | 6.70                                     | 7.00                                     | 10                  | 9.2  | 43.5                               | 5   | 400   | PTVS5V0S1UR                           | PTVS5V0S1UTR                          |   |                 |
|  | 6.0                  | 6.67                                     | 7.02                                     | 7.37                                     | 10                  | 10.3   | 38.8                               | 5   | 400   | PTVS6V0S1UR                           | PTVS6V0S1UTR                          |   |                 |
|  | 6.5                  | 7.22                                     | 7.60                                     | 7.98                                     | 10                  | 11.2   | 35.7                               | 5   | 250   | PTVS6V5S1UR                           | PTVS6V5S1UTR                          |   |                 |
|  | 7.0                  | 7.78                                     | 8.20                                     | 8.60                                     | 10                  | 12.0   | 33.3                               | 3   | 100   | PTVS7V0S1UR                           | PTVS7V0S1UTR                          |   |                 |
|  | 7.5                  | 8.33                                     | 8.77                                     | 9.21                                     | 1                   | 12.9   | 31.0                               | 0.2   | 50  | PTVS7V5S1UR                           | PTVS7V5S1UTR                          |   |                 |
|  | 8.0                  | 8.89                                     | 9.36                                     | 9.83                                     | 1                   | 13.6   | 29.4                               | 0.03  | 25  | PTVS8V0S1UR                           | PTVS8V0S1UTR                          |   |                 |
|  | 8.5                  | 9.44                                     | 9.92                                     | 10.40                                    | 1                   | 14.4   | 27.8                               | 0.01  | 10  | PTVS8V5S1UR                           | PTVS8V5S1UTR                          |   |                 |
|  | 9.0                  | 10.00                                    | 10.55                                    | 11.10                                    | 1                   | 15.4   | 26.0                               | 0.005                                       | 5   | PTVS9V0S1UR                           | PTVS9V0S1UTR                          |   |                 |
|  | 10                   | 11.10                                    | 11.70                                    | 12.30                                    | 1                   | 17.0   | 23.5                               | 0.005                                       | 2.5   | PTVS10V51UR                           | PTVS10V51UTR                          |   |                 |
|  | 11                   | 12.20                                    | 12.85                                    | 13.50                                    | 1                   | 18.2   | 22.0                               | 0.005                                       | 2.5   | PTVS11V51UR                           | PTVS11V51UTR                          |   |                 |
|  | 12                   | 13.30                                    | 14.00                                    | 14.70                                    | 1                   | 19.9   | 20.1                               | 0.005                                       | 2.5   | PTVS12V51UR                           | PTVS12V51UTR                          |   |                 |
|  | 13                   | 14.40                                    | 15.15                                    | 15.90                                    | 1                   | 21.5   | 18.6                               | 0.001                                       | 0.1   | PTVS13V51UR                           | PTVS13V51UTR                          |   |                 |
|  | 14                   | 15.60                                    | 16.40                                    | 17.20                                    | 1                   | 23.2   | 17.2                               | 0.001                                       | 0.1   | PTVS14V51UR                           | PTVS14V51UTR                          |   |                 |
|  | 15                   | 16.70                                    | 17.60                                    | 18.50                                    | 1                   | 24.4   | 16.4                               | 0.001                                       | 0.1   | PTVS15V51UR                           | PTVS15V51UTR                          |   |                 |
|  | 16                   | 17.80                                    | 18.75                                    | 19.70                                    | 1                   | 26.0   | 15.4                               | 0.001                                       | 0.1   | PTVS16V51UR                           | PTVS16V51UTR                          |   |                 |
|  | 17                   | 18.90                                    | 19.90                                    | 20.90                                    | 1                   | 27.6   | 14.5                               | 0.001                                       | 0.1   | PTVS17V51UR                           | PTVS17V51UTR                          |   |                 |
|  | 18                   | 20.00                                    | 21.00                                    | 22.10                                    | 1                   | 29.2   | 13.7                               | 0.001                                       | 0.1   | PTVS18V51UR                           | PTVS18V51UTR                          | SOD123W   | 2.6 x 1.7 x 1.0 |
|  | 20                   | 22.20                                    | 23.35                                    | 24.50                                    | 1                   | 32.4   | 12.3                               | 0.001                                       | 0.1   | PTVS20V51UR                           | PTVS20V51UTR                          |  |                 |
|  | 22                   | 24.40                                    | 25.60                                    | 26.90                                    | 1                   | 35.5   | 11.3                               | 0.001                                       | 0.1   | PTVS22V51UR                           | PTVS22V51UTR                          |   |                 |
|  | 24                   | 26.70                                    | 28.10                                    | 29.50                                    | 1                   | 38.9   | 10.3                               | 0.001                                       | 0.1   | PTVS24V51UR                           | PTVS24V51UTR                          |   |                 |
| 26   | 28.90                | 30.40                                    | 31.90                                    | 1  | 42.1                | 9.5  | 0.001                              | 0.1   | PTVS26V51UR                                 | PTVS26V51UTR                          |                                       |   |                 |
| 28   | 31.10                | 32.80                                    | 34.40                                    | 1  | 45.4                | 8.8  | 0.001                              | 0.1   | PTVS28V51UR                                 | PTVS28V51UTR                          |                                       |   |                 |
| 30   | 33.30                | 35.10                                    | 36.80                                    | 1  | 48.4                | 8.3  | 0.001                              | 0.1   | PTVS30V51UR                                 | PTVS30V51UTR                          |                                       |   |                 |
| 33   | 36.70                | 38.70                                    | 40.60                                    | 1  | 53.3                | 7.5  | 0.001                              | 0.1   | PTVS33V51UR                                 | PTVS33V51UTR                          |                                       |   |                 |
| 36   | 40.00                | 42.10                                    | 44.20                                    | 1  | 58.1                | 6.9  | 0.001                              | 0.1   | PTVS36V51UR                                 | PTVS36V51UTR                          |                                       |   |                 |
| 40   | 44.40                | 46.80                                    | 49.10                                    | 1  | 64.5                | 6.2  | 0.001                              | 0.1   | PTVS40V51UR                                 | PTVS40V51UTR                          |                                       |   |                 |
| 43   | 47.80                | 50.30                                    | 52.80                                    | 1  | 69.4                | 5.8  | 0.001                              | 0.1   | PTVS43V51UR                                 | PTVS43V51UTR                          |                                       |   |                 |
| 45   | 50.00                | 52.65                                    | 55.30                                    | 1  | 72.7                | 5.5  | 0.001                              | 0.1   | PTVS45V51UR                                 | PTVS45V51UTR                          |                                       |   |                 |
| 48   | 53.30                | 56.10                                    | 58.90                                    | 1  | 77.4                | 5.2  | 0.001                              | 0.1   | PTVS48V51UR                                 | PTVS48V51UTR                          |                                       |   |                 |
| 51   | 56.70                | 59.70                                    | 62.70                                    | 1  | 82.4                | 4.9  | 0.001                              | 0.1   | PTVS51V51UR                                 | PTVS51V51UTR                          |                                       |   |                 |
| 54   | 60.00                | 63.15                                    | 66.30                                    | 1  | 87.1                | 4.6  | 0.001                              | 0.1   | PTVS54V51UR                                 | PTVS54V51UTR                          |                                       |   |                 |
| 58   | 64.40                | 67.80                                    | 71.20                                    | 1  | 93.6                | 4.3  | 0.001                              | 0.1   | PTVS58V51UR                                 | PTVS58V51UTR                          |                                       |   |                 |
| 60   | 66.70                | 70.20                                    | 73.70                                    | 1  | 96.8                | 4.1  | 0.001                              | 0.1   | PTVS60V51UR                                 | PTVS60V51UTR                          |                                       |   |                 |
| 64   | 71.10                | 74.85                                    | 78.60                                    | 1  | 103.0               | 3.9  | 0.001                              | 0.1   | PTVS64V51UR                                 | PTVS64V51UTR                          |                                       |   |                 |

<sup>[1]</sup> 10 / 1000 µs according to IEC 61643-321

TVS diodes, 600 W

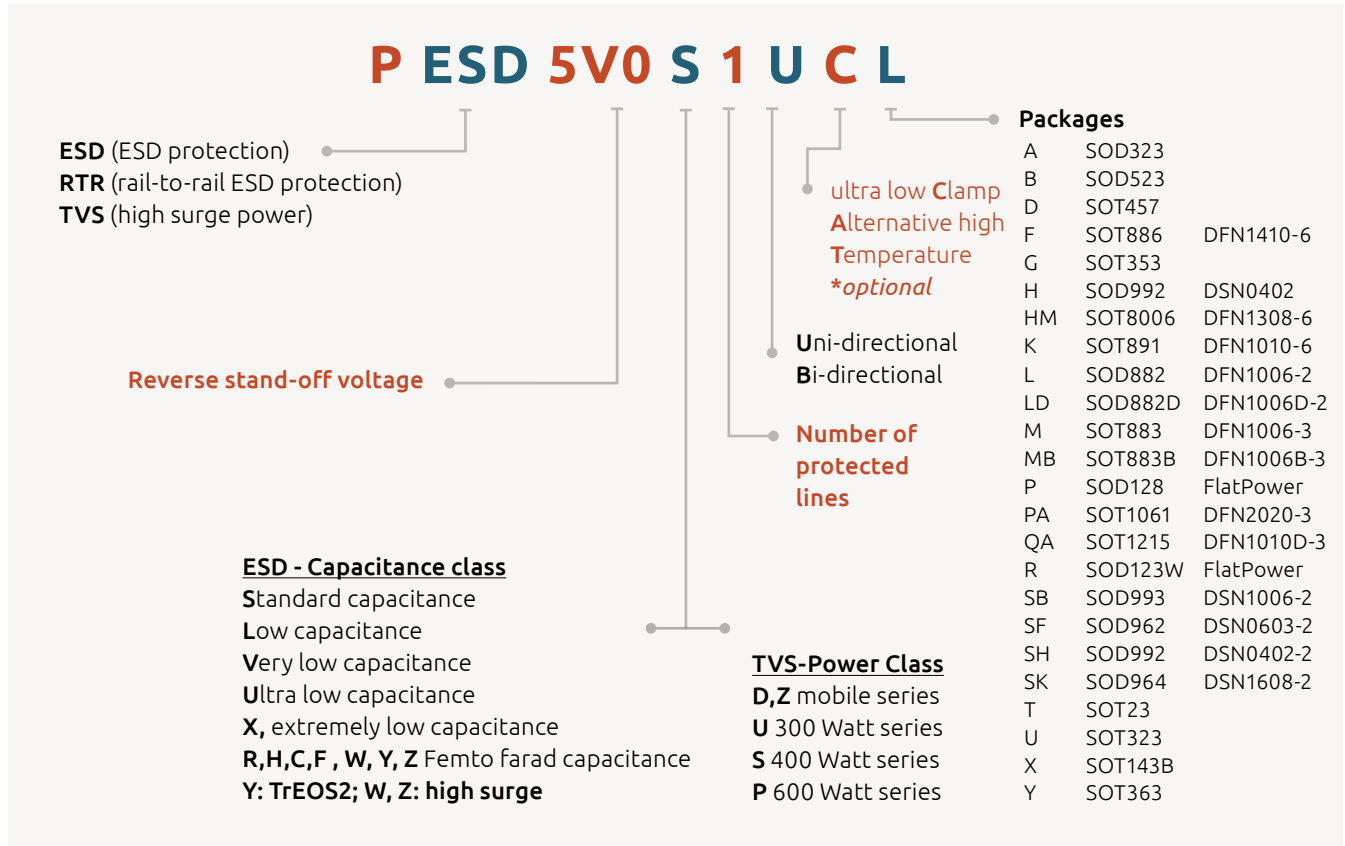
| Power (W)<br>(10 / 1000<br>µs waveform) <sup>(1)</sup> | V <sub>RWM</sub> (V) | V <sub>BR</sub> min (V) @ I <sub>R</sub> | V <sub>BR</sub> typ (V) @ I <sub>R</sub> | V <sub>BR</sub> max (V) @ I <sub>R</sub> | I <sub>R</sub> (mA) | V <sub>CL</sub> max (V) @ I <sub>PP</sub> <sup>(1)</sup> | I <sub>PP</sub> (A) <sup>(1)</sup> | I <sub>RM</sub> typ (µA) @ V <sub>RWM</sub> | I <sub>RM</sub> max (µA) @ V <sub>RWM</sub> | Type<br>(T <sub>J</sub> max = 150 °C) | Type<br>(T <sub>J</sub> max = 185 °C) | Package   | Size (mm)       |
|--|----------------------|--|--|--|---------------------|--|------------------------------------|---|---|---------------------------------------|---------------------------------------|---|-----------------|
| 600  | 3.5                  | 5.20                                     | 5.60                                     | 6.00                                     | 10                  | 8  | 75                                 | 5   | 600   | PTVS3V3P1UP                           | PTVS3V3P1UTP                          |  | 3.8 x 2.6 x 1.0 |
|  | 5                    | 6.40                                     | 6.70                                     | 7.00                                     | 10                  | 9.2  | 65.2                               | 5   | 400   | PTVS5V0P1UP                           | PTVS5V0P1UTP                          |   |                 |
|  | 6                    | 6.67                                     | 7.02                                     | 7.37                                     | 10                  | 10.3   | 58.3                               | 5   | 400   | PTVS6V0P1UP                           | PTVS6V0P1UTP                          |   |                 |
|  | 6.5                  | 7.22                                     | 7.60                                     | 7.98                                     | 10                  | 11.2   | 53.6                               | 5   | 250   | PTVS6V5P1UP                           | PTVS6V5P1UTP                          |   |                 |
|  | 7                    | 7.78                                     | 8.20                                     | 8.60                                     | 10                  | 12   | 50                                 | 3   | 100   | PTVS7V0P1UP                           | PTVS7V0P1UTP                          |   |                 |
|  | 7.5                  | 8.33                                     | 8.77                                     | 9.21                                     | 1                   | 12.9   | 46.5                               | 0.2   | 50  | PTVS7V5P1UP                           | PTVS7V5P1UTP                          |   |                 |
|  | 8                    | 8.89                                     | 9.36                                     | 9.83                                     | 1                   | 13.6   | 44.1                               | 0.03  | 25  | PTVS8V0P1UP                           | PTVS8V0P1UTP                          |   |                 |
|  | 8.5                  | 9.44                                     | 9.92                                     | 10.40                                    | 1                   | 14.4   | 41.7                               | 0.01  | 10  | PTVS8V5P1UP                           | PTVS8V5P1UTP                          |   |                 |
|  | 9                    | 10.00                                    | 10.55                                    | 11.10                                    | 1                   | 15.4   | 39                                 | 0.005                                       | 5   | PTVS9V0P1UP                           | PTVS9V0P1UTP                          |   |                 |
|  | 10                   | 11.10                                    | 11.70                                    | 12.30                                    | 1                   | 17   | 35.3                               | 0.005                                       | 2.5   | PTVS10VP1UP                           | PTVS10VP1UTP                          |   |                 |
|  | 11                   | 12.20                                    | 12.85                                    | 13.50                                    | 1                   | 18.2   | 33                                 | 0.005                                       | 2.5   | PTVS11VP1UP                           | PTVS11VP1UTP                          |   |                 |
|  | 12                   | 13.30                                    | 14.00                                    | 14.70                                    | 1                   | 19.9   | 30.2                               | 0.005                                       | 2.5   | PTVS12VP1UP                           | PTVS12VP1UTP                          |   |                 |
|  | 13                   | 14.40                                    | 15.15                                    | 15.90                                    | 1                   | 21.5   | 27.9                               | 0.001                                       | 0.1   | PTVS13VP1UP                           | PTVS13VP1UTP                          |   |                 |
|  | 14                   | 15.60                                    | 16.40                                    | 17.20                                    | 1                   | 23.2   | 25.9                               | 0.001                                       | 0.1   | PTVS14VP1UP                           | PTVS14VP1UTP                          |   |                 |
|  | 15                   | 16.70                                    | 17.60                                    | 18.50                                    | 1                   | 24.4   | 24.6                               | 0.001                                       | 0.1   | PTVS15VP1UP                           | PTVS15VP1UTP                          |   |                 |
|  | 16                   | 17.80                                    | 18.75                                    | 19.70                                    | 1                   | 26   | 23.1                               | 0.001                                       | 0.1   | PTVS16VP1UP                           | PTVS16VP1UTP                          |   |                 |
|  | 17                   | 18.90                                    | 19.90                                    | 20.90                                    | 1                   | 27.6   | 21.7                               | 0.001                                       | 0.1   | PTVS17VP1UP                           | PTVS17VP1UTP                          |   |                 |
|  | 18                   | 20.00                                    | 21.00                                    | 22.10                                    | 1                   | 29.2   | 20.5                               | 0.001                                       | 0.1   | PTVS18VP1UP                           | PTVS18VP1UTP                          |   |                 |
|  | 20                   | 22.20                                    | 23.35                                    | 24.50                                    | 1                   | 32.4   | 18.5                               | 0.001                                       | 0.1   | PTVS20VP1UP                           | PTVS20VP1UTP                          |   |                 |
|  | 22                   | 24.40                                    | 25.60                                    | 26.90                                    | 1                   | 35.5   | 16.9                               | 0.001                                       | 0.1   | PTVS22VP1UP                           | PTVS22VP1UTP                          |   |                 |
|  | 24                   | 26.70                                    | 28.10                                    | 29.50                                    | 1                   | 38.9   | 15.4                               | 0.001                                       | 0.1   | PTVS24VP1UP                           | PTVS24VP1UTP                          |   |                 |
|  | 26                   | 28.90                                    | 30.40                                    | 31.90                                    | 1                   | 42.1   | 14.2                               | 0.001                                       | 0.1   | PTVS26VP1UP                           | PTVS26VP1UTP                          |   |                 |
|  | 28                   | 31.10                                    | 32.80                                    | 34.40                                    | 1                   | 45.4   | 13.2                               | 0.001                                       | 0.1   | PTVS28VP1UP                           | PTVS28VP1UTP                          |   |                 |
|  | 30                   | 33.30                                    | 35.10                                    | 36.80                                    | 1                   | 48.4   | 12.4                               | 0.001                                       | 0.1   | PTVS30VP1UP                           | PTVS30VP1UTP                          |   |                 |
| 33   | 36.70                | 38.70                                    | 40.60                                    | 1  | 53.3                | 11.3   | 0.001                              | 0.1   | PTVS33VP1UP                                 | PTVS33VP1UTP                          |                                       |   |                 |
| 36   | 40.00                | 42.10                                    | 44.20                                    | 1  | 58.1                | 10.3   | 0.001                              | 0.1   | PTVS36VP1UP                                 | PTVS36VP1UTP                          |                                       |   |                 |
| 40   | 44.40                | 46.80                                    | 49.10                                    | 1  | 64.5                | 9.3  | 0.001                              | 0.1   | PTVS40VP1UP                                 | PTVS40VP1UTP                          |                                       |   |                 |
| 43   | 47.80                | 50.30                                    | 52.80                                    | 1  | 69.4                | 8.6  | 0.001                              | 0.1   | PTVS43VP1UP                                 | PTVS43VP1UTP                          |                                       |   |                 |
| 45   | 50.00                | 52.65                                    | 55.30                                    | 1  | 72.7                | 8.3  | 0.001                              | 0.1   | PTVS45VP1UP                                 | PTVS45VP1UTP                          |                                       |   |                 |
| 48   | 53.30                | 56.10                                    | 58.90                                    | 1  | 77.4                | 7.8  | 0.001                              | 0.1   | PTVS48VP1UP                                 | PTVS48VP1UTP                          |                                       |   |                 |
| 51   | 56.70                | 59.70                                    | 62.70                                    | 1  | 82.4                | 7.3  | 0.001                              | 0.1   | PTVS51VP1UP                                 | PTVS51VP1UTP                          |                                       |   |                 |
| 54   | 60.00                | 63.15                                    | 66.30                                    | 1  | 87.1                | 6.9  | 0.001                              | 0.1   | PTVS54VP1UP                                 | PTVS54VP1UTP                          |                                       |   |                 |
| 58   | 64.40                | 67.80                                    | 71.20                                    | 1  | 93.6                | 6.4  | 0.001                              | 0.1   | PTVS58VP1UP                                 | PTVS58VP1UTP                          |                                       |   |                 |
| 60   | 66.70                | 70.20                                    | 73.70                                    | 1  | 96.8                | 6.2  | 0.001                              | 0.1   | PTVS60VP1UP                                 | PTVS60VP1UTP                          |                                       |   |                 |
| 64   | 71.10                | 74.85                                    | 78.60                                    | 1  | 103                 | 5.8  | 0.001                              | 0.1   | PTVS64VP1UP                                 | PTVS64VP1UTP                          |                                       |   |                 |

ESD protection, TVS, filtering and signal conditioning

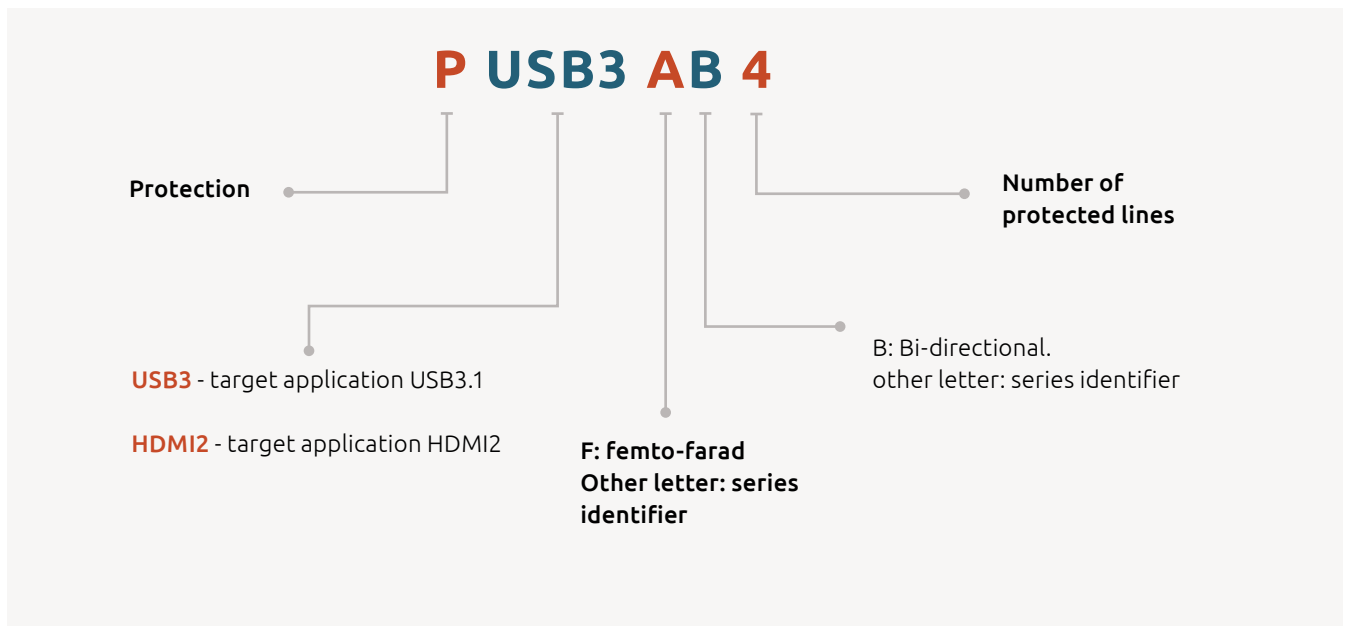
<sup>(1)</sup> 10 / 1000 µs according to IEC 61643-321

## Nomenclatures

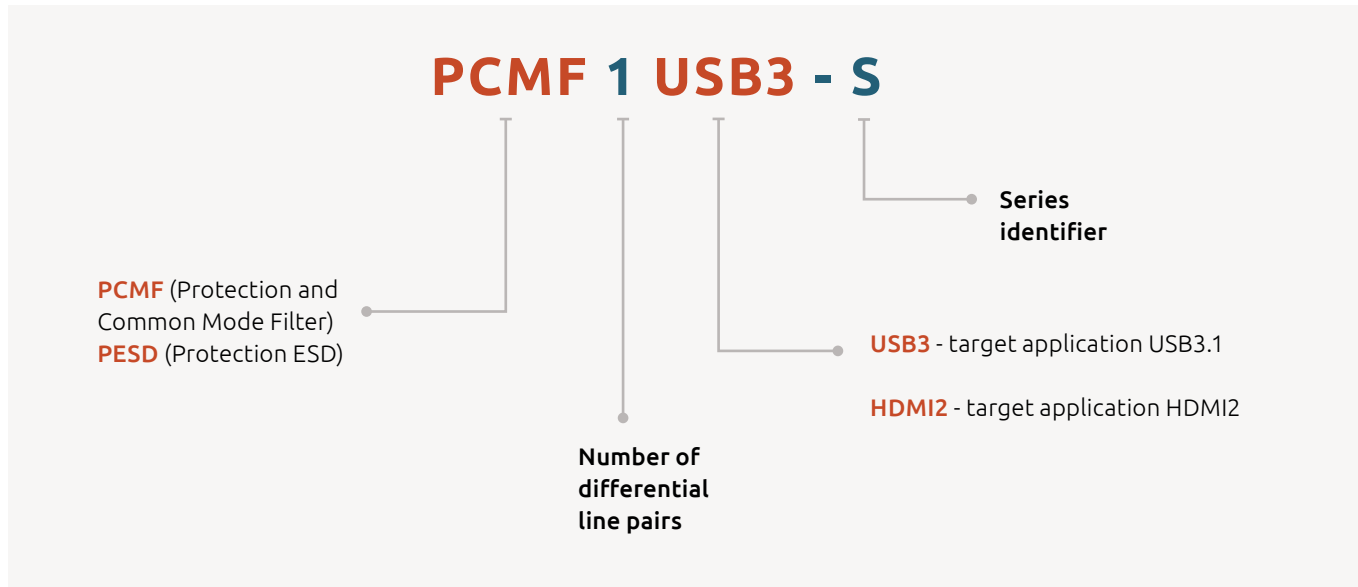
### Nomenclature - protection devices



### Nomenclature - application specific ESD protection



## Nomenclature - common mode filter with ESD protection



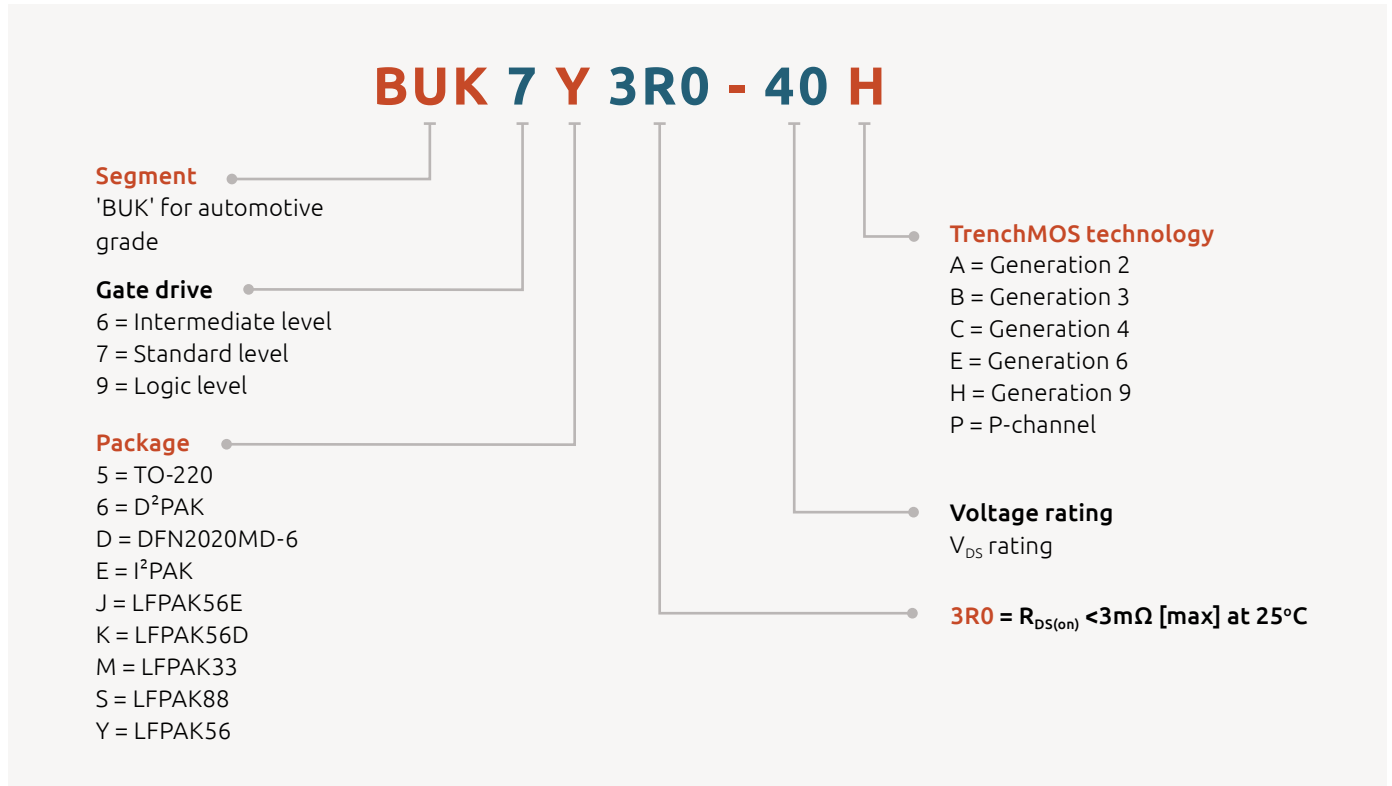
ESD protection, TVS, filtering and signal conditioning





|   |           |
|---|-----------|
| <b>Automotive MOSFETs</b> .....   | <b>74</b> |
| Automotive grade MOSFETs nomenclature.....                                  | 74        |
| N-channel 30V automotive power MOSFETs.....                                 | 74        |
| N-channel 40V automotive power MOSFETs.....                                 | 75        |
| N-channel 55V-60V automotive power MOSFETs.....                             | 77        |
| N-channel 75V-80V automotive power MOSFETs.....                             | 79        |
| N-channel 100V automotive power MOSFETs.....                                | 80        |
| P-channel 30V-60V automotive power MOSFETs.....                             | 81        |
| Small-signal automotive MOSFETs – Low $R_{DS(on)}$ .....                    | 82        |
| Small-signal automotive MOSFETs – High $R_{DS(on)}$ .....                   | 84        |
| Small-signal automotive MOSFETs – Dual.....                                 | 84        |
| Small-signal MOSFETs complementary.....                                     | 84        |
| <b>Power MOSFETs</b> .....  | <b>86</b> |
| N-channel 25V-30V Power MOSFETs.....  | 86        |
| N-channel 40V-60V Power MOSFETs.....  | 88        |
| N-channel 75V-200V Power MOSFETs.....                                       | 90        |
| P-channel Power MOSFETs.....  | 92        |
| Power MOSFETs nomenclature.....   | 93        |
| <b>Small-signal MOSFETs</b> .....   | <b>94</b> |
| Small-signal MOSFETs in DFN1006 and DFN1006B packages.....                  | 94        |
| Small-signal MOSFETs in DFN0606.....  | 94        |
| Small-signal MOSFETs in DFN1010D-3 single and DFN1010B-3 dual packages..... | 95        |
| Small-signal low-leakage MOSFETs.....                                       | 95        |
| Small-signal MOSFETs in DFN2020MD-6 single and DFN2020-6 dual packages..... | 96        |
| Small-signal MOSFETs in WLCSP4 and WLCSP6 packages.....                     | 97        |
| Small-signal MOSFETs single (N-channel).....                                | 98        |
| Small-signal MOSFETs single (P-channel).....                                | 100       |
| Small-signal MOSFET–Schottky combination.....                               | 100       |
| Small-signal MOSFETs dual.....  | 102       |
| Small-signal MOSFETs complementary.....                                     | 102       |
| Small-signal MOSFETs nomenclature.....                                      | 104       |

## Automotive grade MOSFETs nomenclature









## N-channel 30V automotive power MOSFETs

| Package name                | Type number  | V <sub>DS</sub> [max] (V) | R <sub>DS(on)</sub> [max] @ 10 V (mΩ) | R <sub>DS(on)</sub> [max] @ 5 V (mΩ) | I <sub>D</sub> [max] @ 25 °C (A) | R <sub>th(j-mb)</sub> [max] (K/W) |
|-----------------------------|--------------|---------------------------|---------------------------------------|--------------------------------------|----------------------------------|-----------------------------------|
| D <sup>2</sup> PAK (SOT404) | BUK762R7-30B | 30                        | 2.7                                   |                                      | 75                               | 0.5                               |
|                             | BUK763R4-30B | 30                        | 3.4                                   |                                      | 75                               | 0.59                              |
| LFPAK56; Power-SO8 (SOT669) | BUK9Y07-30B  | 30                        | 6                                     | 7                                    | 75                               | 1.42                              |
|                             | BUK7Y07-30B  | 30                        | 7                                     |                                      | 75                               | 1.42                              |
|                             | BUK9Y11-30B  | 30                        | 9                                     | 11                                   | 59                               | 2                                 |
|                             | BUK7Y10-30B  | 30                        | 10                                    |                                      | 67                               | 1.76                              |
|                             | BUK9Y22-30B  | 30                        | 19                                    | 22                                   | 38                               | 2.53                              |
|                             | BUK7Y20-30B  | 30                        | 20                                    |                                      | 40                               | 2.53                              |
| LFPAK56D (SOT1205)          | BUK9K5R1-30E | 30                        | 4.4                                   | 5.3                                  | 40                               | 2.21                              |
|                             | BUK9K5R6-30E | 30                        | 4.7                                   | 5.8                                  | 40                               | 2.36                              |
|                             | BUK7K5R1-30E | 30                        | 5.1                                   |                                      | 40                               | 2.21                              |
|                             | BUK7K5R6-30E | 30                        | 5.6                                   |                                      | 40                               | 2.36                              |
| LFPAK33 (SOT1210)           | BUK9M5R2-30E | 30                        | 4.1                                   | 5.2                                  | 70                               | 1.89                              |
|                             | BUK9M6R6-30E | 30                        | 5.3                                   | 6.6                                  | 70                               | 2                                 |
|                             | BUK9M10-30E  | 30                        | 7.8                                   | 10                                   | 54                               | 2.75                              |
|                             | BUK9M17-30E  | 30                        | 14                                    | 17                                   | 37                               | 3.4                               |

## N-channel 40V automotive power MOSFETs

Types in **bold red** are in development, types in **bold** represent new products




| Package name                      | Type number   | V <sub>DS</sub><br>[max] (V) | R <sub>DS(on)</sub><br>[max]<br>@ 10 V<br>(mΩ) | R <sub>DS(on)</sub><br>[max]<br>@ 5 V<br>(mΩ) | I <sub>D</sub><br>[max]<br>@ 25 °C<br>(A) | R <sub>th(j-mb)</sub><br>[max]<br>(K/W) |      |
|-----------------------------------|---|------------------------------|--|---|---|---|------|
| TO-220AB<br>(SOT78)               |    | BUK751R8-40E                 | 40   | 1.8   |   | 120                                     | 0.43 |
|                                   |   | BUK752R3-40E                 | 40   | 2.3   |   | 120                                     | 0.51 |
|                                   |   | BUK753R1-40E                 | 40   | 3.1   |   | 100                                     | 0.64 |
|                                   |   | BUK758R3-40E                 | 40   | 7.4   |   | 75                                      | 1.56 |
| LFPAK88<br>(SOT1235)              |    | <b>BUK750R7-40H</b>          | 40   | 0.7   |   |   |      |
|                                   |   | <b>BUK750R9-40H</b>          | 40   | 0.9   |   |   |      |
|                                   |   | <b>BUK751R0-40H</b>          | 40   | 1   |   | 325                                     | 0.39 |
| D <sup>2</sup> PAK<br>(SOT404)    |    | BUK961R6-40E                 | 40   | 1.4   | 1.6                                       | 120                                     | 0.43 |
|                                   |   | BUK761R6-40E                 | 40   | 1.6   |   | 120                                     | 0.43 |
|                                   |   | BUK761R7-40E                 | 40   | 1.6   |   | 120                                     | 0.46 |
|                                   |   | BUK762R0-40E                 | 40   | 2   |   | 120                                     | 0.51 |
|                                   |   | BUK962R6-40E                 | 40   | 2.4   | 2.8                                       | 100                                     | 0.57 |
|                                   |   | BUK762R6-40E                 | 40   | 2.6   |   | 100                                     | 0.57 |
|                                   |   | BUK963R1-40E                 | 40   | 2.7   | 3.1                                       | 100                                     | 0.64 |
|                                   |   | BUK762R9-40E                 | 40   | 2.9   |   | 100                                     | 0.64 |
|                                   |   | BUK964R1-40E                 | 40   | 3.5   | 4.1                                       | 75                                      | 0.82 |
|                                   |   | BUK764R0-40E                 | 40   | 4   |   | 75                                      | 0.82 |
|                                   |   | BUK965R4-40E                 | 40   | 4.4   | 5.4                                       | 75                                      | 1.09 |
|                                   |   | BUK765R3-40E                 | 40   | 4.9   |   | 75                                      | 1.09 |
|                                   |   | BUK768R1-40E                 | 40   | 7.2   |   | 75                                      | 1.56 |
| I <sup>2</sup> PAK<br>(SOT226)    |  | BUK7E1R8-40E                 | 40   | 1.8   |   | 120                                     | 0.43 |
|                                   |   | BUK7E1R9-40E                 | 40   | 1.9   |   | 120                                     | 0.46 |
|                                   |   | BUK7E2R3-40E                 | 40   | 2.3   |   | 120                                     | 0.51 |
|                                   |   | BUK7E3R1-40E                 | 40   | 3.1   |   | 100                                     | 0.64 |
|                                   |   | BUK7E8R3-40E                 | 40   | 7.4   |   | 75                                      | 1.56 |
| LFPAK56E<br>(SOT1023)             |  | <b>BUK9J0R9-40H</b>          | 40   | 0.9   | 1.2                                       | 220                                     | 0.3  |
|                                   |   | <b>BUK7J1R0-40H</b>          | 40   | 1   |   | 220                                     | 0.3  |
|                                   |   | BUK7J1R4-40H                 | 40   | 1.4   |   | 120                                     | 0.38 |
| LFPAK56;<br>Power-SO8<br>(SOT669) |  | <b>BUK9Y1R3-40H</b>          | 40   | 1.3   | 1.8                                       | 120                                     | 0.38 |
|                                   |   | <b>BUK7Y1R4-40H</b>          | 40   | 1.4   |   | 190                                     | 0.38 |
|                                   |   | <b>BUK9Y1R6-40H</b>          | 40   | 1.6   | 2.2                                       | 120                                     | 0.51 |
|                                   |   | BUK7Y1R7-40H                 | 40   | 1.7   |   | 120                                     | 0.51 |
|                                   |   | <b>BUK9Y1R9-40H</b>          | 40   | 1.9   | 2.6                                       | 120                                     | 0.69 |
|                                   |   | BUK7Y2R0-40H                 | 40   | 2   |   | 120                                     | 0.69 |
|                                   |   | <b>BUK9Y2R4-40H</b>          | 40   | 2.4   | 3.2                                       | 120                                     | 0.79 |
|                                   |   | BUK9Y3R0-40E                 | 40   | 2.5   | 3   | 100                                     | 0.77 |
|                                   |   | BUK7Y2R5-40H                 | 40   | 2.5   |   | 120                                     | 0.79 |
|                                   |   | <b>BUK9Y2R8-40H</b>          | 40   | 2.8   | 3.9                                       | 120                                     | 0.87 |
|                                   |   | BUK7Y3R0-40H                 | 40   | 3   |   | 120                                     | 0.87 |
|                                   |   | <b>BUK7Y3R5-40H</b>          | 40   | 3.5   |   | 120                                     | 1.3  |
|                                   |   | BUK7Y3R5-40E                 | 40   | 3.5   |   | 100                                     | 0.9  |
|                                   |   | BUK9Y3R5-40E                 | 40   | 3.6   | 3.8                                       | 100                                     | 0.9  |
|                                   |   | BUK9Y4R4-40E                 | 40   | 3.7   | 4.4                                       | 100                                     | 1.02 |
|                                   |   | BUK7Y4R4-40E                 | 40   | 4.4   |   | 100                                     | 1.02 |
|                                   |   | BUK9Y7R6-40E                 | 40   | 6   | 7.6                                       | 79                                      | 1.58 |
|                                   |   | BUK7Y7R6-40E                 | 40   | 7.6   |   | 79                                      | 1.58 |
|                                   |   | BUK9Y12-40E                  | 40   | 10  | 12  | 52                                      | 2.31 |
|                                   |   | BUK7Y12-40E                  | 40   | 12  |   | 52                                      | 2.31 |
|                                   |   | BUK9Y21-40E                  | 40   | 17  | 21  | 33                                      | 3.33 |
|                                   |   | BUK7Y21-40E                  | 40   | 21  |   | 33                                      | 3.33 |
|                                   |   | BUK9Y29-40E                  | 40   | 25  | 29  | 25                                      | 4.03 |
| BUK7Y29-40E                       | 40  | 29                           |  | 26  | 4.03                                      |   |      |

## N-channel 40V automotive power MOSFETs

Products in **bold red** are under development

| Package name          | Type number         | V <sub>DS</sub><br>[max] (V) | R <sub>DS(on)</sub><br>[max]<br>@ 10 V<br>(mΩ) | R <sub>DS(on)</sub><br>[max]<br>@ 5 V<br>(mΩ) | I <sub>D</sub><br>[max]<br>@ 25 °C<br>(A) | R <sub>th(j-mb)</sub><br>[max]<br>(K/W) |
|-----------------------|---------------------|------------------------------|--|---|---|---|
| LFPAK56D<br>(SOT1205) | BUK7K6R2-40E        | 40                           | 5.8  |   | 40  | 2.21                                    |
|                       | BUK9K6R2-40E        | 40                           | 6  | 6.2   | 40  | 2.21                                    |
|                       | BUK9K6R8-40E        | 40                           | 6.1  | 7.2   | 40  | 2.36                                    |
|                       | BUK7K6R8-40E        | 40                           | 6.8  |   |   | 2.36                                    |
|                       | BUK9K8R7-40E        | 40                           | 8  | 9.4   | 30  | 2.84                                    |
|                       | BUK7K8R7-40E        | 40                           | 8.5  |   |   | 2.84                                    |
|                       | BUK9K18-40E         | 40                           | 16   | 20  | 30  | 3.96                                    |
|                       | BUK7K18-40E         | 40                           | 19   |   | 24  | 3.96                                    |
|                       | BUK9K25-40E         | 40                           | 24   | 29  | 18  | 4.68                                    |
|                       | BUK7K25-40E         | 40                           | 25   |   |   | 4.68                                    |
| LFPAK33<br>(SOT1210)  | <b>BUK7M3R3-40H</b> | 40                           | 3.3  |   |   |   |
|                       | <b>BUK9M3R3-40H</b> | 40                           |  | 3.3   |   |   |
|                       | <b>BUK7M4R3-40H</b> | 40                           | 4.3  |   |   |   |
|                       | <b>BUK9M4R3-40H</b> | 40                           |  | 4.3   |   |   |
|                       | <b>BUK7M5R0-40H</b> | 40                           | 5  |   |   |   |
|                       | <b>BUK9M5R0-40H</b> | 40                           |  | 5   |   |   |
|                       | <b>BUK7M6R0-40H</b> | 40                           | 6  |   |   |   |
|                       | <b>BUK9M6R0-40H</b> | 40                           |  | 6   |   |   |
|                       | BUK7M6R3-40E        | 40                           | 6.3  |   | 70  | 1.89                                    |
|                       | <b>BUK7M6R7-40H</b> | 40                           | 6.7  |   |   |   |
|                       | <b>BUK9M6R7-40H</b> | 40                           |  | 6.7   |   |   |
|                       | BUK7M8R0-40E        | 40                           | 8  |   | 69  | 2                                       |
|                       | <b>BUK7M8R5-40H</b> | 40                           | 8  |   |   |   |
|                       | <b>BUK9M8R5-40H</b> | 40                           |  | 8   |   |   |
|                       | BUK7M10-40E         | 40                           | 10   |   | 56  | 2.43                                    |
|                       | BUK7M12-40E         | 40                           | 12   |   | 48  | 2.75                                    |
|                       | <b>BUK7M9R5-40H</b> | 40                           | 9.5  |   |   |   |
|                       | <b>BUK9M9R5-40H</b> | 40                           |  | 9.5   |   |   |
|                       | BUK7M21-40E         | 40                           | 21   |   | 33  | 3.4                                     |
|                       | <b>BUK7M11-40H</b>  | 40                           | 11   |   |   |   |
|                       | <b>BUK9M11-40H</b>  | 40                           |  | 11  |   |   |
|                       | BUK7M45-40E         | 40                           | 45   |   | 19  | 4.8                                     |
|                       | BUK9M14-40E         | 40                           | 11   | 14  | 44  | 2.75                                    |
|                       | BUK9M24-40E         | 40                           | 20   | 24  | 30  | 3.4                                     |
|                       | <b>BUK7M15-40H</b>  | 40                           | 15   |   |   |   |
|                       | <b>BUK9M15-40H</b>  | 40                           |  | 15  |   |   |
|                       | <b>BUK7M20-40H</b>  | 40                           | 20   |   |   |   |
|                       | <b>BUK9M20-40H</b>  | 40                           |  | 20  |   |   |
|                       | BUK9M52-40E         | 40                           | 40   | 52  | 18  | 4.8                                     |
|                       | BUK9M7R2-40E        | 40                           | 5.8  | 7.2   | 70  | 1.89                                    |
| BUK9M9R1-40E          | 40                  | 7.3                          | 9.1  | 64  | 2   |   |
| BUK9M11-40E           | 40                  | 9                            | 11   | 53  | 2.43                                      |   |






## N-channel 55V-60V automotive power MOSFETs

| Package name                   | Type number  | $V_{DS}$<br>[max] (V)          | $R_{DS(on)}$<br>[max]<br>@ 10 V<br>(m $\Omega$ )                                    | $R_{DS(on)}$<br>[max]<br>@ 5 V<br>(m $\Omega$ ) | $I_D$<br>[max]<br>@ 25 °C<br>(A) | $R_{th(j-mb)}$<br>[max]<br>(K/W) |      |
|--------------------------------|--|--------------------------------|---|---|----------------------------------|----------------------------------|------|
| TO-220AB<br>(SOT78)            |   | BUK953R5-60E                   | 60  | 3.4   | 3.7                              | 120                              | 0.51 |
|                                |  | BUK954R8-60E                   | 60  | 4.5   | 4.9                              | 100                              | 0.64 |
| D <sup>2</sup> PAK<br>(SOT404) |  | BUK7610-55AL                   | 55  | 10  |                                  | 75                               | 0.5  |
|                                |  | BUK9620-55A                    | 55  | 18  | 20                               | 54                               | 1.2  |
|                                |  | BUK7620-55A                    | 55  | 20  |                                  | 54                               | 1.2  |
|                                |  | BUK9624-55A                    | 55  | 22  | 24                               | 46                               | 1.4  |
|                                |  | BUK9628-55A                    | 55  | 25  | 28                               | 42                               | 1.5  |
|                                |  | BUK9635-55A                    | 55  | 32  | 35                               | 34                               | 1.8  |
|                                |  | BUK7635-55A                    | 55  | 35  |                                  | 35                               | 1.7  |
|                                |  | BUK9675-55A                    | 55  | 68  | 75                               | 20                               | 2.4  |
|                                |  | BUK7675-55A                    | 55  | 75  |                                  | 20                               | 2.4  |
|                                |  | BUK962R5-60E                   | 60  | 2.3   | 2.5                              | 120                              | 0.43 |
|                                |  | BUK762R4-60E                   | 60  | 2.4   |                                  | 120                              | 0.43 |
|                                |  | BUK962R8-60E                   | 60  | 2.5   | 2.8                              | 120                              | 0.46 |
|                                |  | BUK762R6-60E                   | 60  | 2.6   |                                  | 120                              | 0.46 |
|                                |  | BUK963R3-60E                   | 60  | 3   | 3.3                              | 120                              | 0.51 |
|                                |  | BUK763R1-60E                   | 60  | 3.1   |                                  | 120                              | 0.51 |
|                                |  | BUK964R2-60E                   | 60  | 3.9   | 4.2                              | 100                              | 0.57 |
|                                |  | BUK763R9-60E                   | 60  | 3.9   |                                  | 100                              | 0.57 |
|                                |  | BUK964R8-60E                   | 60  | 4.4   | 4.8                              | 100                              | 0.64 |
|                                |  | BUK764R4-60E                   | 60  | 4.5   |                                  | 100                              | 0.64 |
|                                |  | BUK966R5-60E                   | 60  | 5.9   | 6.5                              | 75                               | 0.82 |
|                                |  | BUK766R0-60E                   | 60  | 6   |                                  | 75                               | 0.82 |
|                                |  | BUK969R0-60E                   | 60  | 8   | 9                                | 75                               | 1.09 |
|                                |  | BUK768R3-60E                   | 60  | 8.3   |                                  | 75                               | 1.09 |
|                                |  | BUK9614-60E                    | 60  | 13  | 14                               | 56                               | 1.56 |
|                                |  | BUK7613-60E                    | 60  | 13  |                                  | 58                               | 1.56 |
|                                |  | I <sup>2</sup> PAK<br>(SOT226) |  | BUK7E2R6-60E                                    | 60                               | 2.6                              |      |
| BUK7E3R5-60E                   | 60   |                                |   | 3.5   |                                  | 120                              | 0.51 |
| BUK7E4R6-60E                   | 60   |                                |   | 4.6   |                                  | 100                              | 0.64 |
| BUK7E13-60E                    | 60   |                                |   | 13  |                                  | 58                               | 1.56 |





## N-channel 55V-60V automotive power MOSFETs

| Package name                      | Type number     | V <sub>DS</sub><br>[max] (V) | R <sub>DS(on)</sub><br>[max]<br>@ 10 V<br>(mΩ) | R <sub>DS(on)</sub><br>[max]<br>@ 5 V<br>(mΩ) | I <sub>D</sub><br>[max]<br>@ 25 °C<br>(A) | R <sub>th(j-mb)</sub><br>[max]<br>(K/W) |
|-----------------------------------|-----------------|------------------------------|--|---|---|---|
| LFPAK56;<br>Power-SO8<br>(SOT669) | BUK9Y4R8-60E    | 60                           | 4.1  | 4.8   | 100                                       | 0.63                                    |
|                                   | BUK7Y4R8-60E    | 60                           | 4.8  |   | 100                                       | 0.63                                    |
|                                   | BUK9Y6R0-60E    | 60                           | 5.2  | 6   | 100                                       | 0.77                                    |
|                                   | BUK9Y7R2-60E    | 60                           | 5.6  | 7.2   | 100                                       | 0.9                                     |
|                                   | BUK7Y6R0-60E    | 60                           | 6  |   | 100                                       | 0.77                                    |
|                                   | BUK7Y7R2-60E    | 60                           | 7.2  |   | 100                                       | 0.9                                     |
|                                   | BUK9Y8R7-60E    | 60                           | 7.5  | 8.7   | 86  | 1.02                                    |
|                                   | BUK7Y8R7-60E    | 60                           | 8.7  |   | 87  | 1.02                                    |
|                                   | BUK9Y15-60E     | 60                           | 13   | 15  | 53  | 1.58                                    |
|                                   | BUK7Y15-60E     | 60                           | 15   |   | 53  | 1.59                                    |
|                                   | BUK9Y25-60E     | 60                           | 22   | 25  | 34  | 2.31                                    |
|                                   | BUK7Y25-60E     | 60                           | 25   |   | 34  | 2.31                                    |
|                                   | BUK9Y43-60E     | 60                           | 38   | 43  | 22  | 3.33                                    |
|                                   | BUK7Y43-60E     | 60                           | 43   |   | 22  | 3.33                                    |
|                                   | BUK9Y59-60E     | 60                           | 52   | 59  | 17  | 4.03                                    |
| BUK7Y59-60E                       | 60              | 59                           |  | 17  | 4.03                                      |   |
| LFPAK56D<br>(SOT1205)             | BUK7K12-60E     | 60                           | 9.3  |   |   | 2.21                                    |
|                                   | BUK7K13-60E     | 60                           | 10   |   | 40  | 2.36                                    |
|                                   | BUK9K12-60E     | 60                           | 11   | 12  | 35  | 2.21                                    |
|                                   | BUK9K13-60E     | 60                           | 12   | 13  | 40  | 2.36                                    |
|                                   | BUK7K17-60E     | 60                           | 14   |   | 30  | 2.84                                    |
|                                   | BUK9K17-60E     | 60                           | 16   | 17  | 26  | 2.84                                    |
|                                   | BUK7K35-60E     | 60                           | 30   |   | 21  | 3.96                                    |
|                                   | BUK9K35-60E     | 60                           | 32   | 35  | 22  | 3.96                                    |
|                                   | BUK7K52-60E     | 60                           | 45   |   | 15  | 4.68                                    |
| BUK9K52-60E                       | 60              | 49                           | 55   | 16  | 4.68                                      |   |
| LFPAK33<br>(SOT1210)              | BUK7M9R9-60E    | 60                           | 9.9  |   | 60  | 1.89                                    |
|                                   | BUK9M12-60E     | 60                           | 11   | 12  | 54  | 1.89                                    |
|                                   | BUK7M12-60E     | 60                           | 12   |   | 53  | 2                                       |
|                                   | BUK9M15-60E     | 60                           | 13   | 15  | 47  | 2                                       |
|                                   | BUK7M15-60E     | 60                           | 15   |   | 43  | 2.43                                    |
|                                   | BUK9M19-60E     | 60                           | 17   | 19  | 38  | 2.43                                    |
|                                   | BUK7M19-60E     | 60                           | 19   |   | 36  | 2.75                                    |
|                                   | BUK9M24-60E     | 60                           | 21   | 24  | 32  | 2.75                                    |
|                                   | BUK7M33-60E     | 60                           | 33   |   |   | 3.4                                     |
|                                   | BUK9M42-60E     | 60                           | 37   | 42  | 22  | 3.4                                     |
|                                   | BUK7M42-60E     | 60                           | 42   |   | 20  | 4.17                                    |
|                                   | BUK9M53-60E     | 60                           | 46   | 53  | 17  | 4.17                                    |
|                                   | BUK7M67-60E     | 60                           | 67   |   | 14  | 4.8                                     |
| BUK9M85-60E                       | 60              | 73                           | 85   | 13  | 4.8                                       |   |
| SOT223                            | BUK9832-55A/CU  | 55                           | 29   | 32  |   |   |
|                                   | BUK9880-55A/CU  | 55                           | 73   | 80  |   |   |
|                                   | BUK7880-55A/CU  | 55                           | 80   |   |   |   |
|                                   | BUK98150-55A/CU | 55                           | 137  | 150   |   |   |
|                                   | BUK78150-55A/CU | 55                           | 150  |   |   |   |

## N-channel 75V-80V automotive power MOSFETs

| Package name                      | Type number   | $V_{DS}$<br>[max] (V) | $R_{DS(on)}$<br>[max]<br>@ 10 V<br>(m $\Omega$ ) | $R_{DS(on)}$<br>[max]<br>@ 5 V<br>(m $\Omega$ ) | $I_D$<br>[max]<br>@ 25 °C<br>(A) | $R_{th(j-mb)}$<br>[max]<br>(K/W) |      |
|-----------------------------------|---|-----------------------|--|---|----------------------------------|----------------------------------|------|
| TO-220AB<br>(SOT78)               |    | BUK753R8-80E          | 80   | 4   |                                  | 120                              | 0.43 |
| D <sup>2</sup> PAK<br>(SOT404)    |    | BUK7613-75B           | 75   | 13  |                                  | 75                               | 0.95 |
|                                   |   | BUK9616-75B           | 75   | 14  | 16                               | 67                               | 0.95 |
|                                   |   | BUK7623-75A           | 75   | 23  |                                  | 53                               | 1.1  |
|                                   |   | BUK763R8-80E          | 80   | 3.8   |                                  | 120                              | 0.43 |
|                                   |   | BUK964R2-80E          | 80   | 4   | 4.2                              | 120                              | 0.43 |
|                                   |   | BUK764R2-80E          | 80   | 4.2   |                                  | 120                              | 0.46 |
|                                   |   | BUK964R7-80E          | 80   | 4.5   | 4.7                              | 120                              | 0.46 |
|                                   |   | BUK769R6-80E          | 80   | 9.6   |                                  | 75                               | 0.82 |
| LFPAK56;<br>Power-SO8<br>(SOT669) |   | BUK7Y7R8-80E          | 80   | 7.8   |                                  | 100                              | 0.63 |
|                                   |   | BUK9Y8R5-80E          | 80   | 8   | 8.5                              | 100                              | 0.63 |
|                                   |   | BUK7Y9R9-80E          | 80   | 9.9   |                                  | 89                               | 0.77 |
|                                   |   | BUK9Y11-80E           | 80   | 10  | 11                               | 84                               | 0.77 |
|                                   |   | BUK9Y14-80E           | 80   | 14  | 15                               | 62                               | 1.02 |
|                                   |   | BUK7Y14-80E           | 80   | 14  |                                  | 65                               | 1.02 |
|                                   |   | BUK9Y25-80E           | 80   | 25  | 27                               | 37                               | 1.58 |
|                                   |   | BUK7Y25-80E           | 80   | 25  |                                  | 39                               | 1.58 |
|                                   |   | BUK9Y41-80E           | 80   | 41  | 45                               | 24                               | 2.33 |
|                                   |   | BUK7Y41-80E           | 80   | 41  |                                  | 25                               | 2.31 |
|                                   |   | BUK9Y72-80E           | 80   | 72  | 78                               | 15                               | 3.33 |
|                                   |   | BUK7Y72-80E           | 80   | 72  |                                  | 16                               | 3.33 |
|                                   |   | BUK9Y107-80E          | 80   | 98  | 107                              | 12                               | 4.03 |
| LFPAK56D<br>(SOT1205)             |  | BUK7Y98-80E           | 80   | 98  |                                  | 12                               | 4.03 |
|                                   |   | BUK7K15-80E           | 80   | 15  |                                  | 23                               | 2.21 |
|                                   |   | BUK7K17-80E           | 80   | 17  |                                  | 21                               | 2.36 |
|                                   |   | BUK7K23-80E           | 80   | 23  |                                  | 17                               | 2.21 |
|                                   |   | BUK9K20-80E           | 80   | 17  | 19                               | 23                               | 2.84 |
|                                   |   | BUK9K22-80E           | 80   | 19  | 22                               | 21                               | 2.36 |
| LFPAK33<br>(SOT1210)              |  | BUK9K30-80E           | 80   | 26  | 30                               | 17                               | 2.84 |
|                                   |   | BUK7M17-80E           | 80   | 17  |                                  | 43                               | 1.89 |
|                                   |   | BUK9M23-80E           | 80   | 20  | 23                               | 37                               | 1.89 |
|                                   |   | BUK7M22-80E           | 80   | 22  |                                  | 37                               | 2    |
|                                   |   | BUK7M27-80E           | 80   | 27  |                                  | 30                               | 2.43 |
| BUK9M28-80E                       | 80  | 28                    | 28   | 33  | 2                                |                                  |      |
| BUK9M35-80E                       | 80  | 35                    | 35   | 26  | 2.43                             |                                  |      |

## N-channel 100V automotive power MOSFETs

| Package name                      | Type number   | $V_{DS}$<br>[max] (V)          | $R_{DS(on)}$<br>[max]<br>@ 10 V<br>(m $\Omega$ )                                    | $R_{DS(on)}$<br>[max]<br>@ 5 V<br>(m $\Omega$ ) | $I_D$<br>[max]<br>@ 25 °C<br>(A) | $R_{th(j-mb)}$<br>[max]<br>(K/W) |      |
|-----------------------------------|---|--------------------------------|---|---|----------------------------------|----------------------------------|------|
| TO-220AB<br>(SOT78)               |    | BUK755R4-100E                  | 100   | 5.2   |                                  | 120                              | 0.43 |
|                                   |   | BUK765R0-100E                  | 100   | 5   |                                  | 120                              | 0.43 |
| D <sup>2</sup> PAK<br>(SOT404)    |    | BUK965R8-100E                  | 100   | 5.6   | 5.8                              | 120                              | 0.43 |
|                                   |   | BUK768R1-100E                  | 100   | 8.1   |                                  | 100                              | 0.57 |
|                                   |   | BUK969R3-100E                  | 100   | 8.9   | 9.3                              | 100                              | 0.57 |
|                                   |   | BUK7613-100E                   | 100   | 13  |                                  | 72                               | 0.82 |
|                                   |   | BUK9615-100E                   | 100   | 14  | 15                               | 66                               | 0.82 |
|                                   |   | BUK7631-100E                   | 100   | 31  |                                  | 34                               | 1.56 |
|                                   |   | BUK9637-100E                   | 100   | 36  | 37                               | 31                               | 1.56 |
|                                   |   | BUK9660-100A                   | 100   | 58  | 60                               | 26                               | 1.4  |
|                                   |   | BUK7660-100A                   | 100   | 60  |                                  | 26                               | 1.4  |
|                                   |   | BUK9675-100A                   | 100   | 72  | 75                               | 23                               | 1.5  |
|                                   |   | BUK7675-100A                   | 100   | 75  |                                  | 23                               | 1.5  |
|                                   |   | BUK96180-100A                  | 100   | 173   | 180                              | 11                               | 2.8  |
|                                   |   | I <sup>2</sup> PAK<br>(SOT226) |  | BUK7E5R2-100E                                   | 100                              | 5.2                              |      |
| BUK9Y12-100E                      | 100   |                                |   | 12  | 12                               | 85                               | 0.63 |
| LFPAK56;<br>Power-SO8<br>(SOT669) |  | BUK7Y12-100E                   | 100   | 12  |                                  | 85                               | 0.63 |
|                                   |   | BUK9Y15-100E                   | 100   | 15  | 15                               | 69                               | 0.77 |
|                                   |   | BUK7Y15-100E                   | 100   | 15  |                                  | 68                               | 0.77 |
|                                   |   | BUK9Y19-100E                   | 100   | 18  | 19                               | 56                               | 0.9  |
|                                   |   | BUK7Y19-100E                   | 100   | 19  |                                  | 56                               | 0.9  |
|                                   |   | BUK9Y22-100E                   | 100   | 22  | 22                               | 49                               | 1.02 |
|                                   |   | BUK7Y22-100E                   | 100   | 22  |                                  | 49                               | 1.02 |
|                                   |   | BUK9Y38-100E                   | 100   | 38  | 38                               | 30                               | 1.58 |
|                                   |   | BUK7Y38-100E                   | 100   | 38  |                                  | 30                               | 1.58 |
|                                   |   | BUK9Y65-100E                   | 100   | 64  | 65                               | 19                               | 2.31 |
|                                   |   | BUK7Y65-100E                   | 100   | 65  |                                  | 19                               | 2.31 |
|                                   |   | BUK9Y113-100E                  | 100   | 110   | 113                              | 12                               | 3.33 |
|                                   |   | BUK7Y113-100E                  | 100   | 113   |                                  | 12                               | 3.33 |
|                                   |   | BUK9Y153-100E                  | 100   | 146   | 153                              | 9.4                              | 4.03 |
|                                   |   | BUK7Y153-100E                  | 100   | 153   |                                  | 9.4                              | 4.03 |



## N-channel 100V automotive power MOSFETs

| Package name          | Type number      | $V_{DS}$<br>[max] (V) | $R_{DS(on)}$<br>[max]<br>@ 10 V<br>(m $\Omega$ ) | $R_{DS(on)}$<br>[max]<br>@ 5 V<br>(m $\Omega$ ) | $I_D$<br>[max]<br>@ 25 °C<br>(A) | $R_{th(j-mb)}$<br>[max]<br>(K/W) |
|-----------------------|------------------|-----------------------|--|---|----------------------------------|----------------------------------|
| LFPAK56D<br>(SOT1205) | BUK7K29-100E     | 100                   | 25   |   | 29.5                             | 2.21                             |
|                       | BUK9K29-100E     | 100                   | 27   | 29  | 30                               | 2.21                             |
|                       | BUK7K32-100E     | 100                   | 28   |   | 29                               | 2.36                             |
|                       | BUK9K32-100E     | 100                   | 31   | 33  | 26                               | 2.36                             |
|                       | BUK7K45-100E     | 100                   | 38   |   | 21                               | 2.84                             |
|                       | BUK9K45-100E     | 100                   | 42   | 45  | 21                               | 2.84                             |
|                       | BUK7K89-100E     | 100                   | 83   |   | 13                               | 3.96                             |
|                       | BUK9K89-100E     | 100                   | 85   | 89  | 13                               | 3.96                             |
|                       | BUK7K134-100E    | 100                   | 121  |   | 9.8                              | 4.68                             |
|                       | BUK9K134-100E    | 100                   | 154  | 159   | 8.5                              | 4.68                             |
| LFPAK33<br>(SOT1210)  | BUK9M34-100E     | 100                   | 34   | 34  | 29                               | 1.89                             |
|                       | BUK9M43-100E     | 100                   | 43   | 44  | 26                               | 1.88                             |
|                       | BUK9M120-100E    | 100                   | 119  | 120   | 12                               | 3.4                              |
|                       | BUK9M156-100E    | 100                   | 150  | 156   | 9.3                              | 4.17                             |
| SOT223                | BUK98180-100A/CU | 100                   | 173  | 180   | 4.6                              |                                  |
|                       | BUK9875-100A/CU  | 101                   | 72   | 75  | 7                                |                                  |

## P-channel 30V-60V automotive power MOSFETs

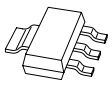
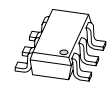




Types in **bold** represent new products

| Package name | Type number        | $V_{DS}$<br>[max] (V) | $R_{DS(on)}$<br>[max]<br>@ 10 V<br>(m $\Omega$ ) | $I_D$<br>[max]<br>@ 25 °C<br>(A) | $R_{th(j-mb)}$<br>[max]<br>(K/W) |
|--------------|--------------------|-----------------------|--|----------------------------------|----------------------------------|
| LFPAK56      | <b>BUK6Y12-30P</b> | 30                    | 12   | 67                               | 1.4                              |
|              | <b>BUK6Y20-30P</b> | 30                    | 20   | 41                               | 2.3                              |
|              | <b>BUK6Y15-40P</b> | 40                    | 15   | 63                               | 1.4                              |
|              | <b>BUK6Y25-40P</b> | 40                    | 25   | 40                               | 2.3                              |
|              | <b>BUK6Y32-60P</b> | 60                    | 32   | 39                               | 1.4                              |
|              | <b>BUK6Y57-60P</b> | 60                    | 57   | 23                               | 2.3                              |

Small-signal automotive MOSFETs – Low  $R_{DS(on)}$

| Package               |                     |                     |                    |                             |                             |                     |  |       |       |       |    |  |
|-----------------------|---------------------|---------------------|--------------------|-----------------------------|-----------------------------|---------------------|--|-------|-------|-------|----|--|
| Size (mm)             |                     |                     |                    |                             |                             |                     |  |       |       |       |    |  |
| P <sub>tot</sub> (mW) |                     |                     |                    |                             |                             |                     |  |       |       |       |    |  |
| Polarity              | V <sub>DS</sub> (V) | V <sub>GS</sub> (V) | I <sub>D</sub> (A) | V <sub>GS(th)</sub> min (V) | V <sub>GS(th)</sub> max (V) | ESD protection (kV) | R <sub>DS(on)</sub> typ (mΩ) @ V <sub>GS</sub> = |       |       |       |    |  |
|                       |                     |                     |                    |                             |                             |                     | 10 V   | 4.5 V | 2.5 V | 1.8 V |    |  |
| N-channel             | 20                  | 8                   | 4.7                | 0.45                        | 1                           | 2                   | -  | 24    | 29    | 40    |    |  |
|                       |                     |                     | 12.9               | 0.4                         | 0.9                         | 2                   | -  | 10    | 12    | 16    |    |  |
|                       |                     | 12                  | 11.4               | 0.4                         | 0.9                         | 2                   | -  | 12    | 15    | 20    |    |  |
|                       |                     |                     | 6.3                | 0.75                        | 1.25                        | 2                   | -  | 16    | 24    | -     |    |  |
|                       | 30                  | 12                  | 11.3               | 0.4                         | 0.9                         | 2                   | -  | 13    | 14    | 17    |    |  |
|                       |                     |                     | 5                  | 0.4                         | 0.9                         | 2                   | -  | 28    | 32    | 37    |    |  |
|                       |                     |                     | 4                  | 0.75                        | 1.25                        | 2                   | -  | 55    | 72    | -     |    |  |
|                       |                     | 20                  | 5.5                | 1                           | 2.5                         | 2                   | 17   | 22    | -     | -     |    |  |
|                       |                     |                     | 3.9                | 1                           | 2.5                         | 2                   | 30   | 39    | -     | -     |    |  |
|                       |                     |                     | 3.7                | 1                           | 2.5                         | 2                   | 54   | 70    | -     | -     |    |  |
|                       | 40                  | 15                  | 19                 | 1.4                         | 2.1                         | -                   | 18   | 22    | -     | -     |    |  |
|                       |                     |                     | 19                 | 1.3                         | 2.7                         | -                   | 17   | 22    | -     | -     |    |  |
|                       |                     |                     | 19                 | 2.4                         | 4                           | -                   | 18   | -     | -     | -     |    |  |
|                       |                     | 20                  | 5                  | 1.5                         | 2.5                         | 2                   | 25   | 30    | -     | -     |    |  |
|                       |                     |                     | 2.7                | 1                           | 2.5                         | 1                   | 64   | 79    | -     | -     |    |  |
|                       |                     |                     | 9                  | 1                           | 2.5                         | 1                   | 85   | 112   | -     | -     |    |  |
|                       | 60                  | 20                  | 2.5                | 1                           | 2.5                         | 1                   | 95   | 120   | -     | -     |    |  |
|                       |                     |                     | 13                 | 1.3                         | 2.7                         | -                   | 32   | 38    | -     | -     |    |  |
|                       |                     |                     | 13                 | 1.3                         | 2.7                         | 2                   | 42   | 49    | -     | -     |    |  |
|                       |                     |                     | 4                  | 1.3                         | 2.7                         | 2                   | 42   | 49    | -     | -     |    |  |
|                       |                     |                     | 3.1                | 1.3                         | 2.7                         | 2                   | 46   | 52    | -     | -     |    |  |
|                       |                     |                     | 11                 | 1.3                         | 2.7                         | 2                   | 65   | 78    | -     | -     |    |  |
|                       |                     |                     | 3                  | 1.3                         | 2.7                         | 2                   | 72   | 85    | -     | -     |    |  |
|                       |                     |                     | 9                  | 1.3                         | 2.7                         | 2                   | 96   | 108   | -     | -     |    |  |
|                       |                     |                     | 6                  | 1.3                         | 2.7                         | 2                   | 160  | 188   | -     | -     |    |  |
|                       |                     |                     | 1.5                | 1.3                         | 2.7                         | 2                   | 176  | 196   | -     | -     |    |  |
|                       | 80                  | 20                  | 0.8                | 1.3                         | 2.7                         | 2                   | 300  | 332   | -     | -     |    |  |
|                       |                     |                     | 10                 | 1.3                         | 2.7                         | 2                   | 72   | 84    | -     | -     |    |  |
|                       |                     |                     | 2.8                | 1.3                         | 2.7                         | 2                   | 80   | 92    | -     | -     |    |  |
|                       |                     |                     | 7                  | 1.3                         | 2.7                         | 2                   | 175  | 195   | -     | -     |    |  |
|                       |                     |                     | 1.9                | 1.3                         | 2.7                         | 2                   | 175  | 195   | -     | -     |    |  |
|                       | 100                 | 20                  | 1.1                | 1.3                         | 2.7                         | 2                   | 345  | 390   | -     | -     |    |  |
|                       |                     |                     | 1.5                | 1.3                         | 2.7                         | 2                   | 285  | 301   | -     | -     |    |  |
|                       |                     |                     | 1.1                | 1.3                         | 2.7                         | 2                   | 527  | 555   | -     | -     |    |  |
|                       | P-channel           | 12                  | 12                 | 11.8                        | 0.47                        | 0.9                 | -  | -     | 15    | 17    | 21 |  |
|                       |                     |                     |                    | 5.6                         | 0.45                        | 0.95                | 2  | -     | 27    | 38    | 50 |  |
| 20                    |                     | 8                   | 2                  | 0.5                         | 1.1                         | -                   | -  | 100   | 155   | 210   |    |  |
|                       |                     |                     | 2.3                | 0.45                        | 0.95                        | -                   | -  | 120   | 150   | 200   |    |  |
|                       |                     | 12                  | 10.3               | 0.47                        | 0.9                         | 2                   | -  | 19    | 22    | 28    |    |  |
|                       |                     |                     | 5                  | 0.47                        | 0.9                         | 2.3                 | -  | 28    | 31    | 36    |    |  |
|                       |                     |                     | 5.3                | 0.75                        | 1.25                        | 2                   | -  | 28    | 42    | -     |    |  |
|                       |                     |                     | 5                  | 0.47                        | 0.9                         | 2                   | -  | 39    | 45    | 56    |    |  |
|                       |                     |                     | 5.7                | 0.75                        | 1.25                        | 2                   | -  | 41    | 56    | -     |    |  |
|                       |                     |                     | 3.5                | 0.75                        | 1.25                        | -                   | -  | 48    | 71    | -     |    |  |
|                       |                     |                     | 3.3                | 0.75                        | 1.25                        | 2                   | -  | 67    | 99    | -     |    |  |
|                       |                     |                     | 2.4                | 1                           | 2.5                         | 2                   | -  | 97    | 147   | -     |    |  |
| 30                    |                     | 20                  | 8.8                | 1                           | 2.5                         | -                   | 24   | 32    | -     | -     |    |  |
|                       |                     |                     | 4.2                | 1                           | 3                           | 2                   | 35   | 47    | -     | -     |    |  |
| 40                    |                     | 20                  | 1.5                | 1                           | 2.5                         | 1                   | 180  | 220   | -     | -     |    |  |
|                       |                     |                     | 14                 | 1.4                         | 2.7                         | -                   | 30   | 45    | -     | -     |    |  |
| 60                    |                     | 20                  | 8                  | 1.9                         | 3.2                         | -                   | 95   | 125   | -     | -     |    |  |

Types in **bold** represent new products

| SOT223  | SOT457<br>(SC-74)   | SOT23   | DFN2020MD-6<br>(SOT1220)  | DFN2020D-6<br>(SOT1118D)  | DFN1010D-3<br>(SOT1215)   |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| 6.5 x 3.5 x 1.65  | 2.9 x 1.5 x 1.0   | 2.9 x 1.3 x 1.0   | 2.0 x 2.0 x 0.65  | 2.0 x 2.0 x 0.65  | 1.1 x 1.0 x 0.37  |
| 1700  | 600   | 250   | 1250  | 1250  | 1000  |
|   |   | PMV28UNEA   | PMPB10XNEA<br>PMPB12UNEA<br>PMPB20XNEA<br>PMPB13XNEA<br>PMPB29XNEA                | PMDPB56XNEA   |   |
|   | <b>PMN25ENEA</b>  | PMV25ENEA<br>PMV50ENEA<br>PMV100ENEA  | BUK9D23-40E<br>BUK6D23-40E<br>BUK7D25-40E   |   |   |
|   | <b>PMN20ENA</b>   |   |   |   |   |
|   | <b>PMN30ENEA</b>  | <b>PMV30ENEA</b><br>PMV65ENEA   | <b>BUK6D120-40E</b>   |   |   |
|   | <b>PMN40ENA</b>   | PMV130ENEA  | BUK6D43-60E<br><b>BUK6D56-60E</b><br>PMPB55ENEA                                   |   |   |
|   | <b>PMN55ENEA</b>  | PMV55ENEA   | <b>BUK6D88-60E</b><br>PMPB85ENEA<br><b>BUK6D125-60E</b><br><b>BUK6D210-60E</b>    |   |   |
|   | <b>PMN120ENEA</b>   | PMV120ENEA  |   |   |   |
|   | <b>PMN230ENEA</b>   | PMV230ENEA<br>PMV450ENEA  | <b>BUK6D98-80E</b><br>PMPB95ENEA<br><b>BUK6D230-80E</b><br>PMPB215ENEA            |   |   |
| PMT280ENEA<br>PMT560ENEA  | <b>PMN280ENEA</b>   | PMV280ENEA  | <b>BUK6D335-100E</b>  |   | PMXB360ENEA   |
|   |   | PMV27UPEA<br>NX2301P<br>BSH205G2  | PMPB15XPA   |   |   |
|   |   | PMV30XPEA   | PMPB20XPEA<br>PMPB29XPEA  |   |   |
|   | PMN42XPEA   |   | PMPB43XPEA  |   |   |
|   |   | PMV48XPA<br>PMV65XPEA<br>PMV100XPEA   |   |   |   |
|   |   | PMV50EPEA<br>PMV250EPEA   | PMPB27EPA<br>PMPB50EPEA   |   |   |
|   |   |   | BUK6D43-40P<br><b>BUK6D120-60P</b>  |   |   |

## Automotive MOSFETs


### Small-signal automotive MOSFETs – High $R_{DS(on)}$





| Package        |              |              |           |                      |                      |                     |   |       |       |       |  |
|----------------|--------------|--------------|-----------|----------------------|----------------------|---------------------|---|-------|-------|-------|--|
| Size (mm)      |              |              |           |                      |                      |                     |   |       |       |       |  |
| $P_{tot}$ (mW) |              |              |           |                      |                      |                     |   |       |       |       |  |
| Polarity       | $V_{DS}$ (V) | $V_{GS}$ (V) | $I_D$ (A) | $V_{GS(th)}$ min (V) | $V_{GS(th)}$ max (V) | ESD protection (kV) | $R_{DS(on)}$ typ (m $\Omega$ ) @ $V_{GS}$ = |       |       |       |  |
|                |              |              |           |                      |                      |                     | 10 V  | 4.5 V | 2.5 V | 1.8 V |  |
| N              | 30           | 8            | 0.4       | 0.6                  | 1.1                  | 2                   | -   | 1000  | 1400  | 2000  |  |
|                |              |              | 0.36      | 0.9                  | 1.5                  | -                   | 900   | 1000  | -     | -     |  |
|                | 60           | 20           | 0.36      | 0.48                 | 1.6                  | 1.5                 | 1000  | 1100  | 1400  | -     |  |
|                |              |              | 0.3       | 1                    | 2.5                  | 2                   | 1000  | 1300  | -     | -     |  |
|                |              |              | 0.3       | 1                    | 2.5                  | 3                   | 1100  | 1300  | -     | -     |  |
|                |              |              | 0.2       | 0.8                  | 1.5                  | yes                 | 2700  | 3000  | 4000  | -     |  |
| P              | 30           | 8            | 0.23      | 0.6                  | 1.1                  | 2                   | -   | 2800  | 5300  | -     |  |
|                | 50           | 20           | 0.2       | 1.1                  | 2.1                  | 1                   | 5300  | 6000  | -     | -     |  |



### Small-signal automotive MOSFETs – Dual

| Package        |              |              |           |                      |                      |                     |   |       |       |       |  |
|----------------|--------------|--------------|-----------|----------------------|----------------------|---------------------|---|-------|-------|-------|--|
| Size (mm)      |              |              |           |                      |                      |                     |   |       |       |       |  |
| $P_{tot}$ (mW) |              |              |           |                      |                      |                     |   |       |       |       |  |
| Polarity       | $V_{DS}$ (V) | $V_{GS}$ (V) | $I_D$ (A) | $V_{GS(th)}$ min (V) | $V_{GS(th)}$ max (V) | ESD protection (kV) | $R_{DS(on)}$ typ (m $\Omega$ ) @ $V_{GS}$ = |       |       |       |  |
|                |              |              |           |                      |                      |                     | 10 V  | 4.5 V | 2.5 V | 1.8 V |  |
| N              | 30           | 12           | 4         | 0.75                 | 1.25                 | 2                   | -   | 55    | 72    | -     |  |
| N              | 20           | 8            | 0.73      | 0.5                  | 0.95                 | 2                   | -   | 290   | 420   | 600   |  |
| P              |              |              | 0.5       | 0.5                  | 1.3                  | 2                   | -   | 670   | 1200  | 1800  |  |

### Small-signal MOSFETs complementary

| Package   | Type       | Polarity | $V_{DS}$ (V) | $V_{GS}$ (V) | $I_D$ (A) | $V_{GSth}$ min (V) | $V_{GSth}$ max (V) |  |
|---|------------|----------|--------------|--------------|-----------|--------------------|--------------------|--|
| SOT363 (SC-88) (2.0 x 1.25 x 0.95)<br> | NX3008CBKS | N        | 30           | 8            | 0.35      | 0.6                | 1.1                |  |
|   |            | P        | 30           | 8            | 0.2       | 0.6                | 1.1                |  |

| SOT23   | SOT363 (SC-88)  | SOT323 (SC-70)  | DFN1006 (SOT883)  |
|---|---|---|---|
|  |  |  |  |
| 2.9 x 1.3 x 1.0   | 2.0 x 1.25 x 0.95   | 2.0 x 1.25 x 0.95   | 1.0 x 0.6 x 0.5   |
| 250   | 300   | 200   | 250   |
| NX3008NBK   | NX3008NBKS  | NX3008NBKW  |   |
| BSS138P   | BSS138PS  | BSS138PW  |   |
| BSS138BK  | BSS138BKS   | BSS138BKW   |   |
| 2N7002BK  | 2N7002BKS   | 2N7002BKW   | 2N7002BKM   |
| 2N7002CK  |   |   |   |
| BSS138AKA   |   |   |   |
| NX3008PBK   | NX3008PBKS  | NX3008PBKW  |   |
| BSS84AK   | BSS84AKS  | BSS84AKW  | BSS84AKM  |



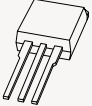

| SOT363 (SC-88)   | DFN2020D-6 (SOT1118D)  |
|--|--|
|  |  |
| 2.0 x 1.25 x 0.95  | 2.0 x 2.0 x 0.65   |
| 300  | 1250   |
|  | PMDPB56XNEA  |
| PMGD290UCEA  |  |

| $t_{on}$ typ (ns) | $t_{off}$ typ (ns) | QG typ (nC) | ESD protection (kV) | $R_{DS(on)}$ typ (m $\Omega$ ) @ $V_{GS} =$ |       |       |       |       |       |
|-------------------|--------------------|-------------|---------------------|---|-------|-------|-------|-------|-------|
|                   |                    |             |                     | 10 V  | 4.5 V | 2.5 V | 1.8 V | 1.5 V | 1.2 V |
| 26                | 88                 | 0.52        | 2                   | -   | 1000  | 1400  | 2000  | -     | -     |
| 49                | 103                | 0.55        | 2                   | -   | 2800  | 5300  | -     | -     | -     |

MOSFETs

## N-channel 25V-30V Power MOSFETs

Types in **bold red** are in development

| Package  | Type number          | $V_{DS}$ [max] (V) | $R_{DS(on)}$ [max] @ $V_{GS} = 10\text{ V}$ (m $\Omega$ ) | $R_{DS(on)}$ [max] @ $V_{GS} = 4.5\text{ V}$ or $5\text{ V}$ (m $\Omega$ ) | $I_D$ [max] (A) | $Q_{G(tot)}$ [typ] (nC) |
|--|----------------------|--------------------|---|--|-----------------|-------------------------|
| TO-220<br>(SOT78)                 | PSMN1R1-30PL         | 30                 | 1.3   | 1.6  | 120             | 118                     |
|  | PSMN1R6-30PL         | 30                 | 1.7   | 2.1  | 100             | 101                     |
|  | PSMN1R8-30PL         | 30                 | 1.8   | 2.3  | 100             | 83                      |
|  | PSMN2R0-30PL         | 30                 | 2.1   | 2.8  | 100             | 55                      |
|  | PSMN2R7-30PL         | 30                 | 2.7   | 3.6  | 100             | 32                      |
|  | PSMN3R4-30PL         | 30                 | 3.4   | 4.1  | 100             | 31                      |
|  | PSMN4R3-30PL         | 30                 | 4.3   | 6.2  | 100             | 19                      |
|  | PSMN017-30PL         | 30                 | 17  | 23   | 32              | 5.1                     |
|  | PSMN022-30PL         | 30                 | 22  | 34   | 30              | 4.4                     |
| D <sup>2</sup> PAK<br>(SOT404)    | PSMNR90-30BL         | 30                 | 1   | 1.4  | 120             | 118                     |
|  | PSMN1R5-30BLE        | 30                 | 1.5   | 1.85   | 120             | 108                     |
|  | PSMN1R8-30BL         | 30                 | 1.8   | 2.1  | 100             | 83                      |
|  | PSMN1R6-30BL         | 30                 | 1.9   | 2.2  | 100             | 101                     |
|  | PSMN2R0-30BL         | 30                 | 2.1   | 2.9  | 100             | 55                      |
|  | PSMN2R7-30BL         | 30                 | 3   | 3.7  | 100             | 32                      |
|  | PSMN3R4-30BL         | 30                 | 3.3   | 3.8  | 100             | 31                      |
|  | PSMN3R4-30BLE        | 30                 | 3.4   | 5  | 120             | 37                      |
|  | PSMN4R3-30BL         | 30                 | 4.1   | 5.2  | 100             | 19                      |
|  | PSMN017-30BL         | 30                 | 17  | 23   | 32              | 5.1                     |
|  | PSMN022-30BL         | 30                 | 22  | 30   | 30              | 4.4                     |
| I <sup>2</sup> PAK<br>(SOT226)  | PSMN1R1-30EL         | 30                 | 1.3   | 1.6  | 120             | 118                     |
|  | PSMN017-30EL         | 30                 | 17  | 23   | 32              | 5.1                     |
| LFPAK56<br>(Power-SO8)          | <b>PSMNR51-25YLH</b> | 25                 | 0.51  | 0.75   | 300             | 52                      |
|  | <b>PSMNR60-25YLH</b> | 25                 | 0.6   | 0.89   | 300             | 40.9                    |
|  | PSMN0R7-25YLD        | 25                 | 0.74  | 0.92   | 300             | 50.9                    |
|  | PSMN0R9-25YLD        | 25                 | 0.86  | 1.2  | 300             | 41.5                    |
|  | PSMN1R0-25YLD        | 25                 | 1.02  | 1.4  | 100             | 33.2                    |
|  | PSMN1R1-25YLC        | 25                 | 1.15  | 1.5  | 100             | 39                      |
|  | PSMN1R2-25YLD        | 25                 | 1.15  | 1.7  | 100             | 28                      |
|  | PSMN1R2-25YL         | 25                 | 1.2   | 1.9  | 100             | 50.6                    |
|  | PSMN1R2-25YLC        | 25                 | 1.3   | 1.7  | 100             | 31                      |
|  | PSMN1R5-25YL         | 25                 | 1.5   | 2.2  | 100             | 36                      |
|  | PSMN1R7-25YLD        | 25                 | 1.68  | 2.4  | 100             | 21.5                    |
|  | PSMN2R0-25YLD        | 25                 | 2   | 2.9  | 100             | 15.7                    |
|  | PSMN2R9-25YLC        | 25                 | 3.15  | 4.1  | 100             | 16                      |
|  | PSMN4R0-25YLC        | 25                 | 4.5   | 5.8  | 84              | 10.9                    |
|  | PSMN5R4-25YLD        | 25                 | 5.4   | 8.4  | 70              | 5.7                     |
|  | PSMN6R0-25YLD        | 25                 | 6.03  | 10   | 61              | 4.9                     |
|  | PSMN6R0-25YLB        | 25                 | 6.1   | 7.9  | 73              | 9                       |


## N-channel 25V-30V Power MOSFETs

Types in **bold red** are in development, types in **bold** represent new products

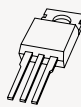

| Package                      | Type number          | $V_{DS}$ [max] (V) | $R_{DS(on)}$ [max] @<br>$V_{GS} = 10$ V (m $\Omega$ ) | $R_{DS(on)}$ [max] @<br>$V_{GS} = 4.5$ V or 5 V (m $\Omega$ ) | $I_D$ [max] (A) | $Q_{G(tot)}$ [typ] (nC) |
|------------------------------|----------------------|--------------------|---|---|-----------------|-------------------------|
| LFPAK56<br>(Power-SO8)       | <b>PSMNR58-30YLH</b> | 30                 | 0.66  | 0.86  | 300             | 48                      |
|                              | <b>PSMNR70-30YLH</b> | 30                 | 0.7   | 0.98  | 300             | 40                      |
|                              | PSMN0R9-30YLD        | 30                 | 0.87  | 1.1   | 300             | 51                      |
|                              | PSMN1R0-30YLD        | 30                 | 1.02  | 1.3   | 300             | 38.2                    |
|                              | PSMN1R0-30YLC        | 30                 | 1.15  | 1.4   | 100             | 50                      |
|                              | PSMN1R2-30YLD        | 30                 | 1.24  | 1.6   | 100             | 32                      |
|                              | PSMN1R2-30YLC        | 30                 | 1.25  | 1.7   | 100             | 38                      |
|                              | PSMN1R3-30YL         | 30                 | 1.3   | 2   | 100             | 46.6                    |
|                              | PSMN1R4-30YLD        | 30                 | 1.42  | 1.9   | 100             | 27.6                    |
|                              | PSMN1R5-30YL         | 30                 | 1.5   | 1.9   | 100             | 36.2                    |
|                              | PSMN1R5-30YLC        | 30                 | 1.55  | 2.1   | 100             | 30                      |
|                              | PSMN1R7-30YL         | 30                 | 1.7   | 2.1   | 100             | 36.2                    |
|                              | PSMN2R0-30YLD        | 30                 | 2   | 2.5   | 100             | 21.8                    |
|                              | PSMN2R0-30YL         | 30                 | 2   | 2.6   | 100             | 30                      |
|                              | PSMN2R0-30YLE        | 30                 | 2   | 3.5   | 100             | 41                      |
|                              | PSMN2R2-30YLC        | 30                 | 2.15  | 2.8   | 100             | 26                      |
|                              | PSMN2R4-30YLD        | 30                 | 2.4   | 3.1   | 100             | 18                      |
|                              | PSMN2R5-30YL         | 30                 | 2.4   | 3.2   | 100             | 27                      |
|                              | PSMN2R6-30YLC        | 30                 | 2.8   | 3.7   | 100             | 18                      |
|                              | PSMN3R0-30YL         | 30                 | 3   | 4   | 100             | 21                      |
|                              | PSMN3R0-30YLD        | 30                 | 3   | 4   | 100             | 14.5                    |
|                              | PSMN3R5-30YL         | 30                 | 3.5   | 4.6   | 100             | 19                      |
|                              | PSMN4R0-30YL         | 30                 | 4   | 5.3   | 100             | 17.6                    |
|                              | PSMN4R0-30YLD        | 30                 | 4   | 5.5   | 95              | 9.6                     |
|                              | PSMN4R1-30YLC        | 30                 | 4.35  | 5.7   | 92              | 11                      |
|                              | PSMN5R0-30YL         | 30                 | 5   | 6.7   | 91              | 14.1                    |
|                              | PSMN6R0-30YL         | 30                 | 6   | 7.9   | 79              | 11                      |
|                              | PSMN6R0-30YLD        | 30                 | 6   | 8.4   | 66              | 6.7                     |
|                              | PSMN6R1-30YLD        | 30                 | 6.1   | 8.4   | 66              | 6.4                     |
|                              | PSMN6R0-30YLB        | 30                 | 6.5   | 8.1   | 71              | 9                       |
|                              | PSMN7R0-30YL         | 30                 | 7   | 9.1   | 76              | 10                      |
|                              | PSMN7R0-30YLC        | 30                 | 7.1   | 8.9   | 61              | 7.9                     |
|                              | PSMN7R5-30YLD        | 30                 | 7.5   | 10  | 51              | 5.8                     |
| PSMN9R1-30YL                 | 30                   | 9.1                | 14  | 57  | 8.4             |                         |
| PSMN9R5-30YLC                | 30                   | 9.8                | 12  | 44  | 5               |                         |
| PSMN013-30YLC                | 30                   | 13                 | 17  | 32  | 4               |                         |
| PSMN011-30YLC                | 30                   | 11.6               | 15  | 37  | 4.9             |                         |
| PSMN3R2-30YLC                | 30                   | 3.5                | 4.6   | 100   | 14.2            |                         |
| PSMN4R5-30YLC                | 30                   | 4.8                | 6.1   | 84  | 9.6             |                         |
| LFPAK56-UL2595<br>(SOT1023A) | <b>PSMN0R9-30ULD</b> | 30                 | 0.87  | 1.09  | 300             |                         |

## N-channel 25V-30V Power MOSFETs

Types in **bold red** are in development, types in **bold** represent new products

| Package  | Type number          | $V_{DS}$ [max] (V) | $R_{DS(on)}$ [max] @ $V_{GS} = 10$ V (m $\Omega$ ) | $R_{DS(on)}$ [max] @ $V_{GS} = 4.5$ V or 5 V (m $\Omega$ ) | $I_D$ [max] (A) | $Q_{G(tot)}$ [typ] (nC) |
|--|----------------------|--------------------|--|--|-----------------|-------------------------|
| LFPAK33<br>(SOT1210)  | <b>PSMN1R5-25MLH</b> | 25                 | 1  |  |                 |                         |
|  | PSMN2R0-25MLD        | 25                 | 2  | 3.1  | 70              | 15.9                    |
|  | PSMN2R8-25MLC        | 25                 | 2.8  | 3.8  | 70              | 16.3                    |
|  | PSMN3R5-25MLD        | 25                 | 3.51   | 5.4  | 70              | 8.7                     |
|  | PSMN3R9-25MLC        | 25                 | 4.15   | 5.6  | 70              | 9.7                     |
|  | PSMN5R3-25MLD        | 25                 | 5.3  | 8.4  | 70              | 5.9                     |
|  | PSMN6R1-25MLD        | 25                 | 6.13   | 10   | 60              | 4.9                     |
|  | PSMN9R0-25MLC        | 25                 | 8.65   | 11   | 55              | 5.4                     |
|  | <b>PSMN1R6-30MLH</b> | 30                 | 1.9  | 2.6  | 100             | 16                      |
|  | PSMN2R4-30MLD        | 30                 | 2.4  | 3.2  | 70              | 16                      |
|  | PSMN3R0-30MLC        | 30                 | 3.15   | 4.1  | 70              | 16.1                    |
|  | PSMN4R2-30MLD        | 30                 | 4.3  | 5.7  | 70              | 9.2                     |
|  | PSMN4R4-30MLC        | 30                 | 4.65   | 6  | 70              | 10.6                    |
|  | PSMN6R4-30MLD        | 30                 | 6.4  | 8.3  | 66              | 6.5                     |
|  | PSMN6R5-30MLD        | 30                 | 6.5  | 8.6  | 65              | 6.4                     |
|  | PSMN7R0-30MLC        | 30                 | 7  | 9  | 67              | 8.2                     |
|  | PSMN7R5-30MLD        | 30                 | 7.6  | 10   | 57              | 5.8                     |
|  | PSMN9R8-30MLC        | 30                 | 9.8  | 12   | 50              | 5                       |
|  | PSMN013-30MLC        | 30                 | 13   | 17   | 39              | 3.7                     |
|  | PSMN020-30MLC        | 30                 | 18   | 27   | 31.8            | 4.6                     |




## N-channel 40V-60V Power MOSFETs

| Package  | Type number          | $V_{DS}$ [max] (V) | $R_{DS(on)}$ [max] @ $V_{GS} = 10$ V (m $\Omega$ ) | $R_{DS(on)}$ [max] @ $V_{GS} = 4.5$ V or 5 V (m $\Omega$ ) | $I_D$ [max] (A) | $Q_{G(tot)}$ [typ] (nC) |
|--|----------------------|--------------------|--|--|-----------------|-------------------------|
| TO-220<br>(SOT78)     | PSMN1R5-40PS         | 40                 | 1.6  |  | 150             | 136                     |
|  | PSMN1R9-40PL         | 40                 | 1.7  | 1.9  | 150             | 230                     |
|  | PSMN2R2-40PS         | 40                 | 2.1  |  | 100             | 110                     |
|  | PSMN2R1-40PL         | 40                 | 2.2  | 2.6  | 150             | 168.9                   |
|  | PSMN2R8-40PS         | 40                 | 2.8  |  | 100             | 71                      |
|  | PSMN4R5-40PS         | 40                 | 4.6  |  | 100             | 35                      |
|  | PSMN8R0-40PS         | 40                 | 7.6  |  | 77              | 17                      |
|  | PSMN2R0-60PSR        | 60                 | 2  |  | 120             | 137                     |
|  | PSMN2R0-60PS         | 60                 | 2.2  |  | 120             | 137                     |
|  | PSMN2R5-60PL         | 60                 | 2.6  | 3.1  | 150             | 223                     |
|  | PSMN2R6-60PS         | 60                 | 2.6  |  | 150             | 140                     |
|  | PSMN3R0-60PS         | 60                 | 3  |  | 100             | 130                     |
|  | PSMN3R3-60PL         | 60                 | 3.4  | 3.8  | 130             | 175                     |
|  | PSMN4R2-60PL         | 60                 | 3.9  | 4.3  | 130             | 151                     |
|  | PSMN3R9-60PS         | 60                 | 3.9  |  | 130             | 103                     |
|  | PSMN4R6-60PS         | 60                 | 4.6  |  | 100             | 70.8                    |
|  | PSMN7R6-60PS         | 60                 | 7.8  |  | 92              | 38.7                    |
| PSMN015-60PS   | 60                   | 15                 |  | 50   | 20.9            |                         |
| LFPAK88<br>(SOT1235)  | <b>PSMNR70-40SSH</b> | 40                 | 0.7  |  |                 |                         |
|  | <b>PSMNR90-40SSH</b> | 40                 | 0.9  |  |                 |                         |
|  | <b>PSMN1R0-40SSH</b> | 40                 | 1  |  |                 |                         |



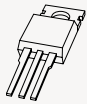
## N-channel 40V-60V Power MOSFETs

Types in **bold red** are in development, types in **bold** represent new products

| Package                        | Type number   | $V_{DS}$ [max] (V)   | $R_{DS(on)}$ [max] @<br>$V_{GS} = 10\text{ V}$ (m $\Omega$ ) | $R_{DS(on)}$ [max] @<br>$V_{GS} = 4.5\text{ V}$ or $5\text{ V}$ (m $\Omega$ ) | $I_D$ [max] (A) | $Q_{G(tot)}$ [typ] (nC) |      |
|--------------------------------|---|----------------------|--|---|-----------------|-------------------------|------|
| D <sup>2</sup> PAK<br>(SOT404) |    | PSMN1R1-40BS         | 40   | 1.3   |                 | 120                     | 136  |
|                                |   | PSMN2R2-40BS         | 40   | 2.2   |                 | 100                     | 130  |
|                                |   | PSMN2R8-40BS         | 40   | 2.9   |                 | 100                     | 71   |
|                                |   | PSMN4R5-40BS         | 40   | 4.5   |                 | 100                     | 35   |
|                                |   | PSMN8R0-40BS         | 40   | 7.6   |                 | 77                      | 21   |
|                                |   | PSMN1R7-60BS         | 60   | 2   |                 | 120                     | 137  |
|                                |   | PSMN3R0-60BS         | 60   | 3.2   |                 | 100                     | 130  |
|                                |   | PSMN4R6-60BS         | 60   | 4.4   |                 | 100                     | 70.8 |
|                                |   | PSMN7R6-60BS         | 60   | 7.8   |                 | 92                      | 38.7 |
|                                |   | PSMN015-60BS         | 60   | 15  |                 | 50                      | 20.9 |
| I <sup>2</sup> PAK<br>(SOT226) |    | PSMN1R5-40ES         | 40   | 1.6   |                 | 120                     | 136  |
|                                |   | PSMN2R0-60ES         | 60   | 2.2   |                 | 120                     | 137  |
|                                |   | PSMN3R0-60ES         | 60   | 3   |                 | 100                     | 130  |
| LFPAK56<br>(Power-SO8)         |  | <b>PSMNR90-40YLH</b> | 40   | 0.9   |                 |                         |      |
|                                |   | <b>PSMN1R0-40YSH</b> | 40   | 1   |                 |                         |      |
|                                |   | PSMN1R0-40YLD        | 40   | 1.1   | 1.4             | 280                     | 127  |
|                                |   | PSMN1R4-40YLD        | 40   | 1.4   | 1.9             | 240                     | 96   |
|                                |   | <b>PSMN1R5-40YSD</b> | 40   | 1.5   |                 |                         |      |
|                                |   | <b>PSMN1R7-40YLD</b> | 40   | 1.7   |                 |                         |      |
|                                |   | PSMN1R8-40YLC        | 40   | 1.8   | 2.1             | 100                     | 96   |
|                                |   | <b>PSMN1R9-40YSD</b> | 40   | 1.9   |                 |                         |      |
|                                |   | <b>PSMN2R0-40YLD</b> | 40   | 2   |                 |                         |      |
|                                |   | <b>PSMN2R2-40YSD</b> | 40   | 2.2   |                 |                         |      |
|                                |   | <b>PSMN2R5-40YLD</b> | 40   | 2.5   |                 |                         |      |
|                                |   | PSMN2R6-40YS         | 40   | 2.8   |                 | 100                     | 63   |
|                                |   | <b>PSMN2R8-40YSD</b> | 40   | 2.8   |                 |                         |      |
|                                |   | <b>PSMN3R2-40YLD</b> | 40   | 3.2   |                 |                         |      |
|                                |   | PSMN3R3-40YS         | 40   | 3.3   |                 | 100                     | 49   |
|                                |   | <b>PSMN3R5-40YLD</b> | 40   | 3.5   |                 |                         |      |
|                                |   | PSMN4R0-40YS         | 40   | 4.2   |                 | 100                     | 38   |
|                                |   | PSMN5R8-40YS         | 40   | 5.7   |                 | 90                      | 28.8 |
|                                |   | PSMN8R3-40YS         | 40   | 8.6   |                 | 70                      | 20   |
|                                |   | PSMN014-40YS         | 40   | 14  |                 | 46                      | 12   |
|                                |   | PSMN4R0-60YS         | 60   | 4   |                 | 100                     | 56   |
|                                |   | PSMN4R1-60YL         | 60   | 4.1   | 4.8             | 100                     | 103  |
|                                |   | PSMN5R2-60YL         | 60   | 5.2   | 6               | 100                     | 78.4 |
|                                |   | PSMN5R5-60YS         | 60   | 5.2   |                 | 100                     | 56   |
|                                |   | PSMN5R6-60YL         | 60   | 5.6   | 7.2             | 100                     | 66.8 |
|                                |   | PSMN7R0-60YS         | 60   | 6.4   |                 | 89                      | 45   |
|                                |   | PSMN7R5-60YL         | 60   | 7.5   | 8.7             | 86                      | 60.6 |
|                                |   | PSMN8R5-60YS         | 60   | 8   |                 | 76                      | 39   |
|                                |   | PSMN012-60YS         | 60   | 11  |                 | 59                      | 28.4 |
|                                |   | PSMN013-60YL         | 60   | 13  | 15              | 53                      | 33.2 |
| PSMN030-60YS                   | 60  | 15                   |  | 29  | 13              |                         |      |
| PSMN017-60YS                   | 60  | 16                   |  | 44  | 20              |                         |      |
| LFPAK56-UL2595<br>(SOT1023A)   |  | <b>PSMN1R0-40ULD</b> | 40   | 1.1   | 1.4             |                         |      |
| LFPAK33<br>(SOT1210)           |  | PSMN011-60ML         | 60   | 11  | 13              | 61                      | 37.2 |
|                                |   | PSMN011-60MS         | 60   | 11  |                 | 61                      | 23   |


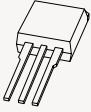
## N-channel 75V-200V Power MOSFETs

| Package           | Type number    | $V_{DS}$ [max] (V) | $R_{DS(on)}$ [max] @ $V_{GS} = 10\text{ V}$ (m $\Omega$ ) | $R_{DS(on)}$ [max] @ $V_{GS} = 4.5\text{ V}$ or $5\text{ V}$ (m $\Omega$ ) | $I_D$ [max] (A) | $Q_{G(tot)}$ [typ] (nC) |
|-------------------|----------------|--------------------|---|--|-----------------|-------------------------|
| TO-220<br>(SOT78) | PSMN3R3-80PS   | 80                 | 3.3   |  | 120             | 139                     |
|                   | PSMN3R5-80PS   | 80                 | 3.5   |  | 120             | 139                     |
|                   | PSMN4R4-80PS   | 80                 | 4.1   |  | 100             | 112                     |
|                   | PSMN4R3-80PS   | 80                 | 4.3   |  | 120             | 111                     |
|                   | PSMN5R0-80PS   | 80                 | 4.7   |  | 100             | 87                      |
|                   | PSMN6R5-80PS   | 80                 | 6.9   |  | 100             | 71                      |
|                   | PSMN8R7-80PS   | 80                 | 8.7   |  | 90              | 52                      |
|                   | PSMN012-80PS   | 80                 | 11  |  | 74              | 36                      |
|                   | PSMN017-80PS   | 80                 | 17  |  | 50              | 26                      |
|                   | PSMN4R3-100PS  | 100                | 4.3   |  | 120             | 170                     |
|                   | PSMN4R8-100PSE | 100                | 4.8   |  | 120             | 196                     |
|                   | PSMN5R0-100PS  | 100                | 5   |  | 120             | 170                     |
|                   | PSMN5R6-100PS  | 100                | 5.6   |  | 100             | 141                     |
|                   | PSMN7R0-100PS  | 100                | 6.8   |  | 100             | 125                     |
|                   | PSMN7R8-100PSE | 100                | 7.8   |  | 100             | 128                     |
|                   | PSMN8R5-100PS  | 100                | 8.5   |  | 100             | 111                     |
|                   | PSMN8R5-100PSF | 100                | 8.5   |  | 98              | 44.5                    |
|                   | PSMN9R5-100PS  | 100                | 9.6   |  | 98              | 45                      |
|                   | PSMN013-100PS  | 100                | 13  |  | 68              | 59                      |
|                   | PSMN016-100PS  | 100                | 16  |  | 57              | 49                      |
|                   | PSMN018-100PSF | 100                | 18  |  | 57              | 21.3                    |
|                   | PSMN027-100PS  | 100                | 27  |  | 53              | 21                      |
|                   | PSMN034-100PS  | 100                | 35  |  | 32              | 23.8                    |
|                   | PSMN015-110P   | 110                | 15  |  | 75              | 90                      |
|                   | PHP27NQ11T     | 110                | 50  |  | 27.6            | 30                      |
|                   | PHP23NQ11T     | 110                | 70  |  | 23              | 22                      |
|                   | PHP18NQ11T     | 110                | 90  |  | 18              | 21                      |
|                   | PSMN6R3-120PS  | 120                | 6.7   |  | 70              | 207.1                   |
|                   | PSMN7R8-120PS  | 120                | 7.9   |  | 70              | 167                     |
|                   | PSMN030-150P   | 150                | 30  |  | 55.5            | 98                      |
|                   | PHP28NQ15T     | 150                | 65  |  | 28.5            | 24                      |
|                   | PSMN057-200P   | 200                | 57  |  | 39              | 96                      |
| PHP33NQ20T        | 200            | 77                 |   | 32.7   | 32.2            |                         |
| PHP20NQ20T        | 200            | 130                |   | 20   | 65              |                         |



## N-channel 75V-200V Power MOSFETs

Types in **bold** represent new products

| Package   | Type number           | $V_{DS}$ [max] (V) | $R_{DS(on)}$ [max] @<br>$V_{GS} = 10\text{ V}$ (m $\Omega$ ) | $R_{DS(on)}$ [max] @<br>$V_{GS} = 4.5\text{ V}$ or $5\text{ V}$ (m $\Omega$ ) | $I_D$ [max] (A) | $Q_{G(tot)}$ [typ] (nC) |
|---|-----------------------|--------------------|--|---|-----------------|-------------------------|
| D <sup>2</sup> PAK<br>(SOT404)<br>   | PSMN2R8-80BS          | 80                 | 3  |   | 120             | 139                     |
|   | PSMN3R3-80BS          | 80                 | 3.5  |   | 120             | 111                     |
|   | PSMN4R4-80BS          | 80                 | 4.5  |   | 100             | 125                     |
|   | PSMN5R0-80BS          | 80                 | 5.1  |   | 100             | 101                     |
|   | PSMN6R5-80BS          | 80                 | 6.9  |   | 100             | 71                      |
|   | PSMN8R7-80BS          | 80                 | 8.7  |   | 90              | 52                      |
|   | PSMN012-80BS          | 80                 | 11   |   | 74              | 36                      |
|   | PSMN017-80BS          | 80                 | 17   |   | 50              | 26                      |
|   | PSMN050-80BS          | 80                 | 46   |   | 22              | 11                      |
|   | PSMN3R8-100BS         | 100                | 3.9  |   | 120             | 170                     |
|   | <b>PSMN3R7-100BSE</b> | 100                | 4  |   | 120             | 170                     |
|   | PSMN4R8-100BSE        | 100                | 4.8  |   | 120             | 196                     |
|   | PSMN5R6-100BS         | 100                | 5.6  |   | 100             | 141                     |
|   | PSMN7R0-100BS         | 100                | 6.8  |   | 100             | 125                     |
|   | PSMN7R6-100BSE        | 100                | 7.6  |   | 75              | 128                     |
|   | PSMN9R5-100BS         | 100                | 9.6  |   | 89              | 82                      |
|   | PSMN013-100BS         | 100                | 14   |   | 68              | 59                      |
|   | PSMN016-100BS         | 100                | 16   |   | 57              | 49                      |
|   | PSMN027-100BS         | 100                | 27   |   | 37              | 30                      |
|   | PSMN034-100BS         | 100                | 35   |   | 32              | 23.8                    |
|   | PHB45NQ15T            | 150                | 42   |   | 45.1            | 32                      |
| PSMN057-200B  | 200                   | 57                 |  | 39  | 96              |                         |
| PHB33NQ20T  | 200                   | 77                 |  | 32.7  | 32.2            |                         |
| I <sup>2</sup> PAK<br>(SOT226)<br> | PSMN3R3-80ES          | 80                 | 3.3  |   | 120             | 139                     |
|   | PSMN3R5-80ES          | 80                 | 3.5  |   | 120             | 139                     |
|   | PSMN4R3-80ES          | 80                 | 4.3  |   | 120             | 111                     |
|   | PSMN4R3-100ES         | 100                | 4.3  |   | 120             | 170                     |
|   | PSMN5R0-100ES         | 100                | 5  |   | 120             | 170                     |
|   | PSMN7R0-100ES         | 100                | 6.8  |   | 100             | 125                     |
|   | PSMN8R5-100ES         | 100                | 8.5  |   | 100             | 111                     |
|   | PSMN8R5-100ESF        | 100                | 8.5  |   | 97              | 45                      |
|   | PSMN018-100ESF        | 100                | 18   |   | 53              | 21                      |
|   | PSMN6R3-120ES         | 120                | 6.7  |   | 70              | 207.1                   |
|   | PSMN7R8-120ES         | 120                | 7.9  |   | 70              | 167                     |

## N-channel 75V-200V Power MOSFETs

Types in **bold red** are in development

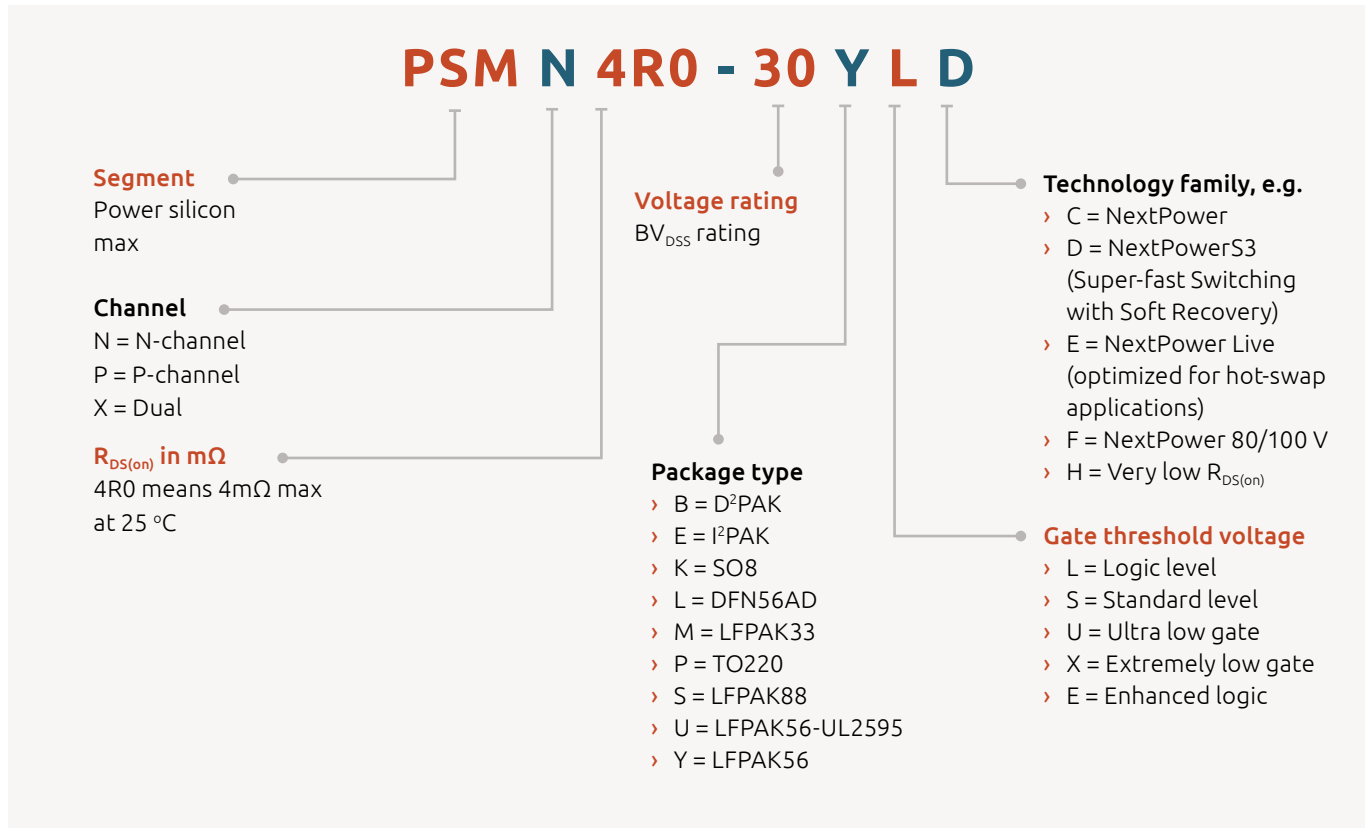
| Package                | Type number           | V <sub>DS</sub> [max] (V) | R <sub>DS(on)</sub> [max] @ V <sub>GS</sub> = 10 V (mΩ) | R <sub>DS(on)</sub> [max] @ V <sub>GS</sub> = 4.5 V or 5 V (mΩ) | I <sub>D</sub> [max] (A) | Q <sub>G(tot)</sub> [typ] (nC) |
|------------------------|-----------------------|---------------------------|---|---|--------------------------|--------------------------------|
| LFPAK56<br>(Power-SO8) | PSMN8R0-80YL          | 80                        | 8   | 8.5   | 100                      | 104                            |
|                        | PSMN8R2-80YS          | 80                        | 8.5   |   | 82                       | 55                             |
|                        | PSMN010-80YL          | 80                        | 10  | 11  | 84                       | 84.7                           |
|                        | PSMN011-80YS          | 80                        | 11  |   | 67                       | 45                             |
|                        | PSMN013-80YS          | 80                        | 12.9  |   | 60                       | 37                             |
|                        | PSMN014-80YL          | 80                        | 14  | 15  | 62                       | 56.9                           |
|                        | PSMN018-80YS          | 80                        | 18  |   | 45                       | 26                             |
|                        | PSMN025-80YL          | 80                        | 25  | 27  | 37                       | 34.3                           |
|                        | PSMN026-80YS          | 80                        | 28  |   | 34                       | 20                             |
|                        | PSMN041-80YL          | 80                        | 41  | 45  | 25                       | 21.9                           |
|                        | PSMN045-80YS          | 80                        | 45  |   | 24                       | 12.5                           |
|                        | <b>PSMN3R9-100YSF</b> | 100                       | 4   |   |                          |                                |
|                        | PSMN5R6-100YSF        | 100                       | 5.6   |   | 158                      | 63                             |
|                        | PSMN6R9-100YSF        | 100                       | 6.9   |   | 128                      | 51                             |
|                        | PSMN8R7-100YSF        | 100                       | 8.7   |   | 100                      | 39                             |
|                        | <b>PSMN011-100YSF</b> | 100                       | 10.6  |   |                          |                                |
|                        | PSMN012-100YL         | 100                       | 12  | 12  | 85                       | 118                            |
|                        | PSMN012-100YS         | 100                       | 12  |   | 60                       | 64                             |
|                        | PSMN013-100YSE        | 100                       | 13  |   | 82                       | 75                             |
|                        | PSMN015-100YL         | 100                       | 15  | 15  | 69                       | 86.3                           |
|                        | PSMN016-100YS         | 100                       | 16  |   | 51                       | 54                             |
|                        | PSMN019-100YL         | 100                       | 19  | 19  | 56                       | 72.4                           |
|                        | PSMN021-100YL         | 100                       | 21  | 22  | 49                       | 65.6                           |
|                        | PSMN020-100YS         | 100                       | 21  |   | 43                       | 41                             |
|                        | PSMN028-100YS         | 100                       | 28  |   | 42                       | 33                             |
|                        | PSMN038-100YL         | 100                       | 38  | 38  | 30                       | 39.2                           |
| PSMN039-100YS          | 100                   | 39                        |   | 28.1  | 23                       |                                |
| PSMN069-100YS          | 100                   | 72                        |   | 17  | 14                       |                                |
| PSMN059-150Y           | 150                   | 59                        |   | 43  | 27.9                     |                                |
| PSMN102-200Y           | 200                   | 102                       |   | 21.5  | 30.7                     |                                |
| LFPAK33<br>(SOT1210)   | PSMN040-100MSE        | 100                       | 37  |   | 30                       | 30                             |
|                        | PSMN075-100MSE        | 100                       | 71  |   | 18                       | 16.4                           |
| SOT873                 | PML260SN              | 200                       | 294   |   | 8.8                      | 13.3                           |
|                        | PML340SN              | 220                       | 386   |   | 7.3                      | 13.2                           |

## P-channel Power MOSFETs

Types in **bold** represent new products



| Package | Type number         | V <sub>DS</sub> [max] (V) | R <sub>DS(on)</sub> [max] @ V <sub>GS</sub> = 10 V (mΩ) | I <sub>D</sub> [max] (A) | Q <sub>G(tot)</sub> [typ] (nC) |
|---------|---------------------|---------------------------|---|--------------------------|--------------------------------|
| LFPAK56 | <b>PSMP012-30YE</b> | 30                        | 12  | 67                       | 52                             |
|         | <b>PSMP020-30YE</b> | 30                        | 20  | 41                       | 24                             |
|         | <b>PSMP015-40YE</b> | 40                        | 15  | 63                       | 43.5                           |
|         | <b>PSMP025-40YE</b> | 40                        | 25  | 39                       | 28                             |
|         | <b>PSMP032-60YE</b> | 60                        | 32  | 39                       | 46                             |
|         | <b>PSMP057-60YE</b> | 60                        | 57  | 23                       | 21                             |

## Power MOSFETs nomenclature




## Small-signal MOSFETs

### Small-signal MOSFETs in DFN1006 and DFN1006B packages



| Package   |                     |                     |                    |                             |                             |                          |                           |                         |                     |  | DFN1006-3 (SOT883)  | DFN1006B-3 (SOT883B)  |       |       |       |            |             |
|-----------|---------------------|---------------------|--------------------|-----------------------------|-----------------------------|--------------------------|---------------------------|-------------------------|---------------------|--|---|---|-------|-------|-------|------------|-------------|
|           |                     |                     |                    |                             |                             |                          |                           |                         |                     |  |  |  |       |       |       |            |             |
| Size (mm) |                     |                     |                    |                             |                             |                          |                           |                         |                     |  | 1.0 x 0.6 x 0.48  | 1.0 x 0.6 x 0.37  |       |       |       |            |             |
| Ptot (mW) |                     |                     |                    |                             |                             |                          |                           |                         |                     |  | 250   | 250   |       |       |       |            |             |
| Polarity  | V <sub>DS</sub> (V) | V <sub>GS</sub> (V) | I <sub>D</sub> (A) | V <sub>GS(th) min</sub> (V) | V <sub>GS(th) max</sub> (V) | t <sub>on</sub> typ (ns) | t <sub>off</sub> typ (ns) | Q <sub>G</sub> typ (nC) | ESD protection (kV) | R <sub>DS(on)</sub> typ (mΩ) @ V <sub>GS</sub> = |   |   |       |       |       |            |             |
|           |                     |                     |                    |                             |                             |                          |                           |                         |                     | 10 V   | 4.5 V   | 2.5 V   | 1.8 V | 1.5 V | 1.2 V |            |             |
| N-channel | 20                  | 8                   | 1.9                | 0.45                        | 0.95                        | 5.3                      | 16                        | 1.6                     | 2                   | -  | 120   | 160   | 210   | 270   | -     | PMZ130UNE  |             |
|           |                     |                     | 1.6                | 0.45                        | 0.95                        | 5.3                      | 16                        | 1.6                     | 2                   | -  | 170   | 200   | 240   | 300   | -     |            | PMZB150UNE  |
|           |                     |                     | 1                  | 0.5                         | 0.95                        | 6                        | 86                        | 0.45                    | 2                   | -  | 270   | 360   | 470   | 600   | -     | PMZ290UNE2 | PMZB290UNE2 |
|           |                     |                     | 0.6                | 0.45                        | 0.95                        | 5.6                      | 19                        | 0.4                     | 1                   | -  | 470   | 620   | 845   | 1125  | 2210  | PMZ600UNE  | PMZB600UNE  |
|           | 30                  | 8                   | 1.5                | 0.45                        | 0.95                        | 5                        | 17                        | 1.6                     | 2                   | -  | 210   | 240   | 270   | 300   | -     | PMZ200UNE  | PMZB200UNE  |
|           |                     |                     | 1                  | 0.45                        | 0.95                        | 4                        | 12                        | 0.8                     | 2                   | -  | 390   | 460   | 30    | 610   | -     | PMZ390UNE  | PMZB390UNE  |
|           |                     |                     | 0.59               | 0.45                        | 0.95                        | 4                        | 12                        | 0.6                     | 2                   | -  | 550   | 660   | 770   | 890   | -     | PMZ550UNE  | PMZB550UNE  |
|           | 60                  | 20                  | 0.45               | 1.1                         | 2.1                         | 5                        | 12                        | 0.5                     | 2                   | 1000   | 1300  | -   | -     | -     | -     | 2N700BKM   | 2N7002BKMB  |
|           |                     |                     | 0.35               | 1.1                         | 2.1                         | 4.7                      | 6.9                       | 1                       | 2                   | 2200   | 2500  | -   | -     | -     | -     | NX7002BKM  | NX7002BKMB  |
| P-channel | 20                  | 8                   | 1.4                | 0.45                        | 0.95                        | 4                        | 26                        | 1.3                     | 1.8                 | -  | 330   | 420   | 520   | -     | -     | PMZ350UPE  | PMZB350UPE  |
|           |                     |                     | 0.5                | 0.45                        | 0.95                        | 2.3                      | 13.5                      | 1.19                    | 1                   | -  | 1020  | 1270  | 1700  | 2300  | 3500  | PMZ950UPE  | PMZB950UPE  |
|           | 30                  | 8                   | 1                  | 0.45                        | 0.95                        | 2.9                      | 22                        | 1.45                    | 2                   | -  | 430   | 470   | 750   | 950   | -     | PMZ320UPE  | PMZB320UPE  |
|           |                     |                     | 0.41               | 0.45                        | 0.95                        | 3                        | 14                        | 0.7                     | 2                   | -  | 1200  | 1700  | 2100  | 3000  | -     | PMZ1200UPE | PMZB1200UPE |
|           | 50                  | 20                  | 0.23               | 1.1                         | 2.1                         | 13                       | 48                        | 0.26                    | 1                   | 4500   | 5700  | -   | -     | -     | -     | BSS84AKM   | BSS84AKMB   |

### Small-signal MOSFETs in DFN0606




Types in **bold** represent new products

| Package   |                     |                     |                    |                             |                             |                          |                           |                         |                     |  | DFN0606-3 (SOT8001)   |       |       |       |       |                   |  |
|-----------|---------------------|---------------------|--------------------|-----------------------------|-----------------------------|--------------------------|---------------------------|-------------------------|---------------------|--|---|-------|-------|-------|-------|-------------------|--|
|           |                     |                     |                    |                             |                             |                          |                           |                         |                     |  |  |       |       |       |       |                   |  |
| Size (mm) |                     |                     |                    |                             |                             |                          |                           |                         |                     |  | 0.6 x 0.6 x 0.37  |       |       |       |       |                   |  |
| Ptot (mW) |                     |                     |                    |                             |                             |                          |                           |                         |                     |  | 250   |       |       |       |       |                   |  |
| Polarity  | V <sub>DS</sub> (V) | V <sub>GS</sub> (V) | I <sub>D</sub> (A) | V <sub>GS(th) min</sub> (V) | V <sub>GS(th) max</sub> (V) | t <sub>on</sub> typ (ns) | t <sub>off</sub> typ (ns) | Q <sub>G</sub> typ (nC) | ESD protection (kV) | R <sub>DS(on)</sub> typ (mΩ) @ V <sub>GS</sub> = |   |       |       |       |       |                   |  |
|           |                     |                     |                    |                             |                             |                          |                           |                         |                     | 10 V   | 4.5 V   | 2.5 V | 1.8 V | 1.5 V | 1.2 V |                   |  |
| N-channel | 20                  | 8                   |                    | 0.45                        | 0.95                        | 5.6                      | 19                        | 0.4                     | 1                   | -  | 470   | 620   | 845   | 1125  | 2210  | <b>PMH600UNE</b>  |  |
|           | 30                  | 8                   |                    | 0.45                        | 0.95                        | 4                        | 12                        | 0.6                     | 2                   | -  | 550   | 660   | 770   | 890   | -     | <b>PMH550UNE</b>  |  |
|           | 60                  | 20                  |                    | 1.1                         | 2.1                         | 4.7                      | 6.9                       | 1                       | 2                   | 2200   | 2500  | -     | -     | -     | -     | <b>NX7002BKH</b>  |  |
| P-channel | 20                  | 8                   |                    | 0.45                        | 0.95                        | 2.3                      | 13.5                      | 1.19                    | 1                   | -  | 1020  | 1270  | 1700  | 2300  | 3500  | <b>PMH950UPE</b>  |  |
|           | 30                  | 10                  |                    | 0.45                        | 0.95                        | 3                        | 14                        | 0.7                     | 2                   | -  | 1200  | 1700  | 2100  | 3000  | -     | <b>PMH1200UPE</b> |  |

Small-signal MOSFETs in DFN1010D-3 single and DFN1010B-3 dual packages



| Package               |           |                        |                        |                       |                                   |                                   |                                |                                 |                            |                           |  | DFN1010D-3<br>(SOT1215)   | DFN1010B-6<br>(SOT1216)   |       |       |             |            |              |
|-----------------------|-----------|------------------------|------------------------|-----------------------|-----------------------------------|-----------------------------------|--------------------------------|---------------------------------|----------------------------|---------------------------|--|---|---|-------|-------|-------------|------------|--------------|
|                       |           |                        |                        |                       |                                   |                                   |                                |                                 |                            |                           |  |  |  |       |       |             |            |              |
| Size (mm)             |           |                        |                        |                       |                                   |                                   |                                |                                 |                            |                           |  | 1.1 x 1.0 x 0.37  | 1.1 x 1.0 x 0.37  |       |       |             |            |              |
| P <sub>tot</sub> (mW) |           |                        |                        |                       |                                   |                                   |                                |                                 |                            |                           |  | 1000  | 350   |       |       |             |            |              |
| Configuration         | Polarity  | V <sub>DS</sub><br>(V) | V <sub>GS</sub><br>(V) | I <sub>D</sub><br>(A) | V <sub>GS(th)</sub><br>min<br>(V) | V <sub>GS(th)</sub><br>max<br>(V) | t <sub>on</sub><br>typ<br>(ns) | t <sub>off</sub><br>typ<br>(ns) | Q <sub>c</sub> typ<br>(nC) | ESD<br>protection<br>(kV) | R <sub>DS(on)</sub> typ (mΩ) @ V <sub>GS</sub> = |   |   |       |       |             |            |              |
|                       |           |                        |                        |                       |                                   |                                   |                                |                                 |                            |                           | 10 V   | 4.5 V   | 2.5 V   | 1.8 V | 1.5 V | 1.2 V       |            |              |
| Single                | N-channel | 12                     | 8                      | 3.2                   | 0.4                               | 0.9                               | 6                              | 18                              | 6.6                        | 1                         | -  | 34  | 39  | 46    | 50    | 121         | PMXB40UNE  |              |
|                       |           | 20                     | 8                      | 3.2                   | 0.5                               | 0.9                               | 6                              | 17                              | 5.7                        | 1                         | -  | 42  | 48  | 56    | 64    | -           | PMXB43UNE  |              |
|                       |           | 30                     | 20                     | 3.2                   | 1                                 | 2                                 | 3                              | 11                              | 3.6                        | -                         | 49   | 56  | -   | -     | -     | -           | PMXB56EN   |              |
|                       |           |                        |                        | 3.2                   | 1                                 | 2.5                               | 3                              | 11                              | 6                          | 1                         | 44   | 56  | -   | -     | -     | -           | PMXB65ENE  |              |
|                       | 80        | 20                     | 1.1                    | 1.3                   | 2.7                               | 2                                 | 9                              | 3                               | 2                          | 345                       | 390  | -   | -   | -     | -     | PMXB360ENEA |            |              |
|                       | P-channel | 12                     | 8                      | 3.2                   | 0.4                               | 1                                 | 6.2                            | 27                              | 6.7                        | 1.5                       | -  | 59  | 78  | 120   | 198   | 880         | PMXB65UPE  |              |
|                       |           | 20                     | 8                      | 2.9                   | 0.4                               | 1                                 | 6                              | 29                              | 6.8                        | 1                         | -  | 69  | 86  | 130   | 205   | 950         | PMXB75UPE  |              |
|                       |           |                        |                        | 1.2                   | 0.45                              | 0.95                              | 3                              | 18                              | 1.25                       | 1.5                       | -  | 350   | 450   | 600   | 760   | 1200        | PMXB350UPE |              |
| 30                    |           | 20                     | 2.4                    | 1                     | 2.5                               | 4                                 | 16                             | 6.2                             | 1                          | 100                       | 125  | -   | -   | -     | -     | PMXB120EPE  |            |              |
| Dual                  | N-ch      | 20                     | 8                      | 0.6                   | 0.45                              | 0.95                              | 5.6                            | 19                              | 0.4                        | 1                         | -  | 470   | 620   | 845   | 1125  | 2210        |            | PMDXB600UNE  |
|                       |           | 30                     | 8                      | 0.59                  | 0.45                              | 0.95                              | 4                              | 12                              | 0.6                        | 2                         | -  | 550   | 660   | 770   | 890   | -           |            | PMDXB550UNE  |
|                       |           | 60                     | 20                     | 0.26                  | 1.1                               | 2.1                               | 4.7                            | 6.9                             | 1                          | 2                         | 2200   | 2500  | -   | -     | -     | -           |            | NX7002BKXB   |
|                       | P-ch      | 20                     | 8                      | 0.5                   | 0.45                              | 0.95                              | 2.3                            | 13.5                            | 1.19                       | 1                         | -  | 1020  | 1270  | 1700  | 2300  | 3500        |            | PMDXB950UPE  |
|                       |           | 30                     | 8                      | 0.41                  | 0.45                              | 0.95                              | 3                              | 14                              | 0.7                        | 2                         | -  | 1200  | 1700  | 2100  | 3000  | -           |            | PMDXB1200UPE |
|                       |           |                        |                        |                       |                                   |                                   |                                |                                 |                            |                           |  |   |   |       |       |             |            |              |
| Complementary         | N         | 20                     | 8                      | 0.6                   | 0.45                              | 0.95                              | 5.6                            | 19                              | 0.4                        | 1                         | -  | 470   | 620   | 845   | 1125  | 2210        |            |              |
|                       | P         | 20                     | 8                      | 0.5                   | 0.45                              | 0.95                              | 2.3                            | 13.5                            | 1.19                       | 1                         | -  | 1020  | 1270  | 1700  | 2300  | 3500        |            | PMCXB900UE   |
|                       | N         | 30                     | 8                      | 0.59                  | 0.45                              | 0.95                              | 4                              | 12                              | 0.6                        | 2                         | -  | 550   | 660   | 770   | 890   | -           |            |              |
|                       | P         | 30                     | 8                      | 0.41                  | 0.45                              | 0.95                              | 3                              | 14                              | 0.7                        | 2                         | -  | 1200  | 1700  | 2100  | 3000  | -           |            | PMCXB1000UE  |

Small-signal low-leakage MOSFETs

| Package               |          |                        |                        |                       |                                   |                                   |                                 |                                 |                           |  |       | DFN1006-3<br>(SOT883)   | DFN1006B-3<br>(SOT883B)   | DFN1010B-6<br>(SOT1216)   |            |             |              |
|-----------------------|----------|------------------------|------------------------|-----------------------|-----------------------------------|-----------------------------------|---------------------------------|---------------------------------|---------------------------|--|-------|---|---|---|------------|-------------|--------------|
|                       |          |                        |                        |                       |                                   |                                   |                                 |                                 |                           |  |       |  |  |  |            |             |              |
| Size (mm)             |          |                        |                        |                       |                                   |                                   |                                 |                                 |                           |  |       | 1.0 x 0.6 x 0.48  | 1.0 x 0.6 x 0.37  | 1.1 x 1.0 x 0.37  |            |             |              |
| P <sub>tot</sub> (mW) |          |                        |                        |                       |                                   |                                   |                                 |                                 |                           |  |       | 250   | 250   | 350   |            |             |              |
| ConFig.               | Polarity | V <sub>DS</sub><br>(V) | V <sub>GS</sub><br>(V) | I <sub>D</sub><br>(A) | V <sub>GS(th)</sub><br>min<br>(V) | V <sub>GS(th)</sub><br>max<br>(V) | I <sub>DSS</sub><br>max<br>(nA) | I <sub>GSS</sub><br>max<br>(nA) | ESD<br>Protection<br>(kV) | R <sub>DS(on)</sub> typ (mΩ) @ V <sub>GS</sub> = |       |   |   |   |            |             |              |
|                       |          |                        |                        |                       |                                   |                                   |                                 |                                 |                           | 4.5 V  | 2.5 V | 1.8 V   | 1.5 V   | 1.2 V   |            |             |              |
| Single                | N        | 20                     | 8                      | 0.6                   | 0.45                              | 0.95                              | 25                              | 50                              | 1                         | 470  | 620   | 845   | 1125  | 2210  | PMZ600UNEL | PMZB600UNEL |              |
|                       | P        | 20                     | 8                      | 0.5                   | 0.45                              | 0.95                              | 25                              | 50                              | 1                         | 1020   | 1270  | 1700  | 2300  | 3500  | PMZ950UPEL | PMZB950UPEL |              |
| Dual                  | N        | 20                     | 8                      | 0.6                   | 0.45                              | 0.95                              | 25                              | 50                              | 1                         | 470  | 620   | 845   | 1125  | 2210  |            |             | PMDXB600UNEL |
|                       | P        | 20                     | 8                      | 0.5                   | 0.45                              | 0.95                              | 25                              | 50                              | 1                         | 1020   | 1270  | 1700  | 2300  | 3500  |            |             | PMDXB950UPEL |
| Compl.                | N        | 20                     | 8                      | 0.6                   | 0.45                              | 0.95                              | 25                              | 50                              | 1                         | 470  | 620   | 845   | 1125  | 2210  |            |             |              |
|                       | P        | 20                     | 8                      | 0.5                   | 0.45                              | 0.95                              | 25                              | 50                              | 1                         | 1020   | 1270  | 1700  | 2300  | 3500  |            |             | PMCXB900UEL  |



Small-signal MOSFETs in DFN2020MD-6 single and DFN2020-6 dual packages

Types in **bold** represent new products

| Package               |           |                     |                     |                    |                             |                             |                          |                           |                         |                     |  |       |       |                 | DFN2020MD-6<br>(SOT1220)  | DFN2020-6<br>(SOT1118)  |                 |  |  |             |
|-----------------------|-----------|---------------------|---------------------|--------------------|-----------------------------|-----------------------------|--------------------------|---------------------------|-------------------------|---------------------|--|-------|-------|-----------------|---|---|-----------------|--|--|-------------|
|                       |           |                     |                     |                    |                             |                             |                          |                           |                         |                     |  |       |       |                 |  |  |                 |  |  |             |
| Size (mm)             |           |                     |                     |                    |                             |                             |                          |                           |                         |                     |  |       |       |                 | 2.0 x 2.0 x 0.65  | 2.0 x 2.0 x 0.65  |                 |  |  |             |
| P <sub>tot</sub> (mW) |           |                     |                     |                    |                             |                             |                          |                           |                         |                     |  |       |       |                 | 1250  | 1250  |                 |  |  |             |
| Configuration         | Polarity  | V <sub>DS</sub> (V) | V <sub>GS</sub> (V) | I <sub>D</sub> (A) | V <sub>GS(th)</sub> min (V) | V <sub>GS(th)</sub> max (V) | t <sub>on</sub> typ (ns) | t <sub>off</sub> typ (ns) | Q <sub>G</sub> typ (nC) | ESD protection (kV) | R <sub>DS(on)</sub> typ (mΩ) @ V <sub>GS</sub> = |       |       |                 |   |   |                 |  |  |             |
|                       |           |                     |                     |                    |                             |                             |                          |                           |                         |                     | 10 V   | 4.5 V | 2.5 V | 1.8 V           |   |   |                 |  |  |             |
| Single                | N-channel | 20                  | 8                   | 11.3               | 0.4                         | 1                           | 9                        | 26                        | 8.8                     | 1                   | -  | 14    | 17    | 21              | PMPB12UNE   |   |                 |  |  |             |
|                       |           |                     |                     | 12.9               | 0.4                         | 0.9                         | 13                       | 54                        | 23                      | 2.2                 | -  | 10    | 12    | 16              | PMPB10XNE   |   |                 |  |  |             |
|                       |           |                     | 12                  | 5.9                | 0.75                        | 1.25                        | 16                       | 49                        | 31                      | 2                   | -  | 14    | 20    | -               | PMPB20XNEA  |   |                 |  |  |             |
|                       |           |                     |                     | 10.4               | 0.4                         | 0.9                         | 9                        | 31                        | 13.4                    | -                   | -  | 18    | 21    | 23              | PMPB15XN  |   |                 |  |  |             |
|                       |           |                     |                     | 10.1               | 0.4                         | 0.9                         | 9                        | 31                        | 11.6                    | 2                   | -  | 19    | 23    | 31              | PMPB23XNE   |   |                 |  |  |             |
|                       |           | 30                  | 12                  | 11.3               | 0.4                         | 0.9                         | 12                       | 54                        | 24                      | 1                   | -  | 13    | 14    | 17              | PMPB13XNE   |   |                 |  |  |             |
|                       |           |                     |                     | 5                  | 0.4                         | 0.9                         | 8                        | 33                        | 12.4                    | 1                   | -  | 28    | 32    | 37              | PMPB29XNE   |   |                 |  |  |             |
|                       |           |                     |                     | 5.5                | 0.45                        | 1.2                         | 6                        | 21                        | 5.1                     | -                   | -  | 37    | 55    | -               | PMPB33XN  |   |                 |  |  |             |
|                       |           |                     | 20                  | 13                 | 1                           | 2                           | 9                        | 17                        | 13.7                    | -                   | 12   | 14    | -     | -               | PMPB11EN  |   |                 |  |  |             |
|                       |           |                     |                     | 10.4               | 1                           | 2                           | 9                        | 9                         | 7.2                     | -                   | 16.5   | 20.5  | -     | -               | PMPB20EN  |   |                 |  |  |             |
|                       |           |                     |                     | 10                 | 1                           | 2.5                         | 6                        | 28                        | 13                      | 2                   | 17   | 28    | -     | -               | <b>PMPB25ENE</b>  |   |                 |  |  |             |
|                       |           | 60                  | 20                  | 6.9                | 1                           | 2.5                         | 4                        | 17                        | 6                       | 2                   | 30   | 39    | -     | -               | <b>PMPB50ENE</b>  |   |                 |  |  |             |
|                       |           |                     |                     | 5.1                | 1                           | 2.5                         | 3                        | 15                        | 3.5                     | 2                   | 54   | 70    | -     | -               | <b>PMPB100ENE</b>   |   |                 |  |  |             |
|                       |           |                     | 80                  | 4                  | 1.3                         | 2.7                         | 4.5                      | 13.5                      | 7.5                     | 2                   | 42   | 48    | -     | -               | PMPB55ENE   |   |                 |  |  |             |
|                       |           |                     |                     | 3                  | 1.3                         | 2.7                         | 4                        | 10.5                      | 6.2                     | 2                   | 72   | 85    | -     | -               | PMPB85ENE   |   |                 |  |  |             |
|                       |           |                     |                     | 2.8                | 1.3                         | 2.7                         | 5                        | 15                        | 9.9                     | 2                   | 80   | 92    | -     | -               | PMPB95ENE   |   |                 |  |  |             |
|                       |           | P-channel           | 20                  | 12                 | 8                           | 12.7                        | 0.45                     | 0.9                       | 6                       | 64                  | 22   | -     | -     | 14              | 19  | 24  | <b>PMPB14XP</b> |  |  |             |
|                       |           |                     |                     |                    | 10.3                        | 0.47                        | 0.9                      | 16                        | 43                      | 28.8                | -  | -     | 19    | 21              | 27  | PMPB19XP  |                 |  |  |             |
|                       | 12        |                     |                     | 10.3               | 0.47                        | 0.9                         | 13                       | 92                        | 30                      | 2.4                 | -  | 19    | 22    | 28              | PMPB20XPE   |   |                 |  |  |             |
|                       |           |                     |                     | 5                  | 0.47                        | 0.9                         | 12                       | 91                        | 30                      | 2.3                 | -  | 28    | 31    | 36              | PMPB29XPE   |   |                 |  |  |             |
|                       |           |                     |                     | 8.5                | 0.75                        | 1.25                        | 10                       | 43                        | 12.5                    | 2                   | -  | 29    | 45    | -               | <b>PMPB30XPE</b>  |   |                 |  |  |             |
|                       |           |                     |                     | 7.9                | 0.47                        | 0.9                         | 12                       | 62                        | 15                      | -                   | -  | 30    | 35    | 45              | PMPB33XP  |   |                 |  |  |             |
|                       | 30        |                     | 12                  | 5                  | 0.47                        | 0.9                         | 9                        | 57                        | 15.6                    | 1                   | -  | 39    | 45    | 56              | PMPB43XPE   |   |                 |  |  |             |
|                       |           |                     |                     | 5                  | 0.47                        | 0.9                         | 15                       | 28                        | 14                      | -                   | -  | 47    | 54    | 74              | PMPB47XP  |   |                 |  |  |             |
| 9.5                   |           |                     |                     | 1                  | 2.5                         | 3                           | 28                       | 19                        | -                       | 24                  | 32   | -     | -     | <b>PMPB24EP</b> |   |   |                 |  |  |             |
| 20                    |           |                     | 6.8                 | 1                  | 2.5                         | 7.4                         | 27                       | 17                        | -                       | 40                  | 55   | -     | -     | PMPB48EP        |   |   |                 |  |  |             |
|                       |           |                     | 30                  | 12                 | 5.3                         | 0.4                         | 0.9                      | 4                         | 40                      | 14.4                | -  | -     | 32    | 40              | 60  |   | PMDPB30XN       |  |  |             |
|                       |           |                     |                     | 3.1                | 0.75                        | 1.25                        | 9                        | 19                        | 2.9                     | 2                   | -  | 55    | 72    | -               |   | PMDPB56XNEA   |                 |  |  |             |
| Dual                  | Nch       | 20                  | 12                  | 3.1                | 0.5                         | 1.5                         | 6                        | 18                        | 1.65                    | 1.8                 | -  | 95    | 130   | -               |   | PMDPB95XNE2   |                 |  |  |             |
|                       |           |                     |                     | 4.5                | 0.45                        | 0.95                        | 7                        | 41                        | 6.3                     | 2                   | -  | 58    | 74    | 97              |   | PMDPB58UPE  |                 |  |  |             |
|                       |           | 3.7                 | 0.45                | 0.95               | 6                           | 47                          | 5.4                      | 2                         | -                       | 82                  | 107  | 142   |       | PMDPB85UPE      |   |   |                 |  |  |             |
|                       | P-channel | 20                  | 8                   | 4.5                | 0.47                        | 0.9                         | 4                        | 135                       | 16.5                    | -                   | -  | 55    | 75    | 110             |   | PMDPB55XP   |                 |  |  |             |
|                       |           |                     |                     | 4.2                | 0.75                        | 1.25                        | 7                        | 33                        | 5                       | 2                   | -  | 66    | 98    |                 |   | PMDPB70XPE  |                 |  |  |             |
|                       |           |                     | 3.7                 | 0.4                | 1                           | 6                           | 120                      | 5.7                       | -                       | -                   | 80   | 95    | 120   |                 |   | PMDPB80XP   |                 |  |  |             |
|                       |           | 30                  | 12                  | 3.8                | 0.45                        | 1                           | 3                        | 112                       | 5.2                     | -                   | -  | 70    | 89    | -               |   |   | PMDPB70XP       |  |  |             |
|                       |           |                     |                     | MOSFET-Schottky    | P-channel                   | 20                          | 12                       | 3.7                       | 0.4                     | 1                   | 6  | 120   | 5.7   | -               | 80  | 95  | 120             |  |  | PMFPB8032XP |
|                       |           |                     |                     | Pre-biased NPN     | P                           | 30                          | 12                       | 3.4                       | 0.45                    | 1                   | 3  | 112   | 5.2   | -               | 85  | 105   | -               |  |  | PMC85XP     |
| Complementary         | N         | 20                  | 12                  | 5.3                | 0.4                         | 0.9                         | 4                        | 40                        | 14.4                    | -                   | -  | 26    | 33    | 50              |   |   | PMCPB5530X      |  |  |             |
|                       | P         | 20                  | 12                  | 4.5                | 0.4                         | 0.9                         | 4                        | 40                        | 8.1                     | -                   | -  | 55    | 75    | 110             |   |   |                 |  |  |             |



## Small-signal MOSFETs in WLCSP4 and WLCSP6 packages

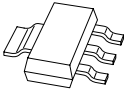



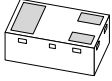
| Package               |              |                     |                     |                    |                             |                             |                          |                           |                         |                     |  |       |       |       | WLCSP4  | WLCSP6  |
|-----------------------|--------------|---------------------|---------------------|--------------------|-----------------------------|-----------------------------|--------------------------|---------------------------|-------------------------|---------------------|--|-------|-------|-------|---|---|
|                       |              |                     |                     |                    |                             |                             |                          |                           |                         |                     |  |       |       |       |  |  |
| Size (mm)             |              |                     |                     |                    |                             |                             |                          |                           |                         |                     |  |       |       |       | 0.78 x 0.78 x 0.35  | 1.48 x 0.98 x 0.35  |
| P <sub>tot</sub> (mW) |              |                     |                     |                    |                             |                             |                          |                           |                         |                     |  |       |       |       | 1300  | 1300  |
| Configuration         | Polarity     | V <sub>DS</sub> (V) | V <sub>GS</sub> (V) | I <sub>D</sub> (A) | V <sub>GS(th)</sub> min (V) | V <sub>GS(th)</sub> max (V) | t <sub>on</sub> typ (ns) | t <sub>off</sub> typ (ns) | Q <sub>c</sub> typ (nC) | ESD protection (kV) | R <sub>DS(on)</sub> typ (mΩ) @ V <sub>GS</sub> = |       |       |       |   |   |
|                       |              |                     |                     |                    |                             |                             |                          |                           |                         |                     | 4.5 V  | 2.5 V | 1.8 V | 1.5 V |   |   |
|                       | N            | 12                  | 8                   | 6                  | 0.4                         | 0.9                         | 6.3                      | 30                        | 6                       | 2                   | 36   | 46    | 60    | 86    | PMCM4401VNE   |   |
|                       |              | 20                  | 8                   | 5.4                | 0.4                         | 0.9                         | 4                        | 27                        | 6                       | 2                   | 43   | 55    | 65    | 75    | PMCM4401UNE   |   |
|                       | P            | 12                  | 8                   | 4.9                | 0.4                         | 0.9                         | 4.8                      | 25.1                      | 6.8                     | 2                   | 55   | 77    | 110   | -     | PMCM4401VPE   |   |
|                       |              | 20                  | 8                   | 4                  | 0.4                         | 0.9                         | 4                        | 31                        | 5.9                     | 2                   | 75   | 95    | 130   | -     | PMCM4401UPE   |   |
|                       |              |                     |                     | 4.2                | 0.4                         | 0.9                         | 4                        | 26                        | 6                       | 2                   | 65   | 88    | 120   | -     | PMCM4402UPE   |   |
|                       | N            | 12                  | 8                   | 9.6                | 0.4                         | 0.9                         | 10.8                     | 97.5                      | 16.1                    | 2                   | 15   | 18    | 22    | 30    |   | PMCM6501VNE   |
|                       |              | 20                  | 8                   | 8.7                | 0.4                         | 0.9                         | 7                        | 100                       | 19                      | 2                   | 17   | 20    | 22    | 30    |   | PMCM6501UNE   |
|                       | P            | 12                  | 8                   | 8.2                | 0.4                         | 0.9                         | 8                        | 72                        | 19.6                    | 2                   | 19   | 25    | 37    | -     |   | PMCM6501VPE   |
|                       |              | 20                  | 8                   | 7.3                | 0.4                         | 0.9                         | 6                        | 105                       | 19                      | 2                   | 22   | 28    | 38    | -     |   | PMCM6501UPE   |
|                       | Common drain | N                   | 20                  | 8                  | 4.1                         | 0.4                         | 0.9                      | 6                         | 39                      | 9                   | 2  | 40    | 50    | 63    | -   |   |

# Small-signal MOSFETs

## Small-signal MOSFETs single (N-channel)

| Package               |                     |                    |                             |                             |                          |                           |                         |                     |  |       |       |       |  |
|-----------------------|---------------------|--------------------|-----------------------------|-----------------------------|--------------------------|---------------------------|-------------------------|---------------------|--|-------|-------|-------|--|
| Size (mm)             |                     |                    |                             |                             |                          |                           |                         |                     |  |       |       |       |  |
| P <sub>tot</sub> (mW) |                     |                    |                             |                             |                          |                           |                         |                     |  |       |       |       |  |
| V <sub>DS</sub> (V)   | V <sub>GS</sub> (V) | I <sub>D</sub> (A) | V <sub>GS(th)</sub> min (V) | V <sub>GS(th)</sub> max (V) | t <sub>on</sub> typ (ns) | t <sub>off</sub> typ (ns) | Q <sub>G</sub> typ (nC) | ESD protection (kV) | R <sub>DS(on)</sub> typ (mΩ) @ V <sub>GS</sub> = |       |       |       |  |
|                       |                     |                    |                             |                             |                          |                           |                         |                     | 10 V   | 4.5 V | 2.5 V | 1.8 V |  |
| 20                    | 8                   | 4.7                | 0.45                        | 1                           | 8.2                      | 39.5                      | 6.2                     | 2                   | -  | 24    | 29    | 40    |  |
|                       |                     | 1.9                | 0.4                         | 1                           | 8                        | 31                        | 2.2                     | 2                   | -  | 63    | 77    | 114   |  |
|                       |                     | 2.2                | 0.4                         | 1                           | 6                        | 21                        | 2.6                     | 2                   | -  | 64    | 78    | 110   |  |
|                       |                     | 1.9                | 0.45                        | 0.95                        | 5.3                      | 16                        | 1.6                     | 2                   | -  | 120   | 155   | 195   |  |
|                       |                     | 1.6                | 0.45                        | 0.95                        | 5.3                      | 16                        | 1.6                     | 2                   | -  | 155   | 190   | 235   |  |
|                       |                     | 1                  | 0.5                         | 0.95                        | 6                        | 86                        | 0.45                    | 2                   | -  | 270   | 360   | 470   |  |
|                       | 6                   | 0.45               | 0.95                        | 5.6                         | 19                       | 0.4                       | 1                       | -                   | 470  | 620   | 845   |       |  |
|                       | 12                  | 6.3                | 0.75                        | 1.25                        | 16                       | 44                        | 9.9                     | 2                   | -  | 16    | 24    | -     |  |
|                       |                     | 8.6                | 0.47                        | 0.9                         | 7                        | 135                       | 7.7                     | -                   | -  | 15    | 18    | 22    |  |
|                       |                     | 9.1                | 0.4                         | 0.9                         | 9                        | 31                        | 12                      | 1                   | -  | 15    | 19    | 22    |  |
| 5.4                   |                     | 0.4                | 0.9                         | 7                           | 35                       | 6.2                       | -                       | -                   | 24   | 30    | 40    |       |  |
| 6                     | 0.4                 | 0.9                | 5.5                         | 22                          | 5.1                      | 1                         | -                       | 28                  | 38   | 42    |       |       |  |
| 30                    | 8                   | 1.5                | 0.45                        | 0.95                        | 5                        | 17                        | 1.6                     | 2                   | -  | 210   | 240   | 270   |  |
|                       |                     | 1                  | 0.45                        | 0.95                        | 4                        | 12                        | 0.8                     | 2                   | -  | 390   | 460   | 530   |  |
|                       |                     | 0.59               | 0.45                        | 0.95                        | 4                        | 12                        | 0.6                     | 2                   | -  | 550   | 660   | 770   |  |
|                       |                     | 0.4                | 0.6                         | 1.1                         | 26                       | 88                        | 0.52                    | 2                   | -  | 1000  | 1400  | 2000  |  |
|                       | 12                  | 7.2                | 0.4                         | 0.9                         | 8                        | 33                        | 12.4                    | 2                   | -  | 19    | 22    | 17    |  |
|                       |                     | 5.7                | 0.4                         | 0.9                         | 9                        | 34                        | 7                       | -                   | -  | 33    | 42    | 54    |  |
|                       |                     | 4.4                | 0.4                         | 0.9                         | 9                        | 34                        | 7                       | -                   | -  | 36    | 43    | 56    |  |
|                       | 20                  | 0.9                | 0.5                         | 1.5                         | 8                        | 11                        | 0.74                    | 2                   | -  | 234   | 324   | -     |  |
|                       |                     | 7.6                | 1                           | 2                           | 9                        | 9                         | 7.2                     | -                   | 17   | 21    | -     | -     |  |
|                       |                     | 5.5                | 1                           | 2.5                         | 8                        | 33                        | 12.6                    | 2                   | 17   | 22    | -     | -     |  |
|                       |                     | 3.9                | 1                           | 2.5                         | 6.3                      | 14.1                      | 6                       | 2                   | 30   | 39    | -     | -     |  |
|                       |                     | 3.1                | 1                           | 2.5                         | 18                       | 78                        | 6.5                     | -                   | 28   | 37    | -     | -     |  |
|                       |                     | 4.5                | 1                           | 2.5                         | 3                        | 11                        | 6                       | 1                   | 30   | 44    | -     | -     |  |
|                       |                     | 5.1                | 1                           | 2                           | 3                        | 11                        | 3.6                     | -                   | 35   | 43    | -     | -     |  |
| 2.1                   | 1                   | 2.5                | 3                           | 15                          | 2.6                      | 2                         | 70                      | 90                  | -  | -     |       |       |  |
| 0.18                  | 0.8                 | 1.5                | 10                          | 51                          | 0.34                     | -                         | 2700                    | 3000                | 4000   | -     |       |       |  |
| 40                    | 20                  | 2.7                | 1                           | 2.5                         | 6                        | 12                        | 4.1                     | 1                   | 64   | 79    | -     | -     |  |
|                       |                     | 2.5                | 1                           | 2.5                         | 14                       | 14                        | 2.4                     | 1                   | 95   | 120   | -     | -     |  |
| 55                    | 10                  | 0.3                | 0.4                         | 1.3                         | 4                        | 11                        | 1                       | 3                   | -  | 2300  | 2400  | 3100  |  |
| 60                    | 20                  | 3.1                | 1.3                         | 2.7                         | 9                        | 33                        | 12.7                    | 2                   | 46   | 52    | -     | -     |  |
|                       |                     | 2.1                | 1.3                         | 2.7                         | 6.4                      | 15.9                      | 5.9                     | 2                   | 96   | 108   | -     | -     |  |
|                       |                     | 1.5                | 1.3                         | 2.7                         | 6.3                      | 13                        | 3.9                     | 2                   | 176  | 196   | -     | -     |  |
|                       |                     | 0.8                | 1.3                         | 2.7                         | 5.3                      | 10.2                      | 2.4                     | 2                   | 300  | 332   | -     | -     |  |
|                       |                     | 0.19               | 0.8                         | 1.5                         | 6                        | 11                        | 0.33                    | yes                 | 2800   | 3500  | 4500  | -     |  |
|                       |                     | 0.27               | 0.5                         | 1.5                         | 7.9                      | 12.5                      | 0.49                    | 2                   | 2100   | 2200  | 2600  | -     |  |
|                       |                     | 0.1                | 0.6                         | 1.4                         | 2                        | 5                         |                         | 2                   | 2800   | 3800  | -     | -     |  |
|                       |                     | 0.19               | 1.1                         | 2.1                         | 12                       | 34                        | 0.33                    | yes                 | 3000   | 3700  | -     | -     |  |
| 0.27                  | 1.1                 | 2.1                | 4.7                         | 6.9                         | 1                        | 2                         | 2200                    | 2500                | -  | -     |       |       |  |
| 100                   | 20                  | 1.5                | 1.3                         | 2.7                         | 4.8                      | 9.3                       | 4.5                     | 1                   | 285  | 300   | -     | -     |  |
|                       |                     | 1.1                | 1.3                         | 2.7                         | 5.7                      | 10.2                      | 2.9                     | 1                   | 527  | 555   | -     | -     |  |

Types in **bold** represent new products

|  | SOT223  | SOT457<br>(SC-74)   | SOT23   | SOT323<br>(SC-70)   | DFN1006<br>(SOT883)   | DFN1006B<br>(SOT883B)   |
|--|---|---|---|---|---|---|
|  |  |  |  |  |  |  |
|  | 6.5 x 3.5 x 1.65  | 2.9 x 1.5 x 1.0   | 2.9 x 1.3 x 1.0   | 2.0 x 1.25 x 0.95   | 1.0 x 0.6 x 0.48  | 1.0 x 0.6 x 0.37  |
|  | 1700  | 600   | 250   | 200   | 250   | 250   |
|  |   | <b>PMN28UNE</b>   | PMV28UNEA   |   |   |   |
|  |   |   | PMV65UNE  | PMF63UNE  |   |   |
|  |   |   |   |   | PMZ130UNE   |   |
|  |   |   |   |   |   | PMZB150UNE  |
|  |   |   |   |   | PMZ290UNE2  | PMZB290UNE2   |
|  |   |   |   |   | PMZ600UNE   | PMZB600UNE  |
|  |   |   | PMV20XNEA   |   |   |   |
|  |   |   | PMV16XN   |   |   |   |
|  |   | PMN16XNE  |   |   |   |   |
|  |   |   | PMV30UN2  |   |   |   |
|  |   | PMN30UNE  |   |   |   |   |
|  |   |   |   |   | PMZ200UNE   | PMZB200UNE  |
|  |   |   |   |   | PMZ390UNE   | PMZB390UNE  |
|  |   |   |   |   | PMZ550UNE   | PMZB550UNE  |
|  |   |   | NX3008NBK   | NX3008NBKW  |   |   |
|  |   |   | PMV20XNE  |   |   |   |
|  |   | PMN30UN   |   |   |   |   |
|  |   |   | PMV40UN2  |   |   |   |
|  |   |   |   | PMF250XNE   |   |   |
|  |   |   | PMV20EN   |   |   |   |
|  |   | <b>PMN25ENE</b>   | PMV25ENEA   |   |   |   |
|  |   |   | PMV50ENEA   |   |   |   |
|  |   |   | PMV37EN2  |   |   |   |
|  |   | PMN40ENE  | PMV42ENE  |   |   |   |
|  |   |   | PMV45EN2  |   |   |   |
|  |   |   | PMV90ENE  |   |   |   |
|  |   |   | NX3020NAK   | NX3020NAKW  |   |   |
|  |   |   | PMV65ENEA   |   |   |   |
|  |   |   | PMV130ENEA  |   |   |   |
|  |   |   | BSH111BK  |   |   |   |
|  |   | <b>PMN55ENE</b>   | PMV55ENEA   |   |   |   |
|  |   | <b>PMN120ENE</b>  | PMV120ENEA  |   |   |   |
|  |   | <b>PMN230ENE</b>  | PMV230ENEA  |   |   |   |
|  |   |   | PMV450ENEA  |   |   |   |
|  |   |   | NX138AK   |   |   |   |
|  |   |   | NX138BK   | NX138BKW  |   |   |
|  |   |   | BSN20BK   |   |   |   |
|  |   |   | NX7002AK  | NX7002AKW   |   |   |
|  |   |   | NX7002BK  | NX7002BKW   | NX7002BKM   | NX7002BKMB  |
|  | PMT280ENEA  | PMN280ENEA  | PMV280ENEA  |   |   |   |
|  | PMT560ENEA  |   |   |   |   |   |

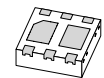
## Small-signal MOSFETs

### Small-signal MOSFETs single (P-channel)

| Package               |                     |                    |                             |                             |                          |                           |                         |                     |  |       |       |       |  |
|-----------------------|---------------------|--------------------|-----------------------------|-----------------------------|--------------------------|---------------------------|-------------------------|---------------------|--|-------|-------|-------|--|
| Size (mm)             |                     |                    |                             |                             |                          |                           |                         |                     |  |       |       |       |  |
| P <sub>tot</sub> (mW) |                     |                    |                             |                             |                          |                           |                         |                     |  |       |       |       |  |
| V <sub>DS</sub> (V)   | V <sub>GS</sub> (V) | I <sub>D</sub> (A) | V <sub>GS(th)</sub> min (V) | V <sub>GS(th)</sub> max (V) | t <sub>on</sub> typ (ns) | t <sub>off</sub> typ (ns) | Q <sub>C</sub> typ (nC) | ESD protection (kV) | R <sub>DS(on)</sub> typ (mΩ) @ V <sub>GS</sub> = |       |       |       |  |
|                       |                     |                    |                             |                             |                          |                           |                         |                     | 10 V   | 4.5 V | 2.5 V | 1.8 V |  |
| 20                    | 8                   | 5.6                | 0.45                        | 0.95                        | 11                       | 83                        | 14.7                    | 2                   | -  | 27    | 38    | 50    |  |
|                       |                     | 5.3                | 0.45                        | 0.95                        | 41                       | 122                       | 14.7                    | 2                   | -  | 30    | 38    | 51    |  |
|                       |                     | 5.4                | 0.45                        | 0.95                        | 34                       | 128                       | 15.5                    | -                   | -  | 34    | 42    | 57    |  |
|                       |                     | 4                  | 0.47                        | 0.9                         | 400                      | 2180                      | 10.5                    | 3                   | -  | 50    | 57    | 70    |  |
|                       |                     | 2                  | 0.5                         | 1.1                         | 7                        | 50                        | 6                       | -                   | -  | 100   | 155   | 210   |  |
|                       |                     | 1.2                | 0.45                        | 0.95                        | 33                       | 52                        | 3.3                     | -                   | -  | 170   | 210   | 280   |  |
|                       |                     | 2.3                | 0.45                        | 0.95                        | 5                        | 43                        | 3.7                     | -                   | -  | 120   | 150   | 200   |  |
|                       |                     | 1.4                | 0.45                        | 0.95                        | 9                        | 35                        | 1.3                     | 1.8                 | -  | 330   | 420   | 520   |  |
|                       | 0.5                 | 0.45               | 0.95                        | 2.3                         | 13.5                     | 1.19                      | 1                       | -                   | 1020   | 1270  | 1700  |       |  |
|                       | 4.5                 | 0.75               | 1.25                        | 7.9                         | 59                       | 11                        | 2                       | -                   | 28   | 42    | -     |       |  |
|                       | 6.8                 | 0.47               | 0.9                         | 12                          | 62                       | 15                        | -                       | -                   | 30   | 35    | 48    |       |  |
|                       | 5.7                 | 0.75               | 1.25                        | 44                          | 60                       | 11.5                      | 2                       | -                   | 41   | 56    | -     |       |  |
|                       | 4.1 / 3.5           | 0.75               | 1.25                        | 24                          | 84                       | 8.5                       | -                       | -                   | 48   | 71    | -     |       |  |
|                       | 4.4                 | 0.47               | 0.9                         | 7                           | 135                      | 7.7                       | -                       | -                   | 48   | 60    | 82    |       |  |
|                       | 4.7                 | 0.47               | 0.9                         | 5.1                         | 141                      | 8.5                       | -                       | -                   | 50   | 64    | 88    |       |  |
|                       | 3.9                 | 0.55               | 0.95                        | 28                          | 101                      | 7.6                       | -                       | -                   | 65   | 90    | -     |       |  |
|                       | 3.3                 | 0.75               | 1.25                        | 7                           | 36                       | 5                         | 2                       | -                   | 67   | 99    | -     |       |  |
|                       | 4.1                 | 0.75               | 1.25                        | 20                          | 57                       | 5.2                       | 2                       | -                   | 70   | 101   | -     |       |  |
|                       | 3.9                 | 0.47               | 0.9                         | 6                           | 120                      | 5                         | -                       | -                   | 72   | 88    | 110   |       |  |
|                       | 3.2                 | 0.47               | 0.9                         | 6                           | 120                      | 5                         | -                       | -                   | 77   | 95    | 120   |       |  |
| 2                     | 0.65                | 1.15               | 48                          | 64                          | 4.8                      | -                         | -                       | 90                  | 125  | -     |       |       |  |
| 2.3                   | 0.7                 | 1.3                | 5.3                         | 36                          | 3.4                      | 2                         | -                       | 100                 | 155  | -     |       |       |  |
| 1                     | 0.65                | 1.15               | 26                          | 44                          | 2.6                      | -                         | -                       | 175                 | 240  | -     |       |       |  |
| 30                    | 8                   | 1                  | 0.45                        | 0.95                        | 2.9                      | 22                        | 1.45                    | 2                   | -  | 400   | 480   | 600   |  |
|                       |                     | 0.41               | 0.45                        | 0.95                        | 3                        | 14                        | 0.7                     | 2                   | -  | 1200  | 1700  | 2100  |  |
|                       |                     | 0.23               | 0.6                         | 1.1                         | 49                       | 103                       | 0.55                    | 2                   | -  | 2800  | 5300  | -     |  |
|                       | 20                  | 5.3                | 1                           | 3                           | 6                        | 36                        | 12.8                    | 2                   | 35   | 49    | -     | -     |  |
| 4.4                   | 1                   | 3                  | 5                           | 19                          | 6.5                      | 2                         | 60                      | 96                  | -  | -     | -     |       |  |
| 40                    | 20                  | 1.8                | 1                           | 2.5                         | 10                       | 40                        | 4.7                     | 1                   | 180  | 220   | -     | -     |  |
| 50                    | 20                  | 0.2                | 1.1                         | 2.1                         | 24                       | 73                        | 0.26                    | 1                   | 5300   | 6000  | -     | -     |  |
| 70                    | 20                  | 2.4                | 1                           | 3                           | 6                        | 42                        | 10.6                    | 2                   | 130  | 150   | -     | -     |  |

### Small-signal MOSFET-Schottky combination

| Package               |                     |                     |                    |                             |                             |                          |                           |                         |                    |                    |                          |  | DFN2020-6 (SOT1118) |       |             |
|-----------------------|---------------------|---------------------|--------------------|-----------------------------|-----------------------------|--------------------------|---------------------------|-------------------------|--------------------|--------------------|--------------------------|--|---------------------|-------|-------------|
| Size (mm)             |                     |                     |                    |                             |                             |                          |                           |                         |                    |                    |                          |  | 2.0 x 2.0 x 0.65    |       |             |
| P <sub>tot</sub> (mW) |                     |                     |                    |                             |                             |                          |                           |                         |                    |                    |                          |  | 1250                |       |             |
| Configuration         | V <sub>DS</sub> (V) | V <sub>GS</sub> (V) | I <sub>D</sub> (A) | V <sub>GS(th)</sub> min (V) | V <sub>GS(th)</sub> max (V) | t <sub>on</sub> typ (ns) | t <sub>off</sub> typ (ns) | Q <sub>C</sub> typ (nC) | I <sub>F</sub> (A) | V <sub>R</sub> (V) | V <sub>F</sub> typ. (mV) | R <sub>DS(on)</sub> typ (mΩ) @ V <sub>GS</sub> = |                     |       |             |
|                       |                     |                     |                    |                             |                             |                          |                           |                         |                    |                    |                          | 4.5 V  | 2.5 V               | 1.8 V |             |
| Single + Schottky     | 20                  | 8                   | 3.7                | 0.4                         | 1                           | 20                       | 170                       | 5.7                     | 2                  | 30                 | 455                      | 80   | 95                  | 120   | PMFPB8040XP |



Types in **bold** represent new products




| SOT223  | SOT457<br>(SC-74)   | SOT23   | SOT363<br>(SC-88)   | SOT323<br>(SC-70)  | DFN1006-3<br>(SOT883)   | DFN1006B-3<br>(SOT883B)   |
|---|---|---|---|--|---|---|
|  |  |  |  |  |  |  |
| 6.5 x 3.5 x 1.65  | 2.9 x 1.5 x 1.0   | 2.9 x 1.3 x 1.0   | 2.0 x 1.25 x 0.95   | 2.0 x 1.25 x 0.95  | 1.0 x 0.6 x 0.48  | 1.0 x 0.6 x 0.37  |
| 1700  | 600   | 250   | 300   | 200  | 250   | 250   |
|   |   | PMV27UPE  |   |  |   |   |
|   |   | PMV33UPE  |   |  |   |   |
|   |   | PMV32UP   |   |  |   |   |
|   |   | PMV50UPE  |   |  |   |   |
|   |   | NX2301P   |   |  |   |   |
|   |   | PMV160UP  |   |  |   |   |
|   |   | BSH205G2  |   |  |   |   |
|   |   |   |   |  | PMZ350UPE   | PMZB350UPE  |
|   |   |   |   |  | PMZ950UPE   | PMZB950UPE  |
|   | <b>PMN30XPE</b>   | PMV30XPEA   |   |  |   |   |
|   | PMN30XP   |   |   |  |   |   |
|   | PMN48XP   | PMV48XP   |   |  |   |   |
|   |   | PMV50XP   |   |  |   |   |
|   | PMN52XP   |   |   |  |   |   |
|   |   | PMV65XP   |   |  |   |   |
|   |   | PMV65XPE  |   |  |   |   |
|   | PMN70XPE  |   |   |  |   |   |
|   | PMN70XP   |   |   |  |   |   |
|   |   | PMV75UP   |   |  |   |   |
|   |   |   | PMG85XP   |  |   |   |
|   |   | PMV100XPEA  |   |  |   |   |
|   |   |   |   | PMF170XP   |   |   |
|   |   |   |   |  | PMZ320UPE   | PMZB320UPE  |
|   |   |   |   |  | PMZ1200UPE  | PMZB1200UPE   |
|   |   | NX3008PBK   |   | NX3008PBKW   |   |   |
|   | <b>PMN50EPE</b>   | PMV35EPE  |   |  |   |   |
|   | PMN70EPE  |   |   |  |   |   |
|   |   | PMV250EPEA  |   |  |   |   |
|   |   | BSS84AK   |   | BSS84AKW   | BSS84AKM  | BSS84AKMB   |
| PMT200EPE   |   |   |   |  |   |   |




## Small-signal MOSFETs

### Small-signal MOSFETs dual

| Package               |                     |                     |                    |                             |                             |                          |                           |                         |                     |     |
|-----------------------|---------------------|---------------------|--------------------|-----------------------------|-----------------------------|--------------------------|---------------------------|-------------------------|---------------------|-----|
| Size (mm)             |                     |                     |                    |                             |                             |                          |                           |                         |                     |     |
| P <sub>tot</sub> (mW) |                     |                     |                    |                             |                             |                          |                           |                         |                     |     |
| Polarity              | V <sub>DS</sub> (V) | V <sub>GS</sub> (V) | I <sub>D</sub> (A) | V <sub>GS(th)</sub> min (V) | V <sub>GS(th)</sub> max (V) | t <sub>on</sub> typ (ns) | t <sub>off</sub> typ (ns) | Q <sub>C</sub> typ (nC) | ESD protection (kV) |     |
| N-channel             | 20                  | 8                   | 0.6                | 0.45                        | 0.95                        | 5.6                      | 19                        | 0.4                     | 1                   |     |
|                       |                     | 12                  | 5.3                | 0.4                         | 0.9                         | 4                        | 40                        | 14.4                    | -                   |     |
|                       | 30                  | 8                   | 0.59               | 0.45                        | 0.95                        | 4                        | 12                        | 0.6                     | 2                   |     |
|                       |                     |                     | 0.35               | 0.6                         | 1.1                         | 26                       | 88                        | 0.52                    | 2                   |     |
|                       |                     | 12                  | 3.1                | 0.75                        | 1.25                        | 9                        | 19                        | 2.9                     | 2                   |     |
|                       |                     |                     | 3.1                | 0.5                         | 1.5                         | 6                        | 18                        | 1.65                    | 1.8                 |     |
|                       |                     |                     | 1                  | 0.5                         | 1.5                         | 6.5                      | 14                        | 0.7                     | 2                   |     |
|                       |                     |                     | 20                 | 0.18                        | 0.8                         | 1.5                      | 10                        | 51                      | 0.34                | yes |
|                       | 60                  | 20                  | 0.18               | 0.8                         | 1.5                         | 6                        | 11                        | 0.33                    | yes                 |     |
|                       |                     |                     | 0.26               | 0.5                         | 1.5                         | 7.9                      | 12.5                      | 0.49                    | 2                   |     |
|                       |                     |                     | 0.17               | 1.1                         | 2.1                         | 12                       | 34                        | 0.33                    | yes                 |     |
|                       |                     |                     | 0.26               | 1.1                         | 2.1                         | 4.7                      | 6.9                       | 1                       | 2                   |     |
| P-channel             | 20                  | 8                   | 4.5                | 0.45                        | 0.95                        | 7                        | 41                        | 6.3                     | 2                   |     |
|                       |                     |                     | 0.5                | 0.45                        | 0.95                        | 2.3                      | 13.5                      | 1.19                    | 1                   |     |
|                       |                     |                     | 3.7                | 0.45                        | 0.95                        | 6                        | 47                        | 5.4                     | 2                   |     |
|                       |                     | 12                  | 4.5                | 0.47                        | 0.9                         | 4                        | 135                       | 16.5                    | -                   |     |
|                       |                     |                     | 4.2                | 0.75                        | 1                           | 7                        | 33                        | 5                       | 2                   |     |
|                       |                     |                     | 3.7                | 0.4                         | 1                           | 6                        | 120                       | 5.7                     | -                   |     |
|                       | 30                  | 8                   | 0.41               | 0.45                        | 0.95                        | 3                        | 14                        | 0.7                     | 2                   |     |
|                       |                     |                     | 0.2                | 0.6                         | 1.1                         | 49                       | 103                       | 0.55                    | 2                   |     |
|                       |                     | 12                  | 3.8                | 0.45                        | 1                           | 3                        | 112                       | 5.2                     | -                   |     |
|                       | 50                  | 20                  | 0.16               | 1.1                         | 2.1                         | 24                       | 73                        | 0.26                    | 1                   |     |

### Small-signal MOSFETs complementary

| Package  | Type              | Polarity | V <sub>DS</sub> (V) | V <sub>GS</sub> (V) | I <sub>D</sub> (A) | V <sub>GS(th)</sub> min (V) | V <sub>GS(th)</sub> max (V) |  |
|--|-------------------|----------|---------------------|---------------------|--------------------|-----------------------------|-----------------------------|--|
| <br>SOT363 (SC-88)<br>(2.0 x 1.25 x 0.95) | NX3008CBKS        | N        | 30                  | 8                   | 0.35               | 0.6                         | 1.1                         |  |
|  |                   | P        | 30                  | 8                   | 0.2                | 0.6                         | 1.1                         |  |
|  | <b>NX6020CAKS</b> | N        | 60                  | 20                  | 0.17               | 1.1                         | 2.1                         |  |
|  |                   | P        | 50                  | 20                  | 0.16               | 1.1                         | 2.1                         |  |
| <br>DFN1010B-6<br>(1.1 x 1.0 x 0.37)      | PMCXB900UE        | N        | 20                  | 8                   | 0.6                | 0.45                        | 0.95                        |  |
|  |                   | P        | 20                  | 8                   | 0.5                | 0.45                        | 0.95                        |  |
|  | PMCXB1000UE       | N        | 30                  | 8                   | 0.59               | 0.45                        | 0.95                        |  |
|  |                   | P        | 30                  | 8                   | 0.41               | 0.45                        | 0.95                        |  |
| <br>DFN2020-6<br>(2.0 x 2.0 x 0.65)       | PMCPB5530X        | N        | 20                  | 12                  | 5.3                | 0.4                         | 0.9                         |  |
|  |                   | P        | 20                  | 12                  | 4.5                | 0.47                        | 0.9                         |  |

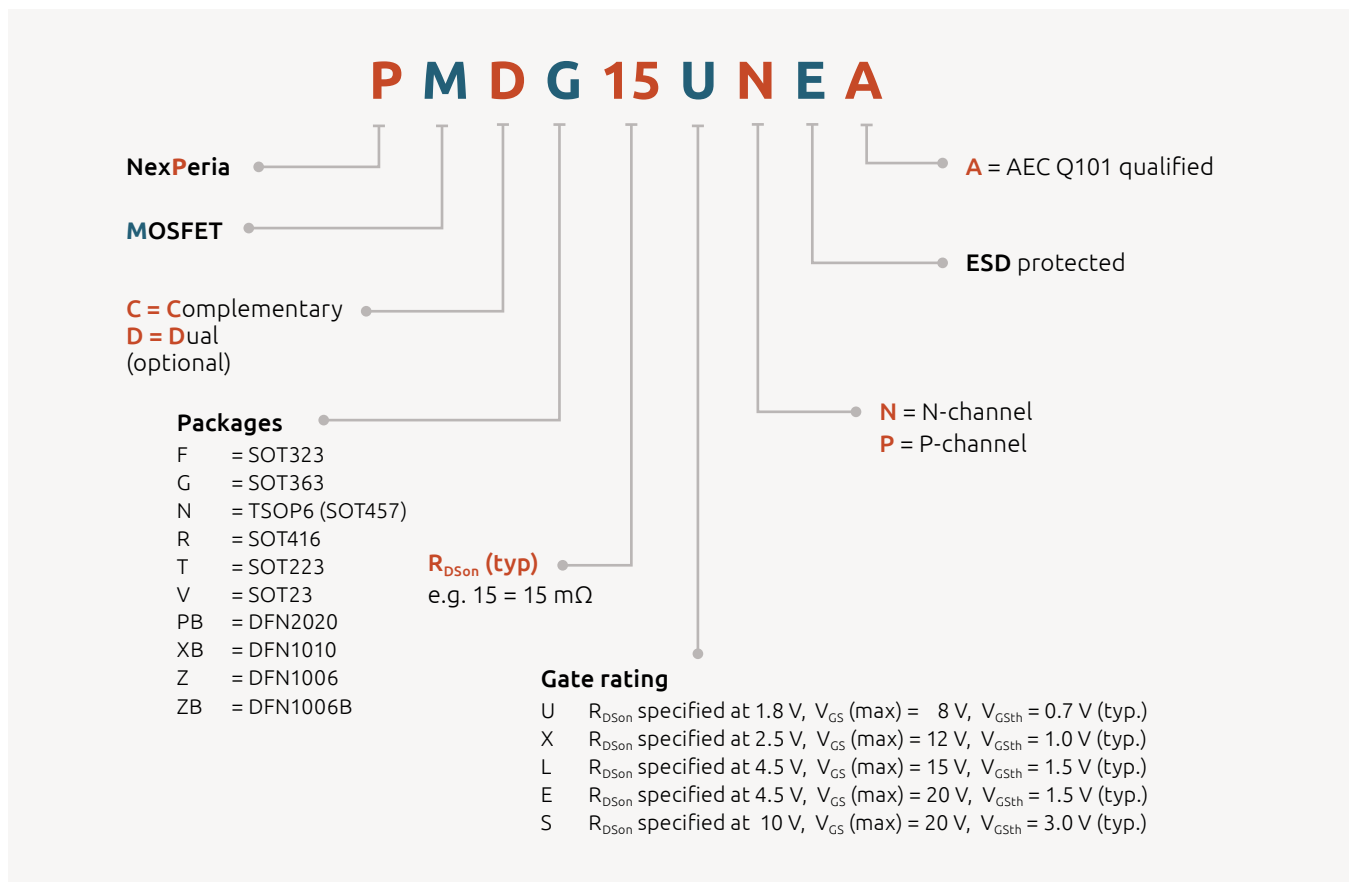
|  |       |       |       |            | SOT363<br>(SC-88)   | DFN2020-6<br>(SOT1118)  | DFN1010B-6<br>(SOT1216)   |              |
|--|-------|-------|-------|------------|---|---|---|--------------|
|  |       |       |       |            |  |  |  |              |
|  |       |       |       |            | 2.0 x 1.25 x 0.95   | 2.0 x 2.0 x 0.65  | 1.0 x 1.0 x 0.37  |              |
|  |       |       |       |            | 300   | 1250  | 350   |              |
| R <sub>DS(on)</sub> typ (mΩ) @ V <sub>GS</sub> = |       |       |       |            |   |   |   |              |
| 10 V   | 4.5 V | 2.5 V | 1.8 V |            |   |   |   |              |
| -  | 470   | 620   | 845   |            |   |   |   | PMDXB600UNE  |
| -  | 32    | 40    | 60    |            |   | PMDPB30XN   |   |              |
| -  | 550   | 660   | 770   |            |   |   |   | PMDXB550UNE  |
| -  | 1000  | 1400  | 2000  | NX3008NBKS |   |   |   |              |
| -  | 55    | 72    | -     |            |   | PMDPB56XNEA   |   |              |
| -  | 95    | 130   | -     |            |   | PMDPB95XNE2   |   |              |
| -  | 170   | 240   | -     | PMGD175XNE |   |   |   |              |
| 2700   | 3000  | 4000  | -     | NX3020NAKS |   |   |   |              |
| 2800   | 3500  | 4500  | -     | NX138AKS   |   |   |   |              |
| 2100   | 2200  | 2600  | -     | NX138BKS   |   |   |   |              |
| 3000   | 3700  | -     | -     | NX7002AKS  |   |   |   |              |
| 2200   | 2500  | -     | -     | NX7002BKS  |   |   |   | NX7002BKXB   |
| -  | 58    | 74    | 97    |            |   | PMDPB58UPE  |   |              |
| -  | 1020  | 1270  | 1700  |            |   |   |   | PMDXB950UPE  |
| -  | 82    | 107   | 142   |            |   | PMDPB85UPE  |   |              |
| -  | 55    | 75    | 110   |            |   | PMDPB55XP   |   |              |
| -  | 66    | 98    | -     |            |   | PMDPB70XPE  |   |              |
| -  | 80    | 95    | 120   |            |   | PMDPB80XP   |   |              |
| -  | 1200  | 1700  | 2100  |            |   |   |   | PMDXB1200UPE |
| -  | 2800  | 5300  | -     | NX3008PBKS |   |   |   |              |
| -  | 70    | 89    | -     |            |   | PMDPB70XP   |   |              |
| 4500   | 5700  | -     | -     | BSS84AKS   |   |   |   |              |

Types in **bold** represent new products

|  | t <sub>on</sub> typ (ns) | t <sub>off</sub> typ (ns) | Q <sub>c</sub> typ (nC) | ESD protection (kV) | R <sub>DS(on)</sub> typ (mΩ) @ V <sub>GS</sub> = |       |       |       |       |       |
|--|--------------------------|---------------------------|-------------------------|---------------------|--|-------|-------|-------|-------|-------|
|  |                          |                           |                         |                     | 10 V   | 4.5 V | 2.5 V | 1.8 V | 1.5 V | 1.2 V |
|  | 26                       | 88                        | 0.52                    | 2                   | -  | 1000  | 1400  | 2000  | -     | -     |
|  | 49                       | 103                       | 0.55                    | 2                   | -  | 2800  | 5300  | -     | -     | -     |
|  | 6                        | 20                        | 0.33                    | yes                 | 3000   | 3700  |       |       |       |       |
|  | 13                       | 48                        | 0.26                    | 1                   | 4500   | 5700  |       |       |       |       |
|  | 5.6                      | 19                        | 0.4                     | 1                   | -  | 470   | 620   | 845   | 1125  | 2210  |
|  | 2.3                      | 13.5                      | 1.19                    | 1                   | -  | 1020  | 1270  | 1700  | 2300  | 3500  |
|  | 4                        | 12                        | 0.6                     | 2                   | -  | 550   | 660   | 770   | 890   | -     |
|  | 3                        | 14                        | 0.7                     | 2                   | -  | 1200  | 1700  | 2100  | 3000  | -     |
|  | 19                       | 56                        | 14.4                    | -                   | -  | 26    | 33    | 50    | -     | -     |
|  | 18                       | 56                        | 16.5                    | -                   | -  | 55    | 75    | 110   | -     | -     |

MOSFETs

## Small-signal MOSFETs nomenclature







AIRBAG

|   |            |
|---|------------|
| <b>Automotive logic.....</b>                    | <b>108</b> |
| Q100 Standard logic functions and packages..... | 108        |
| Q100 mini logic functions and packages.....     | 123        |
| <b>Asynchronous interface logic.....</b>        | <b>131</b> |
| Buffers/Inverters/Drivers.....                  | 131        |
| Schmitt-triggers.....                           | 138        |
| Transceivers.....                               | 141        |
| Voltage translators (level-shifters).....       | 142        |
| <b>I/O expansion .....</b>                      | <b>145</b> |
| Analog Switches .....                           | 145        |
| Bus Switches.....                               | 146        |
| Decoders/Demultiplexers.....                    | 147        |
| Digital Multiplexers.....                       | 148        |
| Shift Registers.....                            | 148        |
| <b>Synchronous interface logic .....</b>        | <b>150</b> |
| Latches/Registered drivers.....                 | 150        |
| Flip-flops .....                                | 152        |
| FIFO registers.....                             | 154        |
| Counters/frequency dividers.....                | 154        |
| Multivibrators.....                             | 155        |
| Phase-locked loops .....                        | 155        |
| <b>Control logic.....</b>                       | <b>156</b> |
| AND Gates .....                                 | 156        |
| Combination Gates .....                         | 157        |
| Configurable Gates .....                        | 157        |
| EXCLUSIVE-NOR Gates .....                       | 158        |
| EXCLUSIVE-OR Gates .....                        | 158        |
| NAND Gates.....                                 | 158        |
| NOR Gates .....                                 | 160        |
| OR Gates .....                                  | 161        |
| Digital comparators .....                       | 162        |
| Parity generators-checkers.....                 | 162        |
| <b>Nomenclatures .....</b>                      | <b>163</b> |

# Q100 Standard logic functions and packages

## Analog switches

| Type number    | Description  | Features      |                     |                     |                            |                       | Package (suffix) |               |               |              |               |               |              |               |                |
|----------------|--|---------------|---------------------|---------------------|----------------------------|-----------------------|------------------|---------------|---------------|--------------|---------------|---------------|--------------|---------------|----------------|
|                |  | Configuration | V <sub>cc</sub> (V) | R <sub>ON</sub> (Ω) | R <sub>ON</sub> (FLAT) (Ω) | T <sub>amb</sub> (°C) | SOT108-1 (D)     | SOT402-1 (PW) | SOT762-1 (BQ) | SOT109-1 (D) | SOT403-1 (PW) | SOT763-1 (BQ) | SOT137-1 (D) | SOT355-1 (PW) | SOT1815-1 (BQ) |
| 74HC4051-Q100  | Single-pole, octal-throw analog switch                         | SP8T-Z        | 2.0 - 10.0          | 200                 | 20                         | -40~125               |                  |               |               | •            | •             | •             |              |               |                |
| 74HCT4051-Q100 | Single-pole, octal-throw analog switch;<br>TTL-enabled         | SP8T-Z        | 4.5 - 5.5           | 225                 | 20                         | -40~125               |                  |               |               | •            | •             | •             |              |               |                |
| 74HC4052-Q100  | Dual single-pole, quad-throw analog switch                     | SP4T-Z        | 2.0 - 10.0          | 200                 | 20                         | -40~125               |                  |               |               | •            | •             | •             |              |               |                |
| 74HCT4052-Q100 | Dual single-pole, quad-throw analog switch;<br>TTL-enabled     | SP4T-Z        | 4.5 - 5.5           | 200                 | 20                         | -40~125               |                  |               |               | •            | •             | •             |              |               |                |
| 74HC4053-Q100  | Triple single-pole, double-throw analog switch                 | SP8T-Z        | 2.0 - 10.0          | 200                 | 20                         | -40~125               |                  |               |               | •            | •             | •             |              |               |                |
| 74HCT4053-Q100 | Triple single-pole, double-throw analog switch;<br>TTL-enabled | SP8T-Z        | 4.5 - 5.5           | 200                 | 20                         | -40~125               |                  |               |               | •            | •             | •             |              |               |                |
| 74HC4066-Q100  | Quad single-pole, single-throw analog switch                   | SPST-NO       | 2.0 - 10.0          | 105                 | 23                         | -40~125               | •                | •             | •             |              |               |               |              |               |                |
| 74HCT4066-Q100 | Quad single-pole, single-throw analog switch;<br>TTL-enabled   | SPST-NO       | 4.5 - 5.5           | 118                 | 23                         | -40~125               | •                | •             | •             |              |               |               |              |               |                |
| 74HC4067-Q100  | Single-pole, 16-throw analog switch                            | SP16T-Z       | 2.0 - 10.0          | 200                 | 25                         | -40~125               |                  |               |               |              |               |               | •            | •             | •              |
| 74HCT4067-Q100 | Single-pole, 16-throw analog switch;<br>TTL-enabled            | SP16T-Z       | 4.5 - 5.5           | 225                 | 25                         | -40~125               |                  |               |               |              |               |               | •            | •             | •              |
| 74HC4851-Q100  | Single-pole, octal-throw analog switch                         | SP8T-Z        | 2.0 - 10.0          | 220                 | -                          | -40~125               |                  |               |               | •            | •             | •             |              |               |                |
| 74HCT4851-Q100 | Single-pole, octal-throw analog switch;<br>TTL-enabled         | SP8T-Z        | 4.5 - 5.5           | 240                 | -                          | -40~125               |                  |               |               | •            | •             | •             |              |               |                |
| 74HC4852-Q100  | Dual single-pole, quad-throw analog switch                     | SP4T-Z        | 2.0 - 10.0          | 220                 | -                          | -40~125               |                  |               |               | •            | •             | •             |              |               |                |
| 74HCT4852-Q100 | Dual single-pole, quad-throw analog switch;<br>TTL-enabled     | SP4T-Z        | 4.5 - 5.5           | 240                 | -                          | -40~125               |                  |               |               | •            | •             | •             |              |               |                |
| 74LV4052-Q100  | Dual single-pole, quad-throw analog switch                     | SP4T-Z        | 1.0 - 6.0           | 125                 | 15                         | -40~125               |                  |               |               | •            | •             |               |              |               |                |
| 74LV4053-Q100  | Triple single-pole, double-throw analog switch                 | SPDT-Z        | 1.0 - 6.0           | 150                 | 30                         | -40~125               |                  |               |               | •            | •             | •             |              |               |                |
| 74LVC4066-Q100 | Quad single-pole, single-throw analog switch                   | SPST-NO       | 1.65 - 5.5          | 15                  | 1.5                        | -40~125               | •                | •             | •             |              |               |               |              |               |                |
| HEF4051B-Q100  | Single-pole, octal-throw analog switch                         | SP8T-Z        | 3.0 - 15            | 175                 | 30                         | -40~85                |                  |               |               | •            | •             |               |              |               |                |
| HEF4052B-Q100  | Dual single-pole, quad-throw analog switch                     | SP4T-Z        | 3.0 - 15            | 175                 | 30                         | -40~85                |                  |               |               | •            | •             |               |              |               |                |
| HEF4053B-Q100  | Triple single-pole, double-throw analog switch                 | SPDT-Z        | 3.0 - 15            | 175                 | 30                         | -40~85                |                  |               |               | •            | •             |               |              |               |                |
| HEF4066B-Q100  | Quad single-pole, single-throw analog switch                   | SPST-NO       | 3.0 - 15            | 175                 | 20                         | -40~85                | •                |               |               |              |               |               |              |               |                |
| HEF4067B-Q100  | Single-pole, 16-throw analog switch                            | SP16T-Z       | 3.0 - 15            | 175                 | 20                         | -40~85                |                  |               |               |              |               |               | •            |               |                |

## Buffers/Inverters

| Type number    | Description                                       | Features     |            |               |                | Package (suffix) |               |               |              |               |              |               |               |                |
|----------------|---|--------------|------------|---------------|----------------|------------------|---------------|---------------|--------------|---------------|--------------|---------------|---------------|----------------|
|                |   | $V_{CC}$ (V) | $I_o$ (mA) | $t_{pd}$ (ns) | $T_{amb}$ (°C) | SOT108-1 (D)     | SOT402-1 (PW) | SOT762-1 (BQ) | SOT109-1 (D) | SOT403-1 (PW) | SOT163-1 (D) | SOT360-1 (PW) | SOT764-1 (BQ) | SOT362-1 (DGG) |
| 74AHC04-Q100   | Hex inverter                                      | 2.0 - 5.5    | ± 8        | 3.0           | -40~125        | •                | •             | •             |              |               |              |               |               |                |
| 74AHT04-Q100   | Hex inverter; TTL-enabled                         | 4.5 - 5.5    | ± 8        | 3.0           | -40~125        | •                | •             | •             |              |               |              |               |               |                |
| 74AHC125-Q100  | Quad buffer/line driver (3-state)                 | 2.0 - 5.5    | ± 8        | 3.0           | -40~125        | •                | •             | •             |              |               |              |               |               |                |
| 74AHT125-Q100  | Quad buffer/line driver; TTL-enabled (3-state)    | 4.5 - 5.5    | ± 8        | 3.0           | -40~125        | •                | •             | •             |              |               |              |               |               |                |
| 74AHC126-Q100  | Quad buffer/line driver (3-state)                 | 2.0 - 5.5    | ± 8        | 3.3           | -40~125        | •                | •             | •             |              |               |              |               |               |                |
| 74AHT126-Q100  | Quad buffer/line driver; TTL-enabled (3-state)    | 4.5 - 5.5    | ± 8        | 3.0           | -40~125        | •                | •             | •             |              |               |              |               |               |                |
| 74AHC240-Q100  | Octal inverter/line driver (3-state)              | 2.0 - 5.5    | ± 8        | 2.8           | -40~125        |                  |               |               |              |               | •            | •             | •             |                |
| 74AHT240-Q100  | Octal inverter/line driver; TTL-enabled (3-state) | 4.5 - 5.5    | ± 8        | 3.0           | -40~125        |                  |               |               |              |               | •            | •             | •             |                |
| 74AHC244-Q100  | Octal buffer/line driver (3-state)                | 2.0 - 5.5    | ± 8        | 3.5           | -40~125        |                  |               |               |              |               | •            | •             | •             |                |
| 74AHT244-Q100  | Octal buffer/line driver; TTL-enabled (3-state)   | 4.5 - 5.5    | ± 8        | 3.5           | -40~125        |                  |               |               |              |               | •            | •             | •             |                |
| 74AHC541-Q100  | Octal buffer/line driver (3-state)                | 2.0 - 5.5    | ± 8        | 3.5           | -40~125        |                  |               |               |              |               | •            | •             | •             |                |
| 74AHT541-Q100  | Octal buffer/line driver; TTL-enabled (3-state)   | 4.5 - 5.5    | ± 8        | 3.5           | -40~125        |                  |               |               |              |               | •            | •             | •             |                |
| 74AHCU04-Q100  | Hex inverter; unbuffered                          | 2.0 - 5.5    | ± 8        | 2.4           | -40~125        | •                | •             | •             |              |               |              |               |               |                |
| 74ALVC125-Q100 | Quad buffer/line driver (3-state)                 | 1.65 - 3.6   | ± 24       | 1.8           | -40~85         | •                | •             | •             |              |               |              |               |               |                |
| 74ALVC541-Q100 | Octal buffer/line driver (3-state)                | 1.65 - 3.6   | ± 24       | 2.3           | -40~85         |                  |               |               |              |               | •            | •             | •             |                |
| 74HC05-Q100    | Hex inverter; open-drain                          | 2.0 - 6.0    | 5.2        | 11            | -40~125        | •                | •             | •             |              |               |              |               |               |                |
| 74HC04-Q100    | Hex inverter                                      | 2.0 - 6.0    | ± 5.2      | 7.0           | -40~125        | •                | •             | •             |              |               |              |               |               |                |
| 74HCT04-Q100   | Hex inverter; TTL-enabled                         | 4.5 - 5.5    | ± 4.0      | 8.0           | -40~125        | •                | •             | •             |              |               |              |               |               |                |
| 74HC125-Q100   | Quad buffer/line driver (3-state)                 | 2.0 - 6.0    | ± 7.8      | 9.0           | -40~125        | •                | •             |               |              |               |              |               |               |                |
| 74HCT125-Q100  | Quad buffer/line driver; TTL-enabled (3-state)    | 4.5 - 5.5    | ± 6        | 12            | -40~125        | •                | •             |               |              |               |              |               |               |                |
| 74HC126-Q100   | Quad buffer/line driver (3-state)                 | 2.0 - 6.0    | ± 7.8      | 9.0           | -40~125        | •                | •             |               |              |               |              |               |               |                |
| 74HCT126-Q100  | Quad buffer/line driver; TTL-enabled (3-state)    | 4.5 - 5.5    | ± 6        | 11            | -40~125        | •                | •             |               |              |               |              |               |               |                |
| 74HC240-Q100   | Octal inverter/line driver (3-state)              | 2.0 - 6.0    | ± 7.8      | 9.0           | -40~125        |                  |               |               |              |               | •            | •             | •             |                |
| 74HCT240-Q100  | Octal inverter/line driver; TTL-enabled (3-state) | 4.5 - 5.5    | ± 6        | 9.0           | -40~125        |                  |               |               |              |               | •            | •             | •             |                |
| 74HC244-Q100   | Octal buffer/line driver (3-state)                | 2.0 - 6.0    | ± 7.8      | 9.0           | -40~125        |                  |               |               |              |               | •            | •             | •             |                |
| 74HCT244-Q100  | Octal buffer/line driver; TTL-enabled (3-state)   | 4.5 - 5.5    | ± 6        | 11            | -40~125        |                  |               |               |              |               | •            | •             | •             |                |
| 74HC365-Q100   | Hex buffer/line driver (3-state)                  | 2.0 - 6.0    | ± 7.8      | 9.0           | -40~125        |                  |               |               | •            | •             |              |               |               |                |
| 74HCT365-Q100  | Hex buffer/line driver; TTL-enabled (3-state)     | 4.5 - 5.5    | ± 6        | 11            | -40~125        |                  |               |               | •            | •             |              |               |               |                |
| 74HC366-Q100   | Hex inverter/line driver (3-state)                | 2.0 - 6.0    | ± 7.8      | 10            | -40~125        |                  |               |               | •            | •             |              |               |               |                |
| 74HCT366-Q100  | Hex inverter/line driver; TTL-enabled (3-state)   | 4.5 - 5.5    | ± 6        | 11            | -40~125        |                  |               |               | •            | •             |              |               |               |                |
| 74HCS40-Q100   | Octal inverter/line driver (3-state)              | 2.0 - 6.0    | ± 7.8      | 9.0           | -40~125        |                  |               |               |              |               | •            |               |               |                |
| 74HCT540-Q100  | Octal inverter/line driver; TTL-enabled (3-state) | 4.5 - 5.5    | ± 6        | 11            | -40~125        |                  |               |               |              |               | •            |               |               |                |
| 74HCS41-Q100   | Octal buffer/line driver (3-state)                | 2.0 - 6.0    | ± 7.8      | 10            | -40~125        |                  |               |               |              |               | •            | •             |               |                |

## Buffers/Inverters

| Type number       | Description                                       | Features     |            |               |                | Package (suffix) |               |               |              |               |              |               |               |                |
|-------------------|---|--------------|------------|---------------|----------------|------------------|---------------|---------------|--------------|---------------|--------------|---------------|---------------|----------------|
|                   |   | $V_{CC}$ (V) | $I_o$ (mA) | $t_{pd}$ (ns) | $T_{amb}$ (°C) | SOT108-1 (D)     | SOT402-1 (PW) | SOT762-1 (BQ) | SOT109-1 (D) | SOT403-1 (PW) | SOT163-1 (D) | SOT360-1 (PW) | SOT764-1 (BQ) | SOT362-1 (DGG) |
| 74HCT541-Q100     | Octal buffer/line driver; TTL-enabled (3-state)   | 4.5 - 5.5    | ± 6        | 12            | -40~125        |                  |               |               |              |               | •            | •             |               |                |
| 74HCU04-Q100      | Hex inverter; unbuffered                          | 2.0 - 6.0    | ± 5.2      | 5.0           | -40~125        | •                | •             | •             |              |               |              |               |               |                |
| 74LV244-Q100      | Octal buffer/line driver (3-state)                | 1.0 - 5.5    | ± 16       | 8.0           | -40~125        |                  |               |               |              |               | •            | •             |               |                |
| 74LVC04A-Q100     | Hex inverter                                      | 1.65 - 5.5   | ± 24       | 2.0           | -40~125        | •                | •             | •             |              |               |              |               |               |                |
| 74LVC06A-Q100     | Hex inverter; open-drain                          | 1.65 - 5.5   | 32         | 2.2           | -40~125        | •                | •             | •             |              |               |              |               |               |                |
| 74LVC07A-Q100     | Hex buffer; open-drain                            | 1.65 - 5.5   | 32         | 2.2           | -40~125        | •                | •             | •             |              |               |              |               |               |                |
| 74LVC125A-Q100    | Quad buffer/line driver (3-state)                 | 1.2 - 3.6    | ± 24       | 2.4           | -40~125        | •                | •             | •             |              |               |              |               |               |                |
| 74LVC126A-Q100    | Quad buffer/line driver (3-state)                 | 1.2 - 3.6    | ± 24       | 2.4           | -40~125        | •                | •             | •             |              |               |              |               |               |                |
| 74LVC541A-Q100    | Octal buffer/line driver (3-state)                | 1.2 - 3.6    | ± 24       | 3.3           | -40~125        |                  |               |               |              |               | •            | •             | •             |                |
| 74LVC16240A-Q100  | 16-bit inverter/line driver (3-state)             | 1.2 - 3.6    | ± 24       | 2.7           | -40~125        |                  |               |               |              |               |              |               |               | •              |
| 74LVC244A-Q100    | Octal buffer/line driver (3-state)                | 1.2 - 3.6    | ± 24       | 2.8           | -40~125        |                  |               |               |              |               | •            | •             | •             |                |
| 74LVCH244A-Q100   | Octal buffer/line driver with bus hold (3-state)  | 1.2 - 3.6    | ± 24       | 2.8           | -40~125        |                  |               |               |              |               | •            | •             | •             |                |
| 74LVC16244A-Q100  | 16-bit buffer/line driver (3-state)               | 1.2 - 3.6    | ± 24       | 3.0           | -40~125        |                  |               |               |              |               |              |               |               | •              |
| 74LVCH16244A-Q100 | 16-bit buffer/line driver with bus hold (3-state) | 1.2 - 3.6    | ± 24       | 3.0           | -40~125        |                  |               |               |              |               |              |               |               | •              |
| 74LVCU04A-Q100    | Hex inverter; unbuffered                          | 1.2 - 3.6    | ± 24       | 2.0           | -40~125        | •                | •             |               |              |               |              |               |               |                |
| 74LVT04-Q100      | Hex inverter                                      | 2.7 - 3.6    | -20 / +32  | 2.6           | -40~85         | •                | •             |               |              |               |              |               |               |                |
| 74LVT244A-Q100    | Octal buffer/line driver with bus hold (3-state)  | 2.7 - 3.6    | -32 / +64  | 2.6           | -40~85         |                  |               |               |              |               | •            | •             |               |                |
| 74LVTH244A-Q100   | Octal buffer/line driver with bus hold (3-state)  | 2.7 - 3.6    | -32 / +64  | 2.6           | -40~85         |                  |               |               |              |               | •            | •             |               |                |
| 74VHC126-Q100     | Quad buffer/line driver (3-state)                 | 2.0 - 5.5    | ± 8        | 3.3           | -40~125        | •                | •             | •             |              |               |              |               |               |                |
| 74VHCT126-Q100    | Quad buffer/line driver; TTL-enabled (3-state)    | 4.5 - 5.5    | ± 8        | 3.0           | -40~125        | •                | •             | •             |              |               |              |               |               |                |
| 74VHC541-Q100     | Octal buffer/line driver (3-state)                | 2.0 - 5.5    | ± 8        | 3.5           | -40~125        |                  |               |               |              |               | •            | •             | •             |                |
| 74VHCT541-Q100    | Octal buffer/line driver; TTL-enabled (3-state)   | 4.5 - 5.5    | ± 8        | 3.5           | -40~125        |                  |               |               |              |               | •            | •             | •             |                |
| HEF4049B-Q100     | Hex inverter/line driver                          | 3.0 - 15.0   | -3 / +20   | 20            | -40~85         |                  |               |               | •            |               |              |               |               |                |
| HEF4050B-Q100     | Hex buffer/line driver                            | 3.0 - 15.0   | -3 / +20   | 40            | -40~85         |                  |               |               | •            |               |              |               |               |                |
| HEF4069UB-Q100    | Hex inverter; unbuffered                          | 3.0 - 15.0   | ± 3.4      | 15            | -40~85         | •                | •             |               |              |               |              |               |               |                |

## Counters/Frequency dividers

| Type number    | Description  | Features     |            |                |                | Package (suffix) |               |               |              |               |               |
|----------------|--|--------------|------------|----------------|----------------|------------------|---------------|---------------|--------------|---------------|---------------|
|                |  | $V_{CC}$ (V) | $I_O$ (mA) | $t_{FHD}$ (ns) | $T_{amb}$ (°C) | SOT108-1 (D)     | SOT402-1 (PW) | SOT762-1 (BQ) | SOT109-1 (D) | SOT403-1 (PW) | SOT763-1 (BQ) |
| 74HC161-Q100   | Presettable synchronous 4-bit binary counter; asynchronous reset             | 2.0 - 6.0    | ± 5.2      | 19             | -40~125        |                  |               |               | •            | •             |               |
| 74HC163-Q100   | Presettable synchronous 4-bit binary counter; synchronous reset              | 2.0 - 6.0    | ± 5.2      | 17             | -40~125        |                  |               |               | •            | •             |               |
| 74HCT163-Q100  | Presettable synchronous 4-bit binary counter; synchronous reset; TTL-enabled | 4.5 - 5.5    | ± 4.0      | 20             | -40~125        |                  |               |               | •            | •             |               |
| 74HC193-Q100   | Presettable synchronous 4-bit binary up/down counter                         | 2.0 - 6.0    | ± 5.2      | 20             | -40~125        |                  |               |               | •            | •             |               |
| 74HCT193-Q100  | Presettable synchronous 4-bit binary up/down counter; TTL-enabled            | 4.5 - 5.5    | ± 4.0      | 20             | -40~125        |                  |               |               | •            | •             |               |
| 74HC393-Q100   | Dual 4-bit binary ripple counter   | 2.0 - 6.0    | ± 5.2      | 12             | -40~125        | •                | •             | •             |              |               |               |
| 74HCT393-Q100  | Dual 4-bit binary ripple counter; TTL-enabled                                | 4.5 - 5.5    | ± 4.0      | 20             | -40~125        | •                | •             | •             |              |               |               |
| 74HC4017-Q100  | Johnson decade counter with 10 decoded outputs                               | 2.0 - 6.0    | ± 5.2      | 18             | -40~125        |                  |               |               | •            | •             | •             |
| 74HCT4017-Q100 | Johnson decade counter with 10 decoded outputs; TTL-enabled                  | 4.5 - 5.5    | ± 4.0      | 21             | -40~125        |                  |               |               | •            |               | •             |
| 74HC4020-Q100  | 14-stage binary ripple counter   | 2.0 - 6.0    | ± 5.2      | 11             | -40~125        |                  |               |               | •            | •             | •             |
| 74HCT4020-Q100 | 14-stage binary ripple counter; TTL-enabled                                  | 4.5 - 5.5    | ± 4.0      | 15             | -40~125        |                  |               |               | •            | •             | •             |
| 74HC4024-Q100  | 7-stage binary ripple counter  | 2.0 - 6.0    | ± 5.2      | 14             | -40~125        | •                | •             |               |              |               |               |
| 74HC4040-Q100  | 12-stage binary ripple counter   | 2.0 - 6.0    | ± 5.2      | 14             | -40~125        |                  |               |               | •            | •             | •             |
| 74HCT4040-Q100 | 12-stage binary ripple counter; TTL-enabled                                  | 4.5 - 5.5    | ± 4.0      | 16             | -40~125        |                  |               |               | •            | •             | •             |
| 74HC4060-Q100  | 14-stage binary ripple counter with oscillator                               | 2.0 - 6.0    | ± 5.2      | 31             | -40~125        |                  |               |               | •            | •             | •             |
| 74HCT4060-Q100 | 14-stage binary ripple counter with oscillator; TTL-enabled                  | 4.5 - 5.5    | ± 4.0      | 31             | -40~125        |                  |               |               | •            |               | •             |
| 74HC4520-Q100  | Dual 4-bit synchronous binary counter  | 2.0 - 6.0    | ± 5.2      | 24             | -40~125        |                  |               |               | •            |               |               |
| 74HCT4520-Q100 | Dual 4-bit synchronous binary counter; TTL-enabled                           | 4.5 - 5.5    | ± 4.0      | 24             | -40~125        |                  |               |               | •            |               |               |
| 74LV393-Q100   | Dual 4-bit binary ripple counter   | 1.0 - 3.6    | ± 6        | 12             | -40~125        | •                | •             |               |              |               |               |
| HEF4017B-Q100  | 5-stage Johnson decade counter   | 3.0 - 15     | ± 2.4      | 40             | -40~85         |                  |               |               | •            |               |               |
| HEF4020B-Q100  | 14-stage binary ripple counter   | 3.0 - 15     | ± 2.4      | 30             | -40~85         |                  |               |               | •            |               |               |
| HEF4040B-Q100  | 12-stage binary ripple counter   | 3.0 - 15     | ± 2.4      | 35             | -40~85         |                  |               |               | •            |               |               |
| HEF4060B-Q100  | 14-stage binary ripple counter with oscillator                               | 3.0 - 15     | ± 2.4      | 50             | -40~85         |                  |               |               | •            |               |               |
| HEF4541B-Q100  | Programmable timer   | 3.0 - 15     | - 4/ + 2.7 | 38             | -40~85         | •                |               |               |              |               |               |
| HEF4520B-Q100  | Dual 4-bit synchronous binary counter  | 3.0 - 15     | ± 2.4      | 15             | -40~85         |                  |               |               | •            |               |               |

## Bus switches

| Type number       | Description                       | Features     |                |                       |                           | Package (suffix) |               |              |               |               |              |               |               |
|-------------------|-----------------------------------|--------------|----------------|-----------------------|---------------------------|------------------|---------------|--------------|---------------|---------------|--------------|---------------|---------------|
|                   |                                   | $V_{CC}$ (V) | $V_{PASS}$ (V) | $R_{ON}$ ( $\Omega$ ) | $T_{amb}$ ( $^{\circ}$ C) | SOT402-1 (PW)    | SOT762-1 (BQ) | SOT109-1 (D) | SOT403-1 (PW) | SOT763-1 (BQ) | SOT163-1 (D) | SOT360-1 (PW) | SOT764-1 (BQ) |
| 74CBTLV3125-Q100  | Quad bus switch                   | 2.3 - 3.6    | 3.3            | 7                     | -40~125                   | •                |               |              |               |               |              |               |               |
| 74CBTLV3126-Q100  | Quad bus switch                   | 2.3 - 3.6    | 3.3            | 7                     | -40~125                   | •                | •             |              |               |               |              |               |               |
| 74CBTLV3253-Q100  | Dual 4:1 mux/demux                | 2.3 - 3.6    | 3.3            | 7                     | -40~125                   |                  |               | •            | •             | •             |              |               |               |
| 74CBTLV3257-Q100  | Quad 2:1 mux/demux                | 2.3 - 3.6    | 3.3            | 7                     | -40~125                   |                  |               | •            | •             | •             |              |               |               |
| 74CBTLV3245-Q100  | Octal bus switch                  | 2.3 - 3.6    | 3.3            | 7                     | -40~125                   |                  |               |              |               |               |              | •             | •             |
| 74CBTLVD3245-Q100 | Octal bus switch level translator | 3.0 - 3.6    | 1.8            | 7                     | -40~125                   |                  |               |              |               |               |              | •             | •             |
| CBT3245A-Q100     | Octal bus switch                  | 4.5 - 5.5    | 3.9            | 7                     | -40~85                    |                  |               |              |               |               | •            | •             | •             |

## Digital decoders/Demultiplexers

| Type number    | Description   | Features     |            |               |                           | Package (suffix) |               |               |
|----------------|---|--------------|------------|---------------|---------------------------|------------------|---------------|---------------|
|                |   | $V_{CC}$ (V) | $I_o$ (mA) | $t_{pd}$ (ns) | $T_{amb}$ ( $^{\circ}$ C) | SOT109-1 (D)     | SOT403-1 (PW) | SOT763-1 (BQ) |
| 74AHC138-Q100  | 3-to-8 line decoder/demultiplexer; inverting              | 2.0 - 5.5    | $\pm 8$    | 4.4           | -40~125                   | •                | •             | •             |
| 74AHCT138-Q100 | 3-to-8 line decoder/demultiplexer; inverting; TTL-enabled | 4.5 - 5.5    | $\pm 8$    | 4.4           | -40~125                   | •                | •             | •             |
| 74AHC139-Q100  | Dual 2-to-4 line decoder/demultiplexer                    | 2.0 - 5.5    | $\pm 8$    | 3.9           | -40~125                   | •                | •             |               |
| 74AHCT139-Q100 | Dual 2-to-4 line decoder/demultiplexer; TTL-enabled       | 4.5 - 5.5    | $\pm 8$    | 3.6           | -40~125                   | •                | •             |               |
| 74HC237-Q100   | 3-to-8 decoder/demultiplexer with address latches         | 2.0 - 6.0    | $\pm 5.2$  | 18            | -40~125                   | •                |               |               |
| 74HC138-Q100   | 3-to-8 line decoder/demultiplexer; inverting              | 2.0 - 6.0    | $\pm 5.2$  | 12            | -40~125                   | •                | •             | •             |
| 74HCT138-Q100  | 3-to-8 line decoder/demultiplexer; inverting; TTL-enabled | 4.5 - 5.5    | $\pm 4$    | 19            | -40~125                   | •                | •             | •             |
| 74HC139-Q100   | Dual 2-to-4 line decoder/demultiplexer                    | 2.0 - 6.0    | $\pm 5.2$  | 14            | -40~125                   | •                | •             |               |
| 74HCT139-Q100  | Dual 2-to-4 line decoder/demultiplexer; TTL-enabled       | 4.5 - 5.5    | $\pm 4$    | 16            | -40~125                   | •                | •             |               |
| 74HC238-Q100   | 3-to-8 decoder/demultiplexer                              | 2.0 - 6.0    | $\pm 5.2$  | 14            | -40~125                   | •                | •             | •             |
| 74HCT238-Q100  | 3-to-8 decoder/demultiplexer; TTL-enabled                 | 4.5 - 5.5    | $\pm 4$    | 18            | -40~125                   | •                | •             | •             |
| 74LVC138A-Q100 | 3-to-8 line decoder/demultiplexer; inverting              | 1.2 - 3.6    | $\pm 24$   | 2.7           | -40~125                   | •                | •             | •             |
| HEF4555B-Q100  | Dual 1-to-4 line decoder/demultiplexer                    | 3.0 - 15     | $\pm 2.4$  | 30            | -40~85                    | •                |               |               |



## Digital multiplexers

| Type number    | Description                                     | Features            |                     |                      |                       | Package (suffix) |               |               |
|----------------|---|---------------------|---------------------|----------------------|-----------------------|------------------|---------------|---------------|
|                |   | V <sub>CC</sub> (V) | I <sub>O</sub> (mA) | t <sub>pd</sub> (ns) | T <sub>amb</sub> (°C) | SOT109-1 (D)     | SOT403-1 (PW) | SOT763-1 (BQ) |
| 74AHC157-Q100  | Quad 2-input multiplexer                        | 2.0 - 5.5           | ± 8                 | 3.2                  | -40~125               | •                | •             | •             |
| 74AHCT157-Q100 | Quad 2-input multiplexer; TTL-enabled           | 4.5 - 5.5           | ± 8                 | 3.2                  | -40~125               | •                | •             | •             |
| 74AHC257-Q100  | Quad 2-input multiplexer (3-State)              | 2.0 - 5.5           | ± 8                 | 2.9                  | -40~125               | •                | •             |               |
| 74AHCT257-Q100 | Quad 2-input multiplexer; TTL-enabled (3-State) | 4.5 - 5.5           | ± 8                 | 3.7                  | -40~125               | •                | •             |               |
| 74HC151-Q100   | 8-input multiplexer                             | 2.0 - 6.0           | ± 5.2               | 17                   | -40~125               | •                | •             |               |
| 74HCT151-Q100  | 8-input multiplexer; TTL-enabled                | 4.5 - 5.5           | ± 4                 | 19                   | -40~125               | •                | •             |               |
| 74HC153-Q100   | Dual 4-input multiplexer                        | 2.0 - 6.0           | ± 5.2               | 17                   | -40~125               | •                | •             |               |
| 74HCT153-Q100  | Dual 4-input multiplexer; TTL-enabled           | 4.5 - 5.5           | ± 4                 | 19                   | -40~125               | •                | •             |               |
| 74HC157-Q100   | Quad 2-input multiplexer                        | 2.0 - 6.0           | ± 5.2               | 11                   | -40~125               | •                | •             | •             |
| 74HCT157-Q100  | Quad 2-input multiplexer; TTL-enabled           | 4.5 - 5.5           | ± 4                 | 13                   | -40~125               | •                | •             | •             |
| 74HC251-Q100   | 8-input multiplexer (3-State)                   | 2.0 - 6.0           | ± 5.2               | 18                   | -40~125               | •                | •             |               |
| 74HCT251-Q100  | 8-input multiplexer; TTL-enabled (3-State)      | 4.5 - 5.5           | ± 4                 | 22                   | -40~125               | •                | •             |               |
| 74HC253-Q100   | Dual 4-input multiplexer (3-State)              | 2.0 - 6.0           | ± 7.8               | 17                   | -40~125               | •                |               |               |
| 74HCT253-Q100  | Dual 4-input multiplexer; TTL-enabled (3-State) | 4.5 - 5.5           | ± 6                 | 17                   | -40~125               | •                |               |               |
| 74HC257-Q100   | Quad 2-input multiplexer (3-State)              | 2.0 - 6.0           | ± 7.8               | 11                   | -40~125               | •                | •             |               |
| 74HCT257-Q100  | Quad 2-input multiplexer; TTL-enabled (3-State) | 4.5 - 5.5           | ± 6                 | 13                   | -40~125               | •                | •             |               |
| 74LVC157A-Q100 | Quad 2-input multiplexer                        | 1.2 - 3.6           | ± 24                | 2.5                  | -40~125               | •                | •             | •             |

## Flip-flops

| Type number     | Description  | Features            |                     |                      |                       | Package (suffix) |               |               |              |               |              |               |               |               |                |
|-----------------|--|---------------------|---------------------|----------------------|-----------------------|------------------|---------------|---------------|--------------|---------------|--------------|---------------|---------------|---------------|----------------|
|                 |  | V <sub>CC</sub> (V) | I <sub>O</sub> (mA) | t <sub>pd</sub> (ns) | T <sub>amb</sub> (°C) | SOT108-1 (D)     | SOT402-1 (PW) | SOT762-1 (BQ) | SOT109-1 (D) | SOT403-1 (PW) | SOT163-1 (D) | SOT360-1 (PW) | SOT764-1 (BQ) | SOT815-1 (BQ) | SOT362-1 (DGG) |
| 74AHC74-Q100    | Dual D-type flip-flop with set and reset; positive-edge trigger                | 2.0 - 5.5           | ± 8                 | 3.7                  | -40~125               | •                | •             | •             |              |               |              |               |               |               |                |
| 74AHCT74-Q100   | Dual D-type flip-flop with set and reset; positive-edge trigger; TTL-enabled   | 4.5 - 5.5           | ± 8                 | 3.3                  | -40~125               | •                | •             | •             |              |               |              |               |               |               |                |
| 74AHC273-Q100   | Octal D-type flip-flop with reset; positive-edge trigger                       | 2.0 - 5.5           | ± 8                 | 4.2                  | -40~125               |                  |               |               |              |               | •            | •             | •             |               |                |
| 74AHCT273-Q100  | Octal D-type flip-flop with reset; positive-edge trigger; TTL-enabled          | 4.5 - 5.5           | ± 8                 | 4.0                  | -40~125               |                  |               |               |              |               | •            | •             | •             |               |                |
| 74AHC374-Q100   | Octal D-type flip-flop; positive-edge trigger                                  | 2.0 - 5.5           | ± 8                 | 4.4                  | -40~125               |                  |               |               |              |               | •            | •             |               |               |                |
| 74AHCT374-Q100  | Octal D-type flip-flop; positive-edge trigger (3-state); TTL-enabled (3-state) | 4.5 - 5.5           | ± 8                 | 4.3                  | -40~125               |                  |               |               |              |               | •            | •             |               |               |                |
| 74AHC377-Q100   | Octal D-type flip-flop with data enable; positive-edge trigger                 | 2.0 - 5.5           | ± 8                 | 3.9                  | -40~125               |                  |               |               |              |               |              | •             |               |               |                |
| 74AHCT377-Q100  | Octal D-type flip-flop with data enable; positive-edge trigger; TTL-enabled    | 4.5 - 5.5           | ± 8                 | 4.0                  | -40~125               |                  |               |               |              |               |              | •             | •             |               |                |
| 74AVC16374-Q100 | 16-bit D-type flip-flop; positive-edge trigger (3-state)                       | 1.2 - 3.6           | ± 12                | 1.5                  | -40~85                |                  |               |               |              |               |              |               |               |               | •              |

## Flip-flops

| Type number    | Description  | Features     |            |               |                | Package (suffix) |               |               |              |               |              |               |               |               |                |
|----------------|--|--------------|------------|---------------|----------------|------------------|---------------|---------------|--------------|---------------|--------------|---------------|---------------|---------------|----------------|
|                |  | $V_{CC}$ (V) | $I_O$ (mA) | $t_{pd}$ (ns) | $T_{amb}$ (°C) | SOT108-1 (D)     | SOT402-1 (PW) | SOT762-1 (BQ) | SOT109-1 (D) | SOT403-1 (PW) | SOT163-1 (D) | SOT360-1 (PW) | SOT764-1 (BQ) | SOT815-1 (BQ) | SOT362-1 (DGG) |
| 74HC74-Q100    | Dual D-type flip-flop with set and reset; positive-edge trigger              | 2.0 - 6.0    | ± 5.2      | 14            | -40~125        | •                | •             | •             |              |               |              |               |               |               |                |
| 74HCT74-Q100   | Dual D-type flip-flop with set and reset; positive-edge trigger; TTL-enabled | 4.5 - 5.5    | ± 4        | 15            | -40~125        | •                | •             | •             |              |               |              |               |               |               |                |
| 74HC107-Q100   | Dual J-K flip-flop with reset; negative-edge trigger                         | 2.0 - 6.0    | ± 5.2      | 16            | -40~125        | •                | •             |               |              |               |              |               |               |               |                |
| 74HCT107-Q100  | Dual J-K flip-flop with reset; negative-edge trigger; TTL-enabled            | 4.5 - 5.5    | ± 4        | 16            | -40~125        | •                |               |               |              |               |              |               |               |               |                |
| 74HC109-Q100   | Dual J-K flip-flop with set and reset; positive-edge trigger                 | 2.0 - 6.0    | ± 5.2      | 15            | -40~125        |                  |               |               | •            |               |              |               |               |               |                |
| 74HCT109-Q100  | Dual J-K flip-flop with set and reset; positive-edge trigger; TTL-enabled    | 4.5 - 5.5    | ± 4        | 17            | -40~125        |                  |               |               | •            |               |              |               |               |               |                |
| 74HC174-Q100   | Hex D-type flip-flop with reset; positive-edge trigger                       | 2.0 - 6.0    | ± 5.2      | 17            | -40~125        |                  |               |               | •            | •             |              |               |               |               |                |
| 74HCT174-Q100  | Hex D-type flip-flop with reset; positive-edge trigger; TTL-enabled          | 4.5 - 5.5    | ± 4        | 18            | -40~125        |                  |               |               | •            | •             |              |               |               |               |                |
| 74HC175-Q100   | Quad D-type flip-flop with reset; positive-edge trigger                      | 2.0 - 6.0    | ± 5.2      | 17            | -40~125        |                  |               |               | •            | •             |              |               |               |               |                |
| 74HCT175-Q100  | Quad D-type flip-flop with reset; positive-edge trigger; TTL-enabled         | 4.5 - 5.5    | ± 4        | 16            | -40~125        |                  |               |               | •            | •             |              |               |               |               |                |
| 74HC273-Q100   | Octal D-type flip-flop with reset; positive-edge trigger                     | 2.0 - 6.0    | ± 5.2      | 15            | -40~125        |                  |               |               |              |               | •            | •             | •             |               |                |
| 74HCT273-Q100  | Octal D-type flip-flop with reset; positive-edge trigger; TTL-enabled        | 4.5 - 5.5    | ± 4        | 15            | -40~125        |                  |               |               |              |               | •            | •             | •             |               |                |
| 74HC377-Q100   | Octal D-type flip-flop with data enable; positive-edge trigger               | 2.0 - 6.0    | ± 7.8      | 13            | -40~125        |                  |               |               |              |               | •            | •             |               |               |                |
| 74HCT377-Q100  | Octal D-type flip-flop with data enable; positive-edge trigger; TTL-enabled  | 4.5 - 5.5    | ± 6        | 14            | -40~125        |                  |               |               |              |               | •            | •             |               |               |                |
| 74HC574-Q100   | Octal D-type flip-flop; positive-edge trigger (3-state)                      | 2.0 - 6.0    | ± 7.8      | 14            | -40~125        |                  |               |               |              |               | •            | •             |               |               |                |
| 74HCT574-Q100  | Octal D-type flip-flop; positive-edge trigger; TTL-enabled (3-state)         | 4.5 - 5.5    | ± 6        | 15            | -40~125        |                  |               |               |              |               | •            | •             |               |               |                |
| 74LV74-Q100    | Dual D-type flip-flop with set and reset; positive-edge trigger              | 1.0 - 5.5    | ± 12       | 11            | -40~125        | •                | •             |               |              |               |              |               |               |               |                |
| 74LVC74A-Q100  | Dual D-type flip-flop with set and reset; positive-edge trigger              | 1.2 - 3.6    | ± 24       | 2.5           | -40~125        | •                | •             | •             |              |               |              |               |               |               |                |
| 74LVC273-Q100  | Octal D-type flip-flop with reset; positive-edge trigger                     | 1.2 - 3.6    | ± 24       | 6.0           | -40~125        |                  |               |               |              |               | •            | •             | •             |               |                |
| 74LVC374A-Q100 | Octal D-type flip-flop; positive-edge trigger (3-state)                      | 1.2 - 3.6    | ± 24       | 2.7           | -40~125        |                  |               |               |              |               | •            | •             | •             |               |                |

## Flip-flops

| Type number       | Description  | Features     |            |               |                | Package (suffix) |               |               |              |               |              |               |               |               |                |
|-------------------|--|--------------|------------|---------------|----------------|------------------|---------------|---------------|--------------|---------------|--------------|---------------|---------------|---------------|----------------|
|                   |  | $V_{cc}$ (V) | $I_o$ (mA) | $t_{pd}$ (ns) | $T_{amb}$ (°C) | SOT108-1 (D)     | SOT402-1 (PW) | SOT762-1 (BQ) | SOT109-1 (D) | SOT403-1 (PW) | SOT163-1 (D) | SOT360-1 (PW) | SOT764-1 (BQ) | SOT815-1 (BQ) | SOT362-1 (DGG) |
| 74LVC573A-Q100    | Octal D-type transparent latch (3-state)                               | 1.2 - 3.6    | ± 24       | 3.4           | -40~125        |                  |               |               |              |               | •            | •             | •             |               |                |
| 74LVC823A-Q100    | 9-bit D-type flip-flop; positive-edge trigger (3-state)                | 1.2 - 3.6    | ± 24       | 5.4           | -40~125        |                  |               |               |              |               |              |               |               | •             |                |
| 74LVC16374A-Q100  | 16-bit D-type flip-flop; positive-edge trigger (3-state)               | 1.2 - 3.6    | ± 24       | 3.8           | -40~125        |                  |               |               |              |               |              |               |               |               | •              |
| 74LVCH16374A-Q100 | 16-bit D-type flip-flop with bus hold; positive-edge trigger (3-state) | 1.2 - 3.6    | ± 24       | 3.8           | -40~125        |                  |               |               |              |               |              |               |               |               | •              |
| HEF4013B-Q100     | Dual D-type flip-flop with set and reset; positive-edge trigger        | 3.0 - 15     | ± 2.4      | 30            | -40~85         | •                | •             |               |              |               |              |               |               |               |                |
| HEF4027B-Q100     | Dual J-K flip-flop   | 3.0 - 15     | ± 2.4      | 30            | -40~85         |                  |               |               | •            |               |              |               |               |               |                |

## Gates

| Type number   | Description                                 | Features     |            |               |                | Package (suffix) |               |               |
|---------------|---|--------------|------------|---------------|----------------|------------------|---------------|---------------|
|               |   | $V_{cc}$ (V) | $I_o$ (mA) | $t_{pd}$ (ns) | $T_{amb}$ (°C) | SOT108-1 (D)     | SOT402-1 (PW) | SOT762-1 (BQ) |
| 74AHC00-Q100  | Quad 2-input NAND gate                      | 2.0 - 5.5    | ± 8        | 3.2           | -40~125        | •                | •             | •             |
| 74AHCT00-Q100 | Quad 2-input NAND gate; TTL-enabled         | 4.5 - 5.5    | ± 8        | 3.3           | -40~125        | •                | •             | •             |
| 74AHC02-Q100  | Quad 2-input NOR gate                       | 2.0 - 5.5    | ± 8        | 2.9           | -40~125        | •                | •             | •             |
| 74AHCT02-Q100 | Quad 2-input NOR gate; TTL-enabled          | 4.5 - 5.5    | ± 8        | 3.8           | -40~125        | •                | •             | •             |
| 74AHC08-Q100  | Quad 2-input AND gate                       | 2.0 - 5.5    | ± 8        | 3.5           | -40~125        | •                | •             | •             |
| 74AHCT08-Q100 | Quad 2-input AND gate; TTL-enabled          | 4.5 - 5.5    | ± 8        | 5.0           | -40~125        | •                | •             | •             |
| 74AHC30-Q100  | 8-input NAND gate                           | 2.0 - 5.5    | ± 8        | 3.6           | -40~125        | •                | •             | •             |
| 74AHCT30-Q100 | 8-input NAND gate; TTL-enabled              | 4.5 - 5.5    | ± 8        | 3.3           | -40~125        | •                | •             | •             |
| 74AHC32-Q100  | Quad 2-input OR gate                        | 2.0 - 5.5    | ± 8        | 3.5           | -40~125        | •                | •             | •             |
| 74AHCT32-Q100 | Quad 2-input OR gate; TTL-enabled           | 4.5 - 5.5    | ± 8        | 5.0           | -40~125        | •                | •             | •             |
| 74AHC86-Q100  | Quad 2-input EXCLUSIVE-OR gate              | 2.0 - 5.5    | ± 8        | 3.4           | -40~125        | •                | •             | •             |
| 74AHCT86-Q100 | Quad 2-input EXCLUSIVE-OR gate; TTL-enabled | 4.5 - 5.5    | ± 8        | 3.4           | -40~125        | •                | •             | •             |
| 74ALVC00-Q100 | Quad 2-input NAND gate                      | 1.65 - 3.6   | ± 24       | 2.1           | -40~85         | •                | •             | •             |

## Gates

| Type number    | Description                                     | Features     |            |               |                | Package (suffix) |                |                |
|----------------|---|--------------|------------|---------------|----------------|------------------|----------------|----------------|
|                |   | $V_{CC}$ (V) | $I_o$ (mA) | $t_{pd}$ (ns) | $T_{amb}$ (°C) | SOT108-1 (D)     | SOT1402-1 (PW) | SOT1762-1 (BQ) |
| 74ALVC32-Q100  | Quad 2-input OR gate                            | 1.65 - 3.6   | ± 24       | 2.0           | -40~125        | •                | •              | •              |
| 74HC00-Q100    | Quad 2-input NAND gate                          | 2.0 - 6.0    | ± 5.2      | 7.0           | -40~125        | •                | •              | •              |
| 74HCT00-Q100   | Quad 2-input NAND gate; TTL-enabled             | 4.5 - 5.5    | ± 4        | 10            | -40~125        | •                | •              | •              |
| 74HC02-Q100    | Quad 2-input NOR gate                           | 2.0 - 6.0    | ± 5.2      | 7.0           | -40~125        | •                | •              | •              |
| 74HCT02-Q100   | Quad 2-input NOR gate; TTL-enabled              | 4.5 - 5.5    | ± 4        | 9.0           | -40~125        | •                | •              | •              |
| 74HC03-Q100    | Quad 2-input NAND gate; open-drain              | 2.0 - 6.0    | 5.2        | 8.0           | -40~125        | •                | •              |                |
| 74HCT03-Q100   | Quad 2-input NAND gate; open-drain; TTL-enabled | 4.5 - 5.5    | ± 4        | 10            | -40~125        | •                | •              |                |
| 74HC08-Q100    | Quad 2-input AND gate                           | 2.0 - 6.0    | ± 5.2      | 7.0           | -40~125        | •                | •              | •              |
| 74HCT08-Q100   | Quad 2-input AND gate; TTL-enabled              | 4.5 - 5.5    | ± 4        | 11            | -40~125        | •                | •              | •              |
| 74HC10-Q100    | Triple 3-input NAND gate                        | 2.0 - 6.0    | ± 5.2      | 9.0           | -40~125        | •                | •              |                |
| 74HCT10-Q100   | Triple 3-input NAND gate; TTL-enabled           | 4.5 - 5.5    | ± 4        | 11            | -40~125        | •                | •              |                |
| 74HC11-Q100    | Triple 3-input AND gate                         | 2.0 - 6.0    | ± 5.2      | 10            | -40~125        | •                | •              |                |
| 74HCT11-Q100   | Triple 3-input AND gate; TTL-enabled            | 4.5 - 5.5    | ± 4        | 11            | -40~125        | •                | •              |                |
| 74HC20-Q100    | Dual 4-input NAND gate                          | 2.0 - 6.0    | ± 5.2      | 8.0           | -40~125        | •                | •              |                |
| 74HCT20-Q100   | Dual 4-input NAND gate; TTL-enabled             | 4.5 - 5.5    | ± 4        | 13            | -40~125        | •                |                | •              |
| 74HC27-Q100    | Triple 3-input NOR gate                         | 2.0 - 6.0    | ± 5.2      | 8.0           | -40~125        | •                | •              | •              |
| 74HCT27-Q100   | Triple 3-input NOR gate; TTL-enabled            | 4.5 - 5.5    | ± 4        | 10            | -40~125        | •                | •              | •              |
| 74HC30-Q100    | 8-input NAND gate                               | 2.0 - 6.0    | ± 5.2      | 12            | -40~125        | •                | •              |                |
| 74HCT30-Q100   | 8-input NAND gate; TTL-enabled                  | 4.5 - 5.5    | ± 4        | 12            | -40~125        | •                | •              |                |
| 74HC32-Q100    | Quad 2-input OR gate                            | 2.0 - 6.0    | ± 5.2      | 6.0           | -40~125        | •                | •              | •              |
| 74HCT32-Q100   | Quad 2-input OR gate; TTL-enabled               | 4.5 - 5.5    | ± 4.0      | 9.0           | -40~125        | •                | •              | •              |
| 74HC86-Q100    | Quad 2-input EXCLUSIVE-OR gate                  | 2.0 - 6.0    | ± 5.2      | 11            | -40~125        | •                | •              |                |
| 74HCT86-Q100   | Quad 2-input EXCLUSIVE-OR gate; TTL-enabled     | 4.5 - 5.5    | ± 4        | 14            | -40~125        | •                | •              |                |
| 74HC4002-Q100  | Dual 4-input NOR gate                           | 2.0 - 6.0    | ± 5.2      | 9.0           | -40~125        | •                | •              |                |
| 74HC4075-Q100  | Triple 3-input OR gate                          | 2.0 - 6.0    | ± 5.2      | 8.0           | -40~125        | •                | •              |                |
| 74HCT4075-Q100 | Triple 3-input OR gate; TTL-enabled             | 4.5 - 5.5    | ± 4        | 10            | -40~125        | •                | •              |                |
| 74LV08-Q100    | Quad 2-input AND gate                           | 1.0 - 5.5    | ± 12       | 7.0           | -40~125        | •                | •              |                |
| 74LVC00A-Q100  | Quad 2-input NAND gate                          | 1.2 - 3.6    | ± 24       | 2.1           | -40~125        | •                | •              | •              |
| 74LVC02A-Q100  | Quad 2-input NOR gate                           | 1.2 - 3.6    | ± 24       | 2.1           | -40~125        | •                | •              | •              |
| 74LVC08A-Q100  | Quad 2-input AND gate                           | 1.2 - 3.6    | ± 24       | 2.1           | -40~125        | •                | •              | •              |
| 74LVC11-Q100   | Triple 3-input AND gate                         | 1.2 - 3.7    | ± 24       | 3.7           | -40~125        | •                | •              |                |
| 74LVC32A-Q100  | Quad 2-input OR gate                            | 1.2 - 3.6    | ± 24       | 2.1           | -40~125        | •                | •              | •              |
| 74VHC02-Q100   | Quad 2-input NOR gate                           | 2.0 - 5.5    | ± 8        | 2.9           | -40~125        | •                | •              | •              |
| 74VHCT02-Q100  | Quad 2-input NOR gate; TTL-enabled              | 4.5 - 5.5    | ± 8        | 3.8           | -40~125        | •                | •              | •              |

## Gates

| Type number   | Description                        | Features     |            |               |                | Package (suffix) |               |               |
|---------------|------------------------------------|--------------|------------|---------------|----------------|------------------|---------------|---------------|
|               |                                    | $V_{CC}$ (V) | $I_o$ (mA) | $t_{pd}$ (ns) | $T_{amb}$ (°C) | SOT108-1 (D)     | SOT402-1 (PW) | SOT762-1 (BQ) |
| 74VHCT08-Q100 | Quad 2-input AND gate; TTL-enabled | 4.5 - 5.5    | ± 8        | 5.0           | -40~125        | •                | •             | •             |
| 74VHC32-Q100  | Quad 2-input OR gate               | 2.0 - 5.5    | ± 8        | 3.5           | -40~125        | •                | •             |               |
| 74VHCT32-Q100 | Quad 2-input OR gate; TTL-enabled  | 4.5 - 5.5    | ± 8        | 5.0           | -40~125        | •                | •             | •             |
| HEF4001B-Q100 | Quad 2-input NOR gate              | 3.0 - 15     | ± 2.4      | 20            | -40~85         | •                |               |               |
| HEF4011B-Q100 | Quad 2-input NAND gate             | 3.0 - 15     | ± 2.4      | 20            | -40~85         | •                |               |               |
| HEF4030B-Q100 | Quad 2-input EXCLUSIVE-OR gate     | 3.0 - 15     | ± 2.4      | 30            | -40~85         | •                |               |               |
| HEF4070B-Q100 | Quad 2-input EXCLUSIVE-OR gate     | 3.0 - 15     | ± 2.4      | 30            | -40~85         | •                |               |               |
| HEF4081B-Q100 | Quad 2-input AND gate              | 3.0 - 15     | ± 2.4      | 20            | -40~85         | •                |               |               |
| HEF4082B-Q100 | Dual 4-input AND gate              | 3.0 - 15     | ± 2.4      | 25            | -40~85         | •                |               |               |

## Latches/Registered drivers

| Type number       | Description  | Features     |            |               |                | Package (suffix) |               |               |              |               |               |                |
|-------------------|--|--------------|------------|---------------|----------------|------------------|---------------|---------------|--------------|---------------|---------------|----------------|
|                   |  | $V_{CC}$ (V) | $I_o$ (mA) | $t_{pd}$ (ns) | $T_{amb}$ (°C) | SOT109-1 (D)     | SOT403-1 (PW) | SOT763-1 (BQ) | SOT163-1 (D) | SOT360-1 (PW) | SOT764-1 (BQ) | SOT362-1 (DGG) |
| 74AHC573-Q100     | Octal D-type transparent latch (3-state)               | 2.0 - 5.5    | ± 8        | 4.2           | -40~125        |                  |               |               | •            | •             | •             |                |
| 74AHCT573-Q100    | Octal D-type transparent latch; TTL-enabled (3-state)  | 4.5 - 5.5    | ± 8        | 3.9           | -40~125        |                  |               |               | •            | •             | •             |                |
| 74HC259-Q100      | 8 bit addressable latch                                | 2.0 - 6.0    | ± 5.2      | 18            | -40~125        | •                | •             | •             |              |               |               |                |
| 74HCT259-Q100     | 8 bit addressable latch; TTL-enabled                   | 4.5 - 5.5    | ± 4        | 20            | -40~125        | •                | •             | •             |              |               |               |                |
| 74HC373-Q100      | Octal D-type transparent latch (3-state)               | 2.0 - 6.0    | ± 7.8      | 12            | -40~125        |                  |               |               | •            | •             | •             |                |
| 74HCT373-Q100     | Octal D-type transparent latch; TTL-enabled (3-state)  | 4.5 - 5.5    | ± 6        | 14            | -40~125        |                  |               |               | •            | •             | •             |                |
| 74HCS73-Q100      | Octal D-type transparent latch (3-state)               | 2.0 - 6.0    | ± 7.8      | 14            | -40~125        |                  |               |               | •            | •             | •             |                |
| 74HCT573-Q100     | Octal D-type transparent latch; TTL-enabled (3-state)  | 4.5 - 5.5    | ± 6        | 17            | -40~125        |                  |               |               | •            | •             | •             |                |
| 74LVC373A-Q100    | Octal D-type transparent latch (3-state)               | 1.2 - 3.6    | ± 24       | 3.0           | -40~125        |                  |               |               | •            | •             | •             |                |
| 74LVC16373A-Q100  | 16-bit D-type transparent latch (3-state)              | 1.2 - 3.6    | ± 24       | 2.4           | -40~125        |                  |               |               |              |               |               | •              |
| 74LVCH16373A-Q100 | 16-bit D-type transparent latch with bushold (3-state) | 1.2 - 3.6    | ± 24       | 2.4           | -40~125        |                  |               |               |              |               |               | •              |
| HEF4043B-Q100     | Quad R/S latch with set and reset (3-state)            | 3.0 - 15     | ± 2.4      | 25            | -40~85         | •                |               |               |              |               |               |                |

## Level shifters/Translators

| Type number       | Description   | Features               |                        |                     |                       | Package (suffix) |              |               |               |              |               |               |                |                |                |
|-------------------|---|------------------------|------------------------|---------------------|-----------------------|------------------|--------------|---------------|---------------|--------------|---------------|---------------|----------------|----------------|----------------|
|                   |   | V <sub>cc(A)</sub> (V) | V <sub>cc(B)</sub> (V) | I <sub>o</sub> (mA) | T <sub>amb</sub> (°C) | SOT402-1 (PW)    | SOT109-1 (D) | SOT403-1 (PW) | SOT763-1 (BQ) | SOT137-1 (D) | SOT355-1 (PW) | SOT815-1 (BQ) | SOT362-1 (DGG) | SOT480-1 (DGV) | SOT364-1 (DGG) |
| 74ALVC164245-Q100 | 16-bit dual-supply voltage level translating transceiver (3-state)        | 1.5 - 3.6              | 1.5 - 5.5              | ± 24                | -40~125               |                  |              |               |               |              |               |               |                |                |                |
| 74AVC4T245-Q100   | 4-bit dual-supply voltage level translating transceiver (3-state)         | 0.8 - 3.6              | 0.8 - 3.6              | ± 12                | -40~125               |                  | •            | •             | •             |              |               |               |                |                |                |
| 74AVC8T245-Q100   | 8-bit dual-supply voltage level translating transceiver (3-state)         | 0.8 - 3.6              | 0.8 - 3.6              | ± 12                | -40~125               |                  |              |               |               |              | •             | •             |                |                |                |
| 74AVC16T245-Q100  | 16-bit dual-supply voltage level translating transceiver (3-state)        | 0.8 - 3.6              | 0.8 - 3.6              | ± 12                | -40~125               |                  |              |               |               |              |               |               |                | •              |                |
| 74AVC20T245-Q100  | 20-bit dual-supply voltage-translating transceiver (3-state)              | 0.8 - 3.6              | 0.8 - 3.6              | ± 12                | -40~125               |                  |              |               |               |              |               |               |                |                | •              |
| 74AVCH4T245-Q100  | 4-bit dual-supply voltage translating transceiver with bus hold (3-state) | 0.8 - 3.6              | 0.8 - 3.6              | ± 12                | -40~125               |                  | •            | •             | •             |              |               |               |                |                |                |
| 74HC4050-Q100     | Hex buffer with 15V tolerant inputs                                       | 2.0 - 6.0              | n.a                    | ± 5.2               | -40~125               |                  | •            | •             |               |              |               |               |                |                |                |
| 74LVC4T3144-Q100  | 4-bit dual supply buffer/line driver (3-state)                            | 1.2 to 5.5             | 1.2 to 5.5             | ± 24                | -40~125               | •                |              |               |               |              |               |               |                |                |                |
| 74LVC4245A-Q100   | 8-bit dual-supply voltage translating transceiver (3-state)               | 1.5 - 5.5              | 1.5 - 3.6              | ± 24                | -40~125               |                  |              |               |               | •            | •             | •             |                |                |                |
| 74LVC8T245-Q100   | 8-bit dual-supply voltage translating transceiver (3-state)               | 1.2 - 5.5              | 1.2 - 5.5              | ± 24                | -40~125               |                  |              |               |               |              | •             | •             |                |                |                |
| 74LVCH8T245-Q100  | 8-bit dual-supply voltage translating transceiver with bus hold (3-state) | 1.2 - 5.5              | 1.2 - 5.5              | ± 24                | -40~125               |                  |              |               |               |              | •             | •             |                |                |                |
| HEF4104B-Q100     | Quad low-to-high voltage translator (3-state)                             | 3.0 - 15.0             | 3.0 - 15.0             | ± 2.4               | -40~85                |                  | •            |               |               |              |               |               |                |                |                |

## Multivibrators

| Type number     | Description   | Features            |                     |                      |                       | Package (suffix) |               |               |
|-----------------|---|---------------------|---------------------|----------------------|-----------------------|------------------|---------------|---------------|
|                 |   | V <sub>cc</sub> (V) | I <sub>o</sub> (mA) | t <sub>pd</sub> (ns) | T <sub>amb</sub> (°C) | SOT109-1 (D)     | SOT403-1 (PW) | SOT763-1 (BQ) |
| 74AHC123A-Q100  | Dual retriggerable monostable multivibrator with reset              | 2.0 - 5.5           | ± 8                 | 5.1                  | -40~125               | •                | •             | •             |
| 74AHCT123A-Q100 | Dual retriggerable monostable multivibrator with reset; TTL-enabled | 4.5 - 5.5           | ± 8                 | 5.0                  | -40~125               | •                | •             | •             |
| 74HC123-Q100    | Dual retriggerable monostable multivibrator with reset              | 2.0 - 6.0           | ± 7.8               | 9.0                  | -40~125               | •                | •             | •             |
| 74HCT123-Q100   | Dual retriggerable monostable multivibrator with reset; TTL-enabled | 4.5 - 5.5           | ± 4                 | 26                   | -40~125               | •                | •             | •             |
| 74HC4538-Q100   | Dual retriggerable precision monostable multivibrator               | 2.0 - 6.0           | ± 5.2               | 27                   | -40~125               | •                | •             |               |
| 74HCT4538-Q100  | Dual retriggerable precision monostable multivibrator; TTL-enabled  | 4.5 - 5.5           | ± 4                 | 30                   | -40~125               | •                | •             |               |
| HEF4528B-Q100   | Dual retriggerable monostable multivibrator with reset              | 3.0 - 15            | ± 2.4               | 40                   | -40~85                | •                |               |               |
| HEF4538B-Q100   | Dual retriggerable precision monostable multivibrator               | 3.0 - 15            | ± 2.4               | 60                   | -40~85                | •                |               |               |

## Schmitt-triggers

| Type number    | Description   | Features     |            |               |                | Package (suffix) |               |               |              |               |
|----------------|---|--------------|------------|---------------|----------------|------------------|---------------|---------------|--------------|---------------|
|                |   | $V_{CC}$ (V) | $I_o$ (mA) | $t_{pd}$ (ns) | $T_{amb}$ (°C) | SOT108-1 (D)     | SOT402-1 (PW) | SOT762-1 (BQ) | SOT163-1 (D) | SOT360-1 (PW) |
| 74AHC14-Q100   | Hex inverter Schmitt-trigger                                    | 2.0 - 5.5    | ± 8        | 3.2           | -40~125        | •                | •             | •             |              |               |
| 74AHCT14-Q100  | Hex inverter Schmitt-trigger; TTL-enabled                       | 4.5 - 5.5    | ± 8        | 4.0           | -40~125        | •                | •             | •             |              |               |
| 74AHC132-Q100  | Quad 2-input NAND gate Schmitt-trigger                          | 2.0 - 5.5    | ± 8        | 3.3           | -40~125        | •                | •             | •             |              |               |
| 74AHCT132-Q100 | Quad 2-input NAND gate Schmitt-trigger; TTL-enabled             | 4.5 - 5.5    | ± 8        | 3.5           | -40~125        | •                | •             | •             |              |               |
| 74HC7014-Q100  | Hex buffer precision Schmitt-trigger                            | 2.0 - 6.0    | ± 5.2      | 27            | -40~125        | •                |               |               |              |               |
| 74HC14-Q100    | Hex inverter Schmitt-trigger                                    | 2.0 - 6.0    | ± 5.2      | 12            | -40~125        | •                | •             | •             |              |               |
| 74HCT14-Q100   | Hex inverter Schmitt-trigger; TTL-enabled                       | 4.5 - 5.5    | ± 4        | 17            | -40~125        | •                | •             | •             |              |               |
| 74HC132-Q100   | Quad 2-input NAND gate Schmitt-trigger                          | 2.0 - 6.0    | ± 5.2      | 11            | -40~125        | •                | •             | •             |              |               |
| 74HCT132-Q100  | Quad 2-input NAND gate Schmitt-trigger; TTL-enabled             | 4.5 - 5.5    | ± 4        | 17            | -40~125        | •                | •             | •             |              |               |
| 74HC7541-Q100  | Octal buffer/line driver Schmitt-trigger (3-State)              | 2.0 - 6.0    | ± 7.8      | 11            | -40~125        |                  |               |               | •            | •             |
| 74HCT7541-Q100 | Octal buffer/line driver Schmitt-trigger; TTL-enabled (3-State) | 4.5 - 5.5    | ± 6        | 16            | -40~125        |                  |               |               | •            | •             |
| 74LV132-Q100   | Quad 2-input NAND gate Schmitt-trigger                          | 1.0 - 5.5    | ± 12       | 10            | -40~125        | •                | •             | •             |              |               |
| 74LVC14A-Q100  | Hex inverter Schmitt-trigger                                    | 1.2 - 3.6    | ± 24       | 3.2           | -40~125        | •                | •             | •             |              |               |
| 74LVC132A-Q100 | Quad 2-input NAND gate Schmitt-trigger                          | 1.2 - 3.6    | ± 24       | 3.4           | -40~125        | •                | •             | •             |              |               |
| HEF40106B-Q100 | Hex inverter Schmitt-trigger                                    | 4.5 - 15.5   | ± 2.4      | 30            | -40~85         | •                | •             |               |              |               |

## Shift registers

| Type number    | Description   | Features            |                     |                        |                       | Package (suffix) |               |               |              |               |               |              |               |
|----------------|---|---------------------|---------------------|------------------------|-----------------------|------------------|---------------|---------------|--------------|---------------|---------------|--------------|---------------|
|                |   | V <sub>CC</sub> (V) | I <sub>o</sub> (mA) | t <sub>prop</sub> (ns) | T <sub>amb</sub> (°C) | SOT108-1 (D)     | SOT402-1 (PW) | SOT762-1 (BQ) | SOT109-1 (D) | SOT403-1 (PW) | SOT763-1 (BQ) | SOT163-1 (D) | SOT360-1 (PW) |
| 74AHC164-Q100  | 8-bit serial-in/parallel-out shift register   | 2.0 - 5.5           | ± 8                 | 4.5                    | -40~125               | •                | •             | •             |              |               |               |              |               |
| 74AHCT164-Q100 | 8-bit serial-in/parallel-out shift register; TTL-enabled  | 4.5 - 5.5           | ± 8                 | 3.4                    | -40~125               | •                | •             | •             |              |               |               |              |               |
| 74AHC594-Q100  | 8-bit serial-in/parallel-out shift register with output register                                  | 2.0 - 5.5           | ± 8                 | 4.1                    | -40~125               |                  |               |               | •            | •             | •             |              |               |
| 74AHCT594-Q100 | 8-bit serial-in/parallel-out shift register with output register; TTL-enabled                     | 4.5 - 5.5           | ± 8                 | 3.8                    | -40~125               |                  |               |               | •            | •             | •             |              |               |
| 74AHC595-Q100  | 8-bit serial-in/parallel-out shift register with output register (3-state)                        | 2.0 - 5.5           | ± 8                 | 4.0                    | -40~125               |                  |               |               | •            | •             | •             |              |               |
| 74AHCT595-Q100 | 8-bit serial-in/parallel-out shift register with output storage; TTL-enabled (3-state)            | 4.5 - 5.5           | ± 8                 | 3.8                    | -40~125               |                  |               |               | •            | •             | •             |              |               |
| 74HC164-Q100   | 8-bit serial-in/parallel-out shift register   | 2.0 - 6.0           | ± 5.2               | 12                     | -40~125               | •                | •             | •             |              |               |               |              |               |
| 74HCT164-Q100  | 8-bit serial-in/parallel-out shift register; TTL-enabled  | 4.5 - 5.5           | ± 4                 | 12                     | -40~125               | •                | •             | •             |              |               |               |              |               |
| 74HC165-Q100   | 8-bit parallel or serial-in/serial-out shift register   | 2.0 - 6.0           | ± 5.2               | 16                     | -40~125               |                  |               |               | •            | •             | •             |              |               |
| 74HCT165-Q100  | 8-bit parallel or serial-in/serial-out shift register; TTL-enabled                                | 4.5 - 5.5           | ± 4                 | 14                     | -40~125               |                  |               |               | •            | •             | •             |              |               |
| 74HC166-Q100   | 8-bit parallel or serial-in/serial-out shift register   | 2.0 - 6.0           | ± 5.2               | 15                     | -40~125               |                  |               |               | •            | •             |               |              |               |
| 74HCT166-Q100  | 8-bit parallel or serial-in/serial-out shift register; TTL-enabled                                | 4.5 - 5.5           | ± 4                 | 23                     | -40~125               |                  |               |               | •            |               |               |              |               |
| 74HCS94-Q100   | 8-bit serial-in/parallel-out shift register with output storage register                          | 2.0 - 6.0           | ± 7.8               | 14                     | -40~125               |                  |               | •             |              |               |               |              |               |
| 74HCTS94-Q100  | 8-bit serial-in/parallel-out shift register with output storage register; TTL-enabled             | 4.5 - 5.5           | ± 6                 | 15                     | -40~125               |                  |               |               | •            |               |               |              |               |
| 74HCS95-Q100   | 8-bit serial-in/parallel-out shift register with output storage register (3-state)                | 2.0 - 6.0           | ± 7.8               | 16                     | -40~125               |                  |               |               | •            | •             | •             |              |               |
| 74HCTS95-Q100  | 8-bit serial-in/parallel-out shift register with output storage register; TTL-enabled (3-state)   | 4.5 - 5.5           | ± 6                 | 25                     | -40~125               |                  |               |               | •            | •             | •             |              |               |
| 74HCS97-Q100   | 8-bit parallel or serial-in/parallel-out shift register with parallel input register              | 2.0 - 6.0           | ± 5.2               | 16                     | -40~125               |                  |               |               | •            | •             |               |              |               |
| 74HCTS97-Q100  | 8-bit parallel or serial-in/parallel-out shift register with parallel input register; TTL-enabled | 4.5 - 5.5           | ± 4                 | 20                     | -40~125               |                  |               |               | •            |               |               |              |               |
| 74HC4094-Q100  | 8-bit serial-in/serial or parallel-out shift register with output register (3-state)              | 2.0 - 6.0           | ± 5.2               | 15                     | -40~125               |                  |               |               | •            | •             |               |              |               |
| 74HCT4094-Q100 | 8-bit serial-in/serial or parallel-out shift register with output register; TTL-enabled (3-state) | 4.5 - 5.5           | ± 4                 | 19                     | -40~125               |                  |               |               | •            |               |               |              |               |
| 74LV164-Q100   | 8-bit serial-in/parallel-out shift register   | 1.0 - 5.5           | ± 12                | 12                     | -40~125               | •                | •             | •             |              |               |               |              |               |
| 74LV165-Q100   | 8-bit parallel or serial-in/serial-out shift register   | 1.0 - 5.5           | ± 12                | 18                     | -40~125               |                  |               |               | •            | •             |               |              |               |



## Shift registers

| Type number     | Description  | Features            |                     |                      |                       | Package (suffix) |               |               |              |               |               |              |               |
|-----------------|--|---------------------|---------------------|----------------------|-----------------------|------------------|---------------|---------------|--------------|---------------|---------------|--------------|---------------|
|                 |  | V <sub>cc</sub> (V) | I <sub>o</sub> (mA) | t <sub>pd</sub> (ns) | T <sub>amb</sub> (°C) | SOT108-1 (D)     | SOT402-1 (PW) | SOT762-1 (BQ) | SOT109-1 (D) | SOT403-1 (PW) | SOT763-1 (BQ) | SOT163-1 (D) | SOT360-1 (PW) |
| 74LV165A-Q100   | 8-bit parallel or serial-in/serial-out shift register  | 1.0 - 5.5           | ± 12                | 7.5                  | -40~125               |                  |               |               | •            | •             |               |              |               |
| 74LV4060-Q100   | 14-stage binary ripple counter with oscillator   | 1.0 - 5.5           | ± 6                 | 29                   | -40~125               |                  |               |               | •            | •             |               |              |               |
| 74LVC594A-Q100  | 8-bit serial-in/parallel-out shift register with output storage register                         | 1.2 - 5.5           | ± 24                | 3.1                  | -40~125               |                  |               |               | •            | •             | •             |              |               |
| 74VHC595-Q100   | 8-bit serial-in/parallel-out shift register with output storage register (3-state)               | 2.0 - 5.5           | ± 8                 | 4.0                  | -40~125               |                  |               |               | •            | •             | •             |              |               |
| 74VHCT595-Q100  | 8-bit serial-in/parallel-out shift register with output storage register; TTL-enabled (3-state)  | 4.5 - 5.5           | ± 8                 | 3.8                  | -40~125               |                  |               |               | •            | •             | •             |              |               |
| HEF4014B-Q100   | 8-bit shift register with synchronous parallel enable  | 3.0 - 15            | ± 2.4               | 40                   | -40~85                |                  |               |               | •            |               |               |              |               |
| HEF4021B-Q100   | 8-bit shift register with asynchronous parallel load   | 3.0 - 15            | ± 2.4               | 40                   | -40~85                |                  |               |               | •            | •             |               |              |               |
| HEF4094B-Q100   | 8-bit serial-in/serial or parallel-out shift register with output register (3-state)             | 3.0 - 15            | ± 2.4               | 50                   | -40~85                |                  |               |               | •            | •             |               |              |               |
| HEF4794B-Q100   | 8-bit serial-in/serial or parallel-out shift register with output register LED driver (3-state)  | 3.0 - 15            | -20                 | 45                   | -40~85                |                  |               |               | •            |               |               |              |               |
| HEF4894B-Q100   | 12-bit serial-in/serial or parallel-out shift register with output register LED driver (3-state) | 3.0 - 15            | -20                 | 45                   | -40~85                |                  |               |               |              |               |               | •            | •             |
| NPIC6C595-Q100  | 8-bit serial-in/parallel-out shift register with output storage register (3-state)               | 4.5 - 5.5           | -100                | 90                   | -40~125               |                  |               |               | •            | •             | •             |              |               |
| NPIC6C596-Q100  | 8-bit serial-in/serial or parallel-out shift register with output register LED driver (3-state)  | 4.5 - 5.5           | -100                | 90                   | -40~125               |                  |               |               | •            | •             | •             |              |               |
| NPIC6C596A-Q100 | 8-bit serial-in/serial or parallel-out shift register with output register LED driver (3-state)  | 2.3 - 5.5           | -100                | 90                   | -40~125               |                  |               |               | •            | •             | •             |              |               |
| NPIC6C4894-Q100 | 12-bit serial-in/serial or parallel-out shift register with output register LED driver (3-state) | 3.5 - 15            | -100                | 105                  | -40~125               |                  |               |               |              |               |               | •            | •             |

## Transceivers

| Type number       | Description   | Features     |            |               |                | Package (suffix) |               |               |                |
|-------------------|---|--------------|------------|---------------|----------------|------------------|---------------|---------------|----------------|
|                   |   | $V_{CC}$ (V) | $I_o$ (mA) | $t_{pd}$ (ns) | $T_{amb}$ (°C) | SOT163-1 (D)     | SOT360-1 (PW) | SOT764-1 (BQ) | SOT362-1 (DGG) |
| 74AHC245-Q100     | Octal transceiver (3-state)   | 2.0 - 5.5    | ± 8        | 3.5           | -40~125        | •                | •             | •             |                |
| 74AHCT245-Q100    | Octal transceiver; TTL-enabled (3-state)                            | 4.5 - 5.5    | ± 8        | 5.0           | -40~125        | •                | •             | •             |                |
| 74AVC16245-Q100   | 16-bit transceiver (3-state)  | 1.2 - 3.6    | ± 12       | 2.0           | -40~85         |                  |               |               | •              |
| 74HC245-Q100      | Octal transceiver (3-state)   | 2.0 - 6.0    | ± 7.8      | 7.0           | -40~125        | •                | •             | •             |                |
| 74HCT245-Q100     | Octal transceiver; TTL-enabled (3-state)                            | 4.5 - 5.5    | ± 6        | 10            | -40~125        | •                | •             | •             |                |
| 74LVC245A-Q100    | Octal transceiver (3-state)   | 1.2 - 3.6    | ± 24       | 2.9           | -40~125        | •                | •             | •             |                |
| 74LVCH245A-Q100   | Octal transceiver with bus hold (3-state)                           | 1.2 - 3.6    | ± 24       | 2.9           | -40~125        | •                | •             | •             |                |
| 74LVC162245A-Q100 | 16-bit transceiver with 30 $\Omega$ termination resistors (3-state) | 1.2 - 3.6    | ± 12       | 3.3           | -40~125        |                  |               |               | •              |

# Q100 mini logic functions and packages

## Analog switches

| Type number      | Description   | Features      |              |                       |                             |                           | Package (suffix) |             |             |             |               |               |
|------------------|---|---------------|--------------|-----------------------|-----------------------------|---------------------------|------------------|-------------|-------------|-------------|---------------|---------------|
|                  |   | Configuration | $V_{CC}$ (V) | $R_{ON}$ ( $\Omega$ ) | $R_{ON}(FLAT)$ ( $\Omega$ ) | $T_{amb}$ ( $^{\circ}C$ ) | SOT353-1 (GW)    | SOT753 (GV) | SOT363 (GW) | SOT457 (GV) | SOT505-2 (DP) | SOT765-1 (DC) |
| 74AHC1G66-Q100   | Single-pole, single-throw analog switch                   | SPST-NO       | 2.0 - 5.5    | 40                    | 5                           | -40~125                   | •                | •           |             |             |               |               |
| 74AHC1G66-Q100   | Single-pole, single-throw analog switch; TTL-enabled      | SPST-NO       | 4.5 - 5.5    | 40                    | 5                           | -40~125                   | •                | •           |             |             |               |               |
| 74HC1G66-Q100    | Single-pole, single-throw analog switch                   | SPST-NO       | 2.0 - 9.0    | 105                   | 23                          | -40~125                   | •                | •           |             |             |               |               |
| 74HCT1G66-Q100   | Single-pole, single-throw analog switch; TTL-enabled      | SPST-NO       | 4.5 - 5.5    | 118                   | 23                          | -40~125                   | •                | •           |             |             |               |               |
| 74HC2G66-Q100    | Dual single-pole, single-throw analog switch              | SPST-NO       | 2.0 - 9.0    | 105                   | 23                          | -40~125                   |                  |             |             |             | •             | •             |
| 74HCT2G66-Q100   | Dual single-pole, single-throw analog switch; TTL-enabled | SPST-NO       | 4.5 - 5.5    | 118                   | 23                          | -40~125                   |                  |             |             |             | •             | •             |
| 74LVC1G53-Q100   | Single-pole, double-throw analog switch                   | SPDT-Z        | 1.65 - 5.5   | 15                    | 1.5                         | -40~125                   |                  |             |             |             | •             | •             |
| 74LVC1G66-Q100   | Single-pole, single-throw analog switch                   | SPST-NO       | 1.65 - 5.5   | 15                    | 1.5                         | -40~125                   | •                | •           |             |             |               |               |
| 74LVC1G384-Q100  | Single-pole, single-throw analog switch                   | SPST-NC       | 1.65 - 5.5   | 15                    | 1.5                         | -40~125                   | •                | •           |             |             |               |               |
| 74LVC1G3157-Q100 | Single-pole, double-throw analog switch                   | SPDT          | 1.65 - 5.5   | 15                    | 1.5                         | -40~125                   |                  |             | •           | •           |               |               |
| 74LVC2G66-Q100   | Dual single-pole, single-throw analog switch              | SPST-NO       | 1.65 - 5.5   | 15                    | 1.5                         | -40~125                   |                  |             |             |             | •             | •             |

## Bus switches

| Type number  | Description     | Features     |                |                       |                           | Package (suffix) |               |
|--------------|-----------------|--------------|----------------|-----------------------|---------------------------|------------------|---------------|
|              |                 | $V_{CC}$ (V) | $V_{PASS}$ (V) | $R_{ON}$ ( $\Omega$ ) | $T_{amb}$ ( $^{\circ}C$ ) | SOT96-1 (D)      | SOT530-1 (PW) |
| CBT3306-Q100 | Dual bus switch | 4.5 - 5.5    | 3.9            | 7                     | -40~85                    | •                | •             |

## Buffers/Inverters

| Type number     | Description  | Features     |            |                        |                       | Package (suffix) |             |             |             |               |               |
|-----------------|--|--------------|------------|------------------------|-----------------------|------------------|-------------|-------------|-------------|---------------|---------------|
|                 |  | $V_{CC}$ (V) | $I_o$ (mA) | $t_{\text{prop}}$ (ns) | $T_{\text{amb}}$ (°C) | SOT353-1 (GW)    | SOT753 (GV) | SOT363 (GW) | SOT457 (GV) | SOT505-2 (DP) | SOT765-1 (DC) |
| 74AHC1GU04-Q100 | Single inverter; unbuffered                            | 2.0 - 5.5    | ± 8        | 2.6                    | -40~125               | •                | •           |             |             |               |               |
| 74AHC3GU04-Q100 | Triple inverter; unbuffered                            | 2.0 - 5.5    | ± 8        | 2.5                    | -40~125               |                  |             |             |             | •             | •             |
| 74AHC1G04-Q100  | Single inverter  | 2.0 - 5.5    | ± 8        | 3.1                    | -40~125               | •                | •           |             |             |               |               |
| 74AHC1G04-Q100  | Single inverter; TTL-enabled                           | 4.5 - 5.5    | ± 8        | 3.4                    | -40~125               | •                | •           |             |             |               |               |
| 74AHC1G07-Q100  | Single buffer; open-drain                              | 2.0 - 5.5    | 8          | 4.2                    | -40~125               | •                | •           |             |             |               |               |
| 74AHC1G17-Q100  | Single buffer with Schmitt-trigger inputs              | 2.0 - 5.5    | ± 8        | 3.2                    | -40~125               | •                |             |             |             |               |               |
| 74AHC1G17-Q100  | Single buffer with Schmitt-trigger inputs; TTL-enabled | 4.5 - 5.5    | ± 8        | 4.1                    | -40~125               | •                |             |             |             |               |               |
| 74AHC1G125-Q100 | Single buffer/line driver (3-state)                    | 2.0 - 5.5    | ± 8        | 3.4                    | -40~125               | •                | •           |             |             |               |               |
| 74AHC1G125-Q100 | Single buffer/line driver; TTL-enabled (3-state)       | 4.5 - 5.5    | ± 8        | 3.4                    | -40~125               | •                | •           |             |             |               |               |
| 74AHC1G126-Q100 | Single buffer/line driver (3-state)                    | 2.0 - 5.5    | ± 8        | 3.4                    | -40~125               | •                | •           |             |             |               |               |
| 74AHC1G126-Q100 | Single buffer/line driver; TTL-enabled (3-state)       | 4.5 - 5.5    | ± 8        | 3.4                    | -40~125               | •                | •           |             |             |               |               |
| 74AHC2G125-Q100 | Dual buffer/line driver (3-state)                      | 2.0 - 5.5    | ± 8        | 3.4                    | -40~125               |                  |             |             |             | •             | •             |
| 74AHC2G125-Q100 | Dual buffer/line driver; TTL-enabled (3-state)         | 4.5 - 5.5    | ± 8        | 3.4                    | -40~125               |                  |             |             |             | •             | •             |
| 74AHC2G126-Q100 | Dual buffer/line driver (3-state)                      | 2.0 - 5.5    | ± 8        | 3.4                    | -40~125               |                  |             |             |             | •             | •             |
| 74AHC2G126-Q100 | Dual buffer/line driver; TTL-enabled (3-state)         | 4.5 - 5.5    | ± 8        | 3.4                    | -40~125               |                  |             |             |             | •             | •             |
| 74AHC2G241-Q100 | Dual buffer/line driver (3-state)                      | 2.0 - 5.5    | ± 8        | 3.4                    | -40~125               |                  |             |             |             | •             | •             |
| 74AHC2G241-Q100 | Dual buffer/line driver; TTL-enabled (3-state)         | 4.5 - 5.5    | ± 8        | 3.4                    | -40~125               |                  |             |             |             | •             | •             |
| 74AHC3G04-Q100  | Triple inverter  | 2.0 - 5.5    | ± 8        | 3.1                    | -40~125               |                  |             |             |             | •             | •             |
| 74AHC3G04-Q100  | Triple inverter; TTL-enabled                           | 4.5 - 5.5    | ± 8        | 3.0                    | -40~125               |                  |             |             |             | •             | •             |
| 74AUP1G04-Q100  | Single inverter  | 1.1 - 3.6    | ± 1.9      | 4.0                    | -40~125               | •                | •           |             |             |               |               |
| 74AUP1G06-Q100  | Single inverter; open-drain                            | 1.1 - 3.6    | 1.9        | 4.5                    | -40~125               | •                |             |             |             |               |               |
| 74AUP1G34-Q100  | Single buffer  | 1.1 - 3.6    | ± 1.9      | 3.9                    | -40~125               | •                |             |             |             |               |               |
| 74AUP1G125-Q100 | Single buffer/line driver (3-state)                    | 1.1 - 3.6    | ± 1.9      | 4.3                    | -40~125               | •                |             |             |             |               |               |
| 74AUP2G04-Q100  | Dual inverter  | 1.1 - 3.6    | ± 1.9      | 4.0                    | -40~125               |                  |             | •           |             |               |               |
| 74AUP2GU04-Q100 | Dual inverter; unbuffered                              | 1.1 - 3.6    | ± 1.9      | 2.3                    | -40~125               |                  |             | •           |             |               |               |
| 74HC1GU04-Q100  | Single inverter; unbuffered                            | 2.0 - 6.0    | ± 2.6      | 5.0                    | -40~125               | •                | •           |             |             |               |               |
| 74HC2GU04-Q100  | Dual inverter; unbuffered                              | 2.0 - 6.0    | ± 5.2      | 5.0                    | -40~125               |                  |             | •           | •           |               |               |
| 74HC3GU04-Q100  | Triple inverter; unbuffered                            | 2.0 - 6.0    | ± 5.2      | 6.0                    | -40~125               |                  |             |             |             | •             | •             |
| 74HC1G04-Q100   | Single inverter  | 2.0 - 6.0    | ± 2.6      | 7.0                    | -40~125               | •                | •           |             |             |               |               |
| 74HCT1G04-Q100  | Single inverter; TTL-enabled                           | 4.5 - 5.5    | ± 2.0      | 8.0                    | -40~125               | •                | •           |             |             |               |               |
| 74HC1G125-Q100  | Single buffer/line driver (3-state)                    | 2.0 - 6.0    | ± 2.6      | 9.0                    | -40~125               | •                | •           |             |             |               |               |
| 74HCT1G125-Q100 | Single buffer/line driver; TTL-enabled (3-state)       | 4.5 - 5.5    | ± 2.0      | 10                     | -40~125               | •                | •           |             |             |               |               |

## Buffers/Inverters

| Type number     | Description                                    | Features            |                     |                      |                       | Package (suffix) |             |             |             |               |               |
|-----------------|--|---------------------|---------------------|----------------------|-----------------------|------------------|-------------|-------------|-------------|---------------|---------------|
|                 |  | V <sub>CC</sub> (V) | I <sub>O</sub> (mA) | t <sub>pd</sub> (ns) | T <sub>amb</sub> (°C) | SOT353-1 (GW)    | SOT753 (GV) | SOT363 (GW) | SOT457 (GV) | SOT505-2 (DP) | SOT765-1 (DC) |
| 74HC2G04-Q100   | Dual inverter                                  | 2.0 - 6.0           | ± 5.2               | 8.0                  | -40~125               |                  |             | •           | •           |               |               |
| 74HCT2G04-Q100  | Dual inverter; TTL-enabled                     | 4.5 - 5.5           | ± 4.0               | 10                   | -40~125               |                  |             | •           | •           |               |               |
| 74HC2G34-Q100   | Dual buffer                                    | 2.0 - 6.0           | ± 5.2               | 9.0                  | -40~125               |                  |             | •           | •           |               |               |
| 74HCT2G34-Q100  | Dual buffer; TTL-enabled                       | 4.5 - 5.5           | ± 4.0               | 10                   | -40~125               |                  |             | •           | •           |               |               |
| 74HC2G125-Q100  | Dual buffer/line driver (3-state)              | 2.0 - 6.0           | ± 5.2               | 10                   | -40~125               |                  |             |             |             | •             | •             |
| 74HCT2G125-Q100 | Dual buffer/line driver; TTL-enabled (3-state) | 4.5 - 5.5           | ± 4.0               | 12                   | -40~125               |                  |             |             |             | •             | •             |
| 74HC3G04-Q100   | Triple inverter                                | 2.0 - 6.0           | ± 5.2               | 8.0                  | -40~125               |                  |             |             |             | •             | •             |
| 74HCT3G04-Q100  | Triple inverter; TTL-enabled                   | 4.5 - 5.5           | ± 4.0               | 10                   | -40~125               |                  |             |             |             | •             | •             |
| 74HC3G07-Q100   | Triple buffer; open-drain                      | 2.0 - 6.0           | 5.2                 | 9.0                  | -40~125               |                  |             |             |             | •             | •             |
| 74HCT3G07-Q100  | Triple buffer; open-drain; TTL-enabled         | 4.5 - 5.5           | 4                   | 9.0                  | -40~125               |                  |             |             |             | •             | •             |
| 74HC3G34-Q100   | Triple buffer                                  | 2.0 - 6.0           | ± 5.2               | 9.0                  | -40~125               |                  |             |             |             | •             | •             |
| 74HCT3G34-Q100  | Triple buffer; TTL-enabled                     | 4.5 - 5.5           | ± 4.0               | 10                   | -40~125               |                  |             |             |             |               | •             |
| 74LVC1G04-Q100  | Single inverter                                | 1.65 - 5.5          | ± 32                | 2.0                  | -40~125               | •                | •           |             |             |               |               |
| 74LVC1G06-Q100  | Single inverter; open-drain                    | 1.65 - 5.5          | 32                  | 2.3                  | -40~125               | •                | •           |             |             |               |               |
| 74LVC1G07-Q100  | Single buffer; open-drain                      | 1.65 - 5.5          | 32                  | 2.2                  | -40~125               | •                | •           |             |             |               |               |
| 74LVC1G34-Q100  | Single buffer                                  | 1.65 - 5.5          | ± 32                | 2.0                  | -40~125               | •                | •           |             |             |               |               |
| 74LVC1G125-Q100 | Single buffer/line driver (3-state)            | 1.65 - 5.5          | ± 32                | 2.1                  | -40~125               | •                | •           |             |             |               |               |
| 74LVC1G126-Q100 | Single buffer/line driver (3-state)            | 1.65 - 5.5          | ± 32                | 2.0                  | -40~125               | •                | •           |             |             |               |               |
| 74LVC1GU04-Q100 | Single inverter; unbuffered                    | 1.65 - 5.5          | ± 32                | 1.6                  | -40~125               | •                | •           |             |             |               |               |
| 74LVC2G04-Q100  | Dual inverter                                  | 1.65 - 5.5          | ± 32                | 2.7                  | -40~125               |                  |             | •           | •           |               |               |
| 74LVC2G06-Q100  | Dual inverter; open-drain                      | 1.65 - 5.5          | 32                  | 2.3                  | -40~125               |                  |             | •           | •           |               |               |
| 74LVC2G07-Q100  | Dual buffer; open-drain                        | 1.65 - 5.5          | 32                  | 2.6                  | -40~125               |                  |             | •           | •           |               |               |
| 74LVC2G125-Q100 | Dual buffer/line driver (3-state)              | 1.65 - 5.5          | ± 32                | 2.3                  | -40~125               |                  |             |             |             | •             | •             |
| 74LVC2G126-Q100 | Dual buffer/line driver (3-state)              | 1.65 - 5.5          | ± 32                | 2.4                  | -40~125               |                  |             |             |             | •             | •             |
| 74LVC2G240-Q100 | Dual inverter/line driver (3-state)            | 1.65 - 5.5          | ± 32                | 2.5                  | -40~125               |                  |             |             |             | •             | •             |
| 74LVC2G241-Q100 | Dual buffer/line driver (3-state)              | 1.65 - 5.5          | ± 32                | 2.6                  | -40~125               |                  |             |             |             | •             | •             |
| 74LVC2GU04-Q100 | Dual inverter; unbuffered                      | 1.65 - 5.5          | ± 32                | 2.3                  | -40~125               |                  |             | •           | •           |               |               |
| 74LVC3G04-Q100  | Triple inverter                                | 1.65 - 5.5          | ± 32                | 2.7                  | -40~125               |                  |             |             |             | •             | •             |
| 74LVC3G07-Q100  | Triple buffer; open-drain                      | 1.65 - 5.5          | 32                  | 2.1                  | -40~125               |                  |             |             |             | •             | •             |
| 74LVC3G34-Q100  | Triple buffer                                  | 1.65 - 5.5          | ± 32                | 2.2                  | -40~125               |                  |             |             |             | •             | •             |

## Digital decoders/Demultiplexers

| Type number    | Description                    | Features     |            |               |                | Package (suffix) |             |
|----------------|--------------------------------|--------------|------------|---------------|----------------|------------------|-------------|
|                |                                | $V_{CC}$ (V) | $I_O$ (mA) | $t_{pd}$ (ns) | $T_{amb}$ (°C) | SOT363 (GW)      | SOT457 (GV) |
| 74LVC1G18-Q100 | 1-to-2 demultiplexer (3-state) | 1.65 - 5.5   | ± 32       | 2.3           | -40~125        | •                | •           |
| 74LVC1G19-Q100 | 1-to-2 demultiplexer           | 1.65 - 5.5   | ± 32       | 1.8           | -40~125        | •                |             |

## Digital multiplexers

| Type number     | Description                | Features     |            |               |                | Package (suffix) |             |
|-----------------|----------------------------|--------------|------------|---------------|----------------|------------------|-------------|
|                 |                            | $V_{CC}$ (V) | $I_O$ (mA) | $t_{pd}$ (ns) | $T_{amb}$ (°C) | SOT363 (GW)      | SOT457 (GV) |
| 74LVC1G157-Q100 | Single 2-input multiplexer | 1.65 - 5.5   | ± 32       | 2.2           | -40~125        | •                | •           |

## Flip-flops

| Type number     | Description   | Features     |            |               |                | Package (suffix) |             |             |             |               |               |
|-----------------|---|--------------|------------|---------------|----------------|------------------|-------------|-------------|-------------|---------------|---------------|
|                 |   | $V_{CC}$ (V) | $I_O$ (mA) | $t_{pd}$ (ns) | $T_{amb}$ (°C) | SOT353-1 (GW)    | SOT753 (GV) | SOT363 (GW) | SOT457 (GV) | SOT505-2 (DP) | SOT765-1 (DC) |
| 74AHC1G79-Q100  | Single D-type flip-flop; positive-edge trigger                    | 2.0 - 5.5    | ± 8        | 3.5           | -40~125        | •                | •           |             |             |               |               |
| 74AHCT1G79-Q100 | Single D-type flip-flop; positive-edge trigger; TTL-enabled       | 4.5 - 5.5    | ± 8        | 3.5           | -40~125        | •                | •           |             |             |               |               |
| 74AUP1G74-Q100  | Single D-type flip-flop with set and reset; positive-edge trigger | 1.1 - 3.6    | ± 1.9      | 8.1           | -40~125        |                  |             |             |             |               | •             |
| 74AUP1G175-Q100 | Single D flip-flop with reset; positive-edge trigger              | 1.1 - 3.6    | ± 1.9      | 7.4           | -40~125        |                  |             | •           |             |               |               |
| 74AUP1G374-Q100 | Single D-type flip-flop; positive-edge trigger (3-state)          | 1.1 - 3.6    | ± 1.9      | 7.9           | -40~125        |                  |             | •           |             |               |               |
| 74AUP2G79-Q100  | Dual D-type flip-flop; positive-edge trigger                      | 1.1 - 3.6    | ± 1.9      | 8.5           | -40~125        |                  |             |             |             |               | •             |
| 74LVC1G74-Q100  | Single D-type flip-flop with set and reset; positive-edge trigger | 1.65 - 5.5   | ± 32       | 3.5           | -40~125        |                  |             |             |             | •             | •             |
| 74LVC1G79-Q100  | Single D-type flip-flop; positive-edge trigger                    | 1.65 - 5.5   | ± 32       | 2.2           | -40~125        | •                | •           |             |             |               |               |
| 74LVC1G80-Q100  | Single D-type flip-flop; positive-edge trigger                    | 1.65 - 5.5   | ± 32       | 2.4           | -40~125        | •                | •           |             |             |               |               |
| 74LVC1G175-Q100 | Single D flip-flop with reset; positive-edge trigger              | 1.65 - 5.5   | ± 32       | 3.1           | -40~125        |                  |             | •           | •           |               |               |
| 74LVC2G74-Q100  | Single D-type flip-flop with set and reset; positive-edge trigger | 1.65 - 5.5   | ± 32       | 3.5           | -40~125        |                  |             |             |             | •             | •             |

## Gates

| Type number    | Description                                      | Features            |                     |                      |                       | Package (suffix) |             |             |             |               |               |
|----------------|--|---------------------|---------------------|----------------------|-----------------------|------------------|-------------|-------------|-------------|---------------|---------------|
|                |  | V <sub>CC</sub> (V) | I <sub>O</sub> (mA) | t <sub>pd</sub> (ns) | T <sub>amb</sub> (°C) | SOT353-1 (GW)    | SOT753 (GV) | SOT363 (GW) | SOT457 (GV) | SOT505-2 (DP) | SOT765-1 (DC) |
| 74AHC1G09-Q100 | Single 2-input AND gate; open-drain              | 2.0 - 5.5           | ± 8                 | 3.2                  | -40~125               | •                | •           |             |             |               |               |
| 74AHC1G00-Q100 | Single 2-input NAND gate                         | 2.0 - 5.5           | ± 8                 | 3.5                  | -40~125               | •                | •           |             |             |               |               |
| 74AHC1G00-Q100 | Single 2-input NAND gate; TTL-enabled            | 4.5 - 5.5           | ± 8                 | 3.6                  | -40~125               | •                | •           |             |             |               |               |
| 74AHC1G02-Q100 | Single 2-input NOR gate                          | 2.0 - 5.5           | ± 8                 | 3.2                  | -40~125               | •                | •           |             |             |               |               |
| 74AHC1G02-Q100 | Single 2-input NOR gate; TTL-enabled             | 4.5 - 5.5           | ± 8                 | 3.5                  | -40~125               | •                | •           |             |             |               |               |
| 74AHC1G08-Q100 | Single 2-input AND gate                          | 2.0 - 5.5           | ± 8                 | 3.2                  | -40~125               | •                | •           |             |             |               |               |
| 74AHC1G08-Q100 | Single 2-input AND gate; TTL-enabled             | 4.5 - 5.5           | ± 8                 | 3.6                  | -40~125               | •                | •           |             |             |               |               |
| 74AHC1G32-Q100 | Single 2-input OR gate                           | 2.0 - 5.5           | ± 8                 | 3.2                  | -40~125               | •                | •           |             |             |               |               |
| 74AHC1G32-Q100 | Single 2-input OR gate; TTL-enabled              | 4.5 - 5.5           | ± 8                 | 3.3                  | -40~125               | •                | •           |             |             |               |               |
| 74AHC1G86-Q100 | 2-input EXCLUSIVE-OR gate                        | 2.0 - 5.5           | ± 8                 | 3.4                  | -40~125               | •                | •           |             |             |               |               |
| 74AHC1G86-Q100 | 2-input EXCLUSIVE-OR gate; TTL-enabled           | 4.5 - 5.5           | ± 8                 | 3.5                  | -40~125               | •                | •           |             |             |               |               |
| 74AHC2G00-Q100 | Dual 2-input NAND gate                           | 2.0 - 5.5           | ± 8                 | 3.5                  | -40~125               |                  |             |             |             | •             | •             |
| 74AHC2G00-Q100 | Dual 2-input NAND gate; TTL-enabled              | 4.5 - 5.5           | ± 8                 | 3.6                  | -40~125               |                  |             |             |             | •             | •             |
| 74AHC2G08-Q100 | Dual 2-input AND gate                            | 2.0 - 5.5           | ± 8                 | 3.2                  | -40~125               |                  |             |             |             | •             | •             |
| 74AHC2G08-Q100 | Dual 2-input AND gate; TTL-enabled               | 4.5 - 5.5           | ± 8                 | 3.6                  | -40~125               |                  |             |             |             | •             | •             |
| 74AHC2G32-Q100 | Dual 2-input OR gate                             | 2.0 - 5.5           | ± 8                 | 3.2                  | -40~125               |                  |             |             |             | •             | •             |
| 74AHC2G32-Q100 | Dual 2-input OR gate; TTL-enabled                | 4.5 - 5.5           | ± 8                 | 3.3                  | -40~125               |                  |             |             |             | •             | •             |
| 74AUP1G02-Q100 | Single 2-input NOR gate                          | 1.1 - 3.6           | ± 1.9               | 8.2                  | -40~125               | •                |             |             |             |               |               |
| 74AUP1G08-Q100 | Single 2-input AND gate                          | 1.1 - 3.6           | ± 1.9               | 8.2                  | -40~125               | •                |             |             |             |               |               |
| 74AUP1G32-Q100 | Single 2-input OR gate                           | 1.1 - 3.6           | ± 1.9               | 7.9                  | -40~125               | •                |             |             |             |               |               |
| 74AUP1G86-Q100 | Single 2-input EXCLUSIVE-OR gate                 | 1.1 - 3.6           | ± 1.9               | 3.3                  | -40~125               | •                |             |             |             |               |               |
| 74AUP1T98-Q100 | Configurable gate with voltage level translation | 2.3 - 3.6 V         | ± 1.9               | 8.7                  | -40~125               |                  |             | •           |             |               |               |
| 74HC1G86-Q100  | Single 2-input EXCLUSIVE-OR gate                 | 2.0 - 6.0           | ± 2.6               | 9.0                  | -40~125               | •                | •           |             |             |               |               |
| 74HC1G00-Q100  | Single 2-input NAND gate                         | 2.0 - 6.0           | ± 2.6               | 7.0                  | -40~125               | •                |             |             |             |               |               |
| 74HCT1G00-Q100 | Single 2-input NAND gate; TTL-enabled            | 4.5 - 5.5           | ± 2                 | 10                   | -40~125               | •                | •           |             |             |               |               |
| 74HC1G02-Q100  | Single 2-input NOR gate                          | 2.0 - 6.0           | ± 2.6               | 7.0                  | -40~125               | •                | •           |             |             |               |               |
| 74HCT1G02-Q100 | Single 2-input NOR gate; TTL-enabled             | 4.5 - 5.5           | ± 2.0               | 9.0                  | -40~125               | •                | •           |             |             |               |               |
| 74HC1G08-Q100  | Single 2-input AND gate                          | 2.0 - 6.0           | ± 5.2               | 7.0                  | -40~125               | •                | •           |             |             |               |               |
| 74HCT1G08-Q100 | Single 2-input AND gate; TTL-enabled             | 4.5 - 5.5           | ± 2                 | 11                   | -40~125               | •                | •           |             |             |               |               |
| 74HC1G32-Q100  | Single 2-input OR gate                           | 2.0 - 6.0           | ± 2.6               | 8.0                  | -40~125               | •                | •           |             |             |               |               |
| 74HCT1G32-Q100 | Single 2-input OR gate; TTL-enabled              | 4.5 - 5.5           | ± 2.0               | 10                   | -40~125               | •                | •           |             |             |               |               |
| 74HC2G00-Q100  | Dual 2-input NAND gate                           | 2.0 - 6.0           | ± 5.6               | 9.0                  | -40~125               |                  |             |             |             | •             | •             |
| 74HCT2G00-Q100 | Dual 2-input NAND gate; TTL-enabled              | 4.5 - 5.5           | ± 4                 | 12                   | -40~125               |                  |             |             |             | •             | •             |
| 74HC2G02-Q100  | Dual 2-input NOR gate                            | 2.0 - 6.0           | ± 5.2               | 9.0                  | -40~125               |                  |             |             |             | •             | •             |
| 74HCT2G02-Q100 | Dual 2-input NOR gate; TTL-enabled               | 4.5 - 5.5           | ± 4                 | 12                   | -40~125               |                  |             |             |             | •             | •             |
| 74HC2G08-Q100  | Dual 2-input AND gate                            | 2.0 - 6.0           | ± 5.2               | 9.0                  | -40~125               |                  |             |             |             | •             | •             |

## Gates

| Type number     | Description                                   | Features            |                     |                      |                       | Package (suffix) |             |             |             |               |               |
|-----------------|---|---------------------|---------------------|----------------------|-----------------------|------------------|-------------|-------------|-------------|---------------|---------------|
|                 |   | V <sub>CC</sub> (V) | I <sub>O</sub> (mA) | t <sub>pd</sub> (ns) | T <sub>amb</sub> (°C) | SOT353-1 (GW)    | SOT753 (GV) | SOT363 (GW) | SOT457 (GV) | SOT505-2 (DP) | SOT765-1 (DC) |
| 74HCT2G08-Q100  | Dual 2-input AND gate; TTL-enabled            | 4.5 - 5.5           | ± 4                 | 14                   | -40~125               |                  |             |             |             | •             | •             |
| 74HC2G32-Q100   | Dual 2-input OR gate                          | 2.0 - 6.0           | ± 5.2               | 9.0                  | -40~125               |                  |             |             |             | •             | •             |
| 74HCT2G32-Q100  | Dual 2-input OR gate; TTL-enabled             | 4.5 - 5.5           | ± 4.0               | 13                   | -40~125               |                  |             |             |             | •             | •             |
| 74HC2G86-Q100   | Dual 2-input EXCLUSIVE-OR gate                | 2.0 - 6.0           | ± 5.2               | 9.0                  | -40~125               |                  |             |             |             | •             | •             |
| 74HCT2G86-Q100  | Dual 2-input EXCLUSIVE-OR gate; TTL-enabled   | 4.5 - 5.5           | ± 4.0               | 11                   | -40~125               |                  |             |             |             | •             | •             |
| 74HCT1G86-Q100  | Single 2-input EXCLUSIVE-OR gate; TTL-enabled | 4.5 - 5.5           | ± 2.0               | 10                   | -40~125               | •                | •           |             |             |               |               |
| 74LVC1G00-Q100  | Single 2-input NAND gate                      | 1.65 - 5.5          | ± 32                | 2.2                  | -40~125               | •                | •           |             |             |               |               |
| 74LVC1G02-Q100  | Single 2-input NOR gate                       | 1.65 - 5.5          | ± 32                | 2.1                  | -40~125               | •                | •           |             |             |               |               |
| 74LVC1G08-Q100  | Single 2-input AND gate                       | 1.65 - 5.5          | ± 32                | 2.1                  | -40~125               | •                | •           |             |             |               |               |
| 74LVC1G10-Q100  | Single 3-input NAND gate                      | 1.65 - 5.5          | ± 32                | 2.6                  | -40~125               |                  |             | •           |             |               |               |
| 74LVC1G11-Q100  | Single 3-input AND gate                       | 1.65 - 5.5          | ± 32                | 2.6                  | -40~125               |                  |             | •           | •           |               |               |
| 74LVC1G32-Q100  | Single 2-input OR gate                        | 1.65 - 5.5          | ± 32                | 2.1                  | -40~125               | •                | •           |             |             |               |               |
| 74LVC1G38-Q100  | Single 2-input NAND gate; open-drain          | 1.65 - 5.5          | 32                  | 2.3                  | -40~125               | •                | •           |             |             |               |               |
| 74LVC1G57-Q100  | Configurable gate; Schmitt-trigger            | 1.65 - 5.5          | ± 32                | 3.8                  | -40~125               |                  |             | •           | •           |               |               |
| 74LVC1G58-Q100  | Configurable gate; Schmitt-trigger            | 1.65 - 5.5          | ± 32                | 3.8                  | -40~125               |                  |             | •           | •           |               |               |
| 74LVC1G86-Q100  | Single 2-input EXCLUSIVE-OR gate              | 1.65 - 5.5          | ± 32                | 2.4                  | -40~125               | •                | •           |             |             |               |               |
| 74LVC1G332-Q100 | Single 3-input OR gate                        | 1.65 - 5.5          | ± 32                | 2.6                  | -40~125               |                  |             | •           | •           |               |               |
| 74LVC1GX04-Q100 | Crystal driver                                | 1.65 - 5.5          | ± 24                | 2.8                  | -40~125               |                  |             | •           | •           |               |               |
| 74LVC2G00-Q100  | Dual 2-input NAND gate                        | 1.65 - 5.5          | ± 32                | 2.2                  | -40~125               |                  |             |             |             |               | •             |
| 74LVC2G02-Q100  | Dual 2-input NOR gate                         | 1.65 - 5.5          | ± 32                | 2.4                  | -40~125               |                  |             |             |             | •             | •             |
| 74LVC2G08-Q100  | Dual 2-input AND gate                         | 1.65 - 5.5          | ± 24                | 2.1                  | -40~125               |                  |             |             |             | •             | •             |
| 74LVC2G32-Q100  | Dual 2-input OR gate                          | 1.65 - 5.5          | ± 32                | 2.2                  | -40~125               |                  |             |             |             | •             | •             |
| 74LVC2G34-Q100  | Dual buffer                                   | 1.65 - 5.5          | ± 32                | 2.2                  | -40~125               |                  |             | •           | •           |               |               |
| 74LVC2G86-Q100  | Dual 2-input EXCLUSIVE-OR gate                | 1.65 - 5.5          | ± 32                | 2.3                  | -40~125               |                  |             |             |             | •             | •             |

## Latches/Registered drivers

| Type number     | Description                               | Features            |                     |                      |                       | Package (suffix) |
|-----------------|---|---------------------|---------------------|----------------------|-----------------------|------------------|
|                 |   | V <sub>CC</sub> (V) | I <sub>O</sub> (mA) | t <sub>pd</sub> (ns) | T <sub>amb</sub> (°C) | SOT363 (GW)      |
| 74AUP1G373-Q100 | Single D-type transparent latch (3-state) | 1.1 - 3.6           | ±1.9                | 8.5                  | -40~125               | •                |



## Multivibrators

| Type number     | Description                                   | Features            |                     |                      |                       | Package (suffix) |               |
|-----------------|---|---------------------|---------------------|----------------------|-----------------------|------------------|---------------|
|                 |   | V <sub>CC</sub> (V) | I <sub>O</sub> (mA) | t <sub>pd</sub> (ns) | T <sub>amb</sub> (°C) | SOT505-2 (DP)    | SOT765-1 (DC) |
| 74LVC1G123-Q100 | Single retriggerable monostable multivibrator | 1.65 - 5.5          | ± 32                | 3.5                  | -40~125               | •                | •             |

## Schmitt-triggers

| Type number    | Description                                  | Features            |                     |                      |                       | Package (suffix) |             |             |             |               |               |
|----------------|--|---------------------|---------------------|----------------------|-----------------------|------------------|-------------|-------------|-------------|---------------|---------------|
|                |  | V <sub>CC</sub> (V) | I <sub>O</sub> (mA) | t <sub>pd</sub> (ns) | T <sub>amb</sub> (°C) | SOT353-1 (GW)    | SOT753 (GV) | SOT363 (GW) | SOT457 (GV) | SOT505-2 (DP) | SOT765-1 (DC) |
| 74AHC1G14-Q100 | Single inverter Schmitt-trigger              | 2.0 - 5.5           | ± 8                 | 3.2                  | -40~125               | •                | •           |             |             |               |               |
| 74AHT1G14-Q100 | Single inverter Schmitt-trigger; TTL-enabled | 4.5 - 5.5           | ± 8                 | 4.1                  | -40~125               | •                | •           |             |             |               |               |
| 74AHC3G14-Q100 | Triple inverter Schmitt-trigger              | 2.0 - 5.5           | ± 8                 | 3.2                  | -40~125               |                  |             |             |             | •             | •             |
| 74AHT3G14-Q100 | Triple inverter Schmitt-trigger; TTL-enabled | 4.5 - 5.5           | ± 8                 | 4.1                  | -40~125               |                  |             |             |             | •             | •             |
| 74HC1G14-Q100  | Single inverter Schmitt-trigger              | 2.0 - 6.0           | ± 2.6               | 10                   | -40~125               | •                | •           |             |             |               |               |
| 74HCT1G14-Q100 | Single inverter Schmitt-trigger; TTL-enabled | 4.5 - 5.5           | ± 2.0               | 15                   | -40~125               | •                | •           |             |             |               |               |
| 74HC2G14-Q100  | Dual inverter Schmitt-trigger                | 2.0 - 6.0           | ± 5.2               | 16                   | -40~125               |                  |             | •           | •           |               |               |
| 74HCT2G14-Q100 | Dual inverter Schmitt-trigger; TTL-enabled   | 4.5 - 5.5           | ± 4.0               | 21                   | -40~125               |                  |             | •           | •           |               |               |
| 74HC2G17-Q100  | Dual buffer Schmitt-trigger                  | 2.0 - 6.0           | ± 5.2               | 12                   | -40~125               |                  |             | •           | •           |               |               |
| 74HCT2G17-Q100 | Dual buffer Schmitt-trigger; TTL-enabled     | 4.5 - 5.5           | ± 4.0               | 21                   | -40~125               |                  |             | •           | •           |               |               |
| 74HC3G14-Q100  | Triple inverter Schmitt-trigger              | 2.0 - 6.0           | ± 5.2               | 16                   | -40~125               |                  |             |             |             | •             | •             |
| 74HCT3G14-Q100 | Triple inverter Schmitt-trigger; TTL-enabled | 4.5 - 5.5           | ± 4.0               | 21                   | -40~125               |                  |             |             |             | •             | •             |
| 74LVC1G14-Q100 | Single inverter Schmitt-trigger              | 1.65 - 5.5          | ± 32                | 3.0                  | -40~125               | •                | •           |             |             |               |               |
| 74LVC1G17-Q100 | Single buffer Schmitt-trigger                | 1.65 - 5.5          | ± 32                | 3.0                  | -40~125               | •                | •           |             |             |               |               |
| 74LVC2G14-Q100 | Dual inverter Schmitt-trigger                | 1.65 - 5.5          | ± 32                | 3.9                  | -40~125               |                  |             | •           | •           |               |               |
| 74LVC2G17-Q100 | Dual buffer Schmitt-trigger                  | 1.65 - 5.5          | ± 32                | 3.6                  | -40~125               |                  |             | •           | •           |               |               |
| 74LVC3G17-Q100 | Triple buffer Schmitt-trigger                | 1.65 - 5.5          | ± 32                | 3.6                  | -40~125               |                  |             |             |             | •             | •             |

## Level shifters/Translators

| Type number     | Description   | Features                |                         |                     |                       | Package (suffix) |             |               |               |               |
|-----------------|---|-------------------------|-------------------------|---------------------|-----------------------|------------------|-------------|---------------|---------------|---------------|
|                 |   | V <sub>CC</sub> (A) (V) | V <sub>CC</sub> (B) (V) | I <sub>o</sub> (mA) | T <sub>amb</sub> (°C) | SOT353-1 (GW)    | SOT363 (GW) | SOT505-2 (DP) | SOT765-1 (DC) | SOT552-1 (DP) |
| 74AUP1T34-Q100  | Single dual supply translating buffer   | 1.1 - 3.6               | 1.1 - 3.6               | ± 1.9               | -40~125               | •                |             |               |               |               |
| 74AVC1T45-Q100  | Single dual-supply voltage level translating transceiver (3-state)                  | 0.8 - 3.6               | 0.8 - 3.6               | ± 12                | -40~125               |                  | •           |               |               |               |
| 74AVC2T45-Q100  | Dual-bit dual-supply voltage level translating transceiver (3-state)                | 0.8 - 3.6               | 0.8 - 3.6               | ± 12                | -40~125               |                  |             | •             | •             |               |
| 74AVCH1T45-Q100 | Single dual-supply voltage translating transceiver with bus hold (3-state)          | 0.8 - 3.6               | 0.8 - 3.6               | ± 12                | -40~125               |                  | •           |               |               |               |
| 74AXP1T57-Q100  | Dual-supply translating configurable multiple function gate, Schmitt-trigger inputs | 0.7 - 2.75              | 1.2 - 5.5               | ± 12                | -40~125               |                  |             |               | •             |               |
| 74AXP2T08-Q100  | Dual-supply 2-input AND gate  | 0.7 - 2.75              | 1.2 - 5.5               | ± 12                | -40~125               |                  |             |               |               | •             |
| 74LVC1T45-Q100  | Single dual-supply voltage level translating transceiver (3-state)                  | 1.2 - 5.5               | 1.2 - 5.5               | ± 24                | -40~125               |                  | •           |               |               |               |
| 74LVCH1T45-Q100 | Single dual-supply voltage translating transceiver with bus hold (3-state)          | 1.2 - 5.5               | 1.2 - 5.5               | ± 24                | -40~125               |                  | •           |               |               |               |
| 74LVC2T45-Q100  | Dual-bit dual-supply voltage level translating transceiver (3-state)                | 1.2 - 5.5               | 1.2 - 5.5               | ± 24                | -40~125               |                  |             |               | •             |               |
| 74LVCH2T45-Q100 | Dual-bit dual-supply voltage level translating transceiver with bus hold (3-state)  | 1.2 - 5.5               | 1.2 - 5.5               | ± 24                | -40~125               |                  |             |               | •             |               |

## Buffers/Inverters/Drivers

| Type number | Description   | V <sub>cc</sub> (V) | Logic switching levels | Output drive capability (mA) | Output Load CL (pF) | t <sub>pd</sub> (ns) | f <sub>max</sub> (MHz) | T <sub>amb</sub> (°C) |
|-------------|---|---------------------|------------------------|------------------------------|---------------------|----------------------|------------------------|-----------------------|
| 74ABT04     | Hex inverter  | 4.5 - 5.5           | TTL                    | -15 / 20                     | 50                  | 2.2                  | 100                    | -40~85                |
| 74ABT125    | Quad buffer/line driver (3-state)                                     | 4.5 - 5.5           | TTL                    | -32 / 64                     | 50                  | 3.1                  | 100                    | -40~85                |
| 74ABT126    | Quad buffer/line driver (3-state)                                     | 4.5 - 5.5           | TTL                    | -32 / 64                     | 50                  | 3.0                  | 100                    | -40~85                |
| 74ABT162244 | 16-bit buffer/line driver with 30 Ohm termination resistors (3-state) | 4.5 - 5.5           | TTL                    | -32 / 12                     | 50                  | 3.2                  | 100                    | -40~85                |
| 74ABT16240A | 16-bit inverter/line driver (3-state)                                 | 4.5 - 5.5           | TTL                    | -32 / 64                     | 50                  | 2.0                  | 150                    | -40~85                |
| 74ABT16244A | 16-bit buffer/line driver (3-state)                                   | 4.5 - 5.5           | TTL                    | -32 / 64                     | 50                  | 2.1                  | 150                    | -40~85                |
| 74ABT244    | Octal buffer/line driver (3-state)                                    | 4.5 - 5.5           | TTL                    | -32 / 64                     | 50                  | 2.9                  | 100                    | -40~85                |
| 74AHC04     | Hex inverter  | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.0                  | 60                     | -40~125               |
| 74AHC125    | Quad buffer/line driver (3-state)                                     | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.0                  | 60                     | -40~125               |
| 74AHC126    | Quad buffer/line driver (3-state)                                     | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.3                  | 60                     | -40~125               |
| 74AHC14     | Hex inverter; Schmitt-trigger   | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.2                  | 60                     | -40~125               |
| 74AHC1G04   | Single inverter   | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.1                  | 60                     | -40~125               |
| 74AHC1G125  | Single buffer/line driver (3-state)                                   | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.4                  | 60                     | -40~125               |
| 74AHC1G126  | Single buffer/line driver (3-state)                                   | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.4                  | 60                     | -40~125               |
| 74AHC1G14   | Single inverter; Schmitt-trigger                                      | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.2                  | 60                     | -40~125               |
| 74AHC1G17   | Single buffer with Schmitt-trigger inputs                             | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.2                  | 60                     | -40~125               |
| 74AHC1GU04  | Single inverter; unbuffered   | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 2.6                  | 60                     | -40~125               |
| 74AHC244    | Octal buffer/line driver (3-state)                                    | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.5                  | 60                     | -40~125               |
| 74AHC2G125  | Dual buffer/line driver (3-state)                                     | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.4                  | 60                     | -40~125               |
| 74AHC2G126  | Dual buffer/line driver (3-state)                                     | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.4                  | 60                     | -40~125               |
| 74AHC2G241  | Dual buffer/line driver (3-state)                                     | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.4                  | 60                     | -40~125               |
| 74AHC3G04   | Triple inverter   | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.1                  | 60                     | -40~125               |
| 74AHC3G14   | Triple inverter; Schmitt-trigger                                      | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.2                  | 60                     | -40~125               |
| 74AHC3GU04  | Triple inverter; unbuffered   | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 2.5                  | 60                     | -40~125               |
| 74AHC541    | Octal buffer/line driver (3-state)                                    | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.5                  | 60                     | -40~125               |
| 74AHC9541A  | Octal buffer/line driver; Schmitt-trigger (3-state)                   | 1.8 - 5.5           | CMOS                   | ±8                           | 15                  | 3.4                  | 60                     | -40~125               |
| 74AHCT04    | Hex inverter; TTL-enabled   | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.0                  | 60                     | -40~125               |
| 74AHCT04A   | Hex inverter; TTL-enabled   | 4.5 - 5.5           | TTL                    | ±8                           | 15                  | 3.1                  | 60                     | -40~125               |
| 74AHCT07A   | Hex buffer; open-drain; TTL-enabled                                   | 4.5 - 5.5           | TTL                    | ±8                           | 15                  | 4.0                  | 60                     | -40~125               |
| 74AHCT125   | Quad buffer/line driver; TTL-enabled (3-state)                        | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.0                  | 60                     | -40~125               |
| 74AHCT126   | Quad buffer/line driver; TTL-enabled (3-state)                        | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.0                  | 60                     | -40~125               |
| 74AHCT14    | Hex inverting; Schmitt-trigger; TTL-enabled                           | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.4                  | 60                     | -40~125               |
| 74AHCT14A   | Hex inverter; Schmitt-trigger; TTL-enabled                            | 4.5 - 5.5           | TTL                    | ±8                           | 15                  | 3.7                  | 60                     | -40~125               |
| 74AHCT17A   | Hex buffer; Schmitt-trigger; TTL-enabled                              | 4.5 - 5.5           | TTL                    | ±8                           | 15                  | 3.2                  | 60                     | -40~125               |
| 74AHCT1G04  | Single inverter; TTL-enabled  | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.4                  | 60                     | -40~125               |
| 74AHCT1G125 | Single buffer/line driver; TTL-enabled (3-state)                      | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.4                  | 60                     | -40~125               |
| 74AHCT1G126 | Single buffer/line driver; TTL-enabled (3-state)                      | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.4                  | 60                     | -40~125               |
| 74AHCT1G14  | Single inverter; Schmitt-trigger; TTL-enabled                         | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 4.1                  | 60                     | -40~125               |
| 74AHCT1G17  | Single buffer with Schmitt-trigger inputs; TTL-enabled                | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 4.1                  | 60                     | -40~125               |
| 74AHCT240   | Octal inverter/line driver; TTL-enabled (3-state)                     | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.0                  | 60                     | -40~125               |
| 74AHCT244   | Octal buffer/line driver; TTL-enabled (3-state)                       | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.5                  | 60                     | -40~125               |
| 74AHCT244A  | Octal buffer/line driver; TTL-enabled (3-state)                       | 4.5 - 5.5           | TTL                    | ±8                           | 15                  | 3.5                  | 60                     | -40~125               |
| 74AHCT2G125 | Dual buffer/line driver; TTL-enabled (3-state)                        | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.4                  | 60                     | -40~125               |

## Buffers/Inverters/Drivers

Types in **bold** represent new products

| Type number      | Description  | V <sub>cc</sub> (V) | Logic switching levels | Output drive capability (mA) | Output Load CL (pF) | t <sub>pd</sub> (ns) | f <sub>max</sub> (MHz) | T <sub>amb</sub> (°C) |
|------------------|--|---------------------|------------------------|------------------------------|---------------------|----------------------|------------------------|-----------------------|
| 74AHCT2G126      | Dual buffer/line driver; TTL-enabled (3-state)                                   | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.4                  | 60                     | -40~125               |
| 74AHCT2G241      | Dual buffer/line driver; TTL-enabled (3-state)                                   | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.4                  | 60                     | -40~125               |
| 74AHCT3G04       | Triple inverter; TTL-enabled   | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.0                  | 60                     | -40~125               |
| 74AHCT3G14       | Triple inverter; Schmitt-trigger; TTL-enabled                                    | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 4.1                  | 60                     | -40~125               |
| 74AHCT541        | Octal buffer/line driver; TTL-enabled (3-state)                                  | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.5                  | 60                     | -40~125               |
| 74AHCT541A       | Octal buffer/line driver; TTL-enabled (3-state)                                  | 4.5 - 5.5           | TTL                    | ±8                           | 15                  | 3.5                  | 60                     | -40~125               |
| 74AHCU04         | Hex inverter; unbuffered   | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 2.4                  | 60                     | -40~125               |
| 74AHCV07A        | Hex buffer; Schmitt-trigger; open-drain  | 1.8 - 5.5           | CMOS                   | 16                           | 15                  | 3.8                  | 60                     | -40~125               |
| 74AHCV14A        | Hex inverter; Schmitt-trigger  | 1.8 - 5.5           | CMOS                   | ±16                          | 15                  | 3.2                  | 60                     | -40~125               |
| 74AHCV17A        | Hex buffer; Schmitt-trigger  | 1.8 - 5.5           | CMOS                   | ±16                          | 15                  | 3.2                  | 60                     | -40~125               |
| 74AHCV244A       | Octal buffer/line driver; Schmitt-trigger (3-state)                              | 1.8 - 5.5           | CMOS                   | ±16                          | 15                  | 3.0                  | 60                     | -40~125               |
| 74AHCV541A       | Octal buffer/line driver; Schmitt-trigger (3-state)                              | 1.8 - 5.5           | CMOS                   | ±16                          | 15                  | 3.0                  | 60                     | -40~125               |
| 74ALVC04         | Hex inverter   | 1.65 - 3.6          | TTL                    | ±24                          | 30                  | 2.0                  | 150                    | -40~85                |
| 74ALVC125        | Quad buffer/line driver (3-state)  | 1.65 - 3.6          | TTL                    | ±24                          | 30                  | 1.8                  | 145                    | -40~85                |
| 74ALVC14         | Hex inverter; Schmitt-trigger  | 1.65 - 3.6          | TTL                    | ±24                          | 30                  | 2.4                  | 150                    | -40~85                |
| 74ALVC16244      | 16-bit buffer/line driver (3-state)  | 1.2 - 3.6           | TTL                    | ±24                          | 50                  | 1.9                  | 150                    | -40~85                |
| 74ALVC244        | Octal buffer/line driver (3-state)   | 1.65 - 3.6          | TTL                    | ±24                          | 30                  | 2.9                  | 130                    | -40~85                |
| 74ALVC541        | Octal buffer/line driver (3-state)   | 1.65 - 3.6          | TTL                    | ±24                          | 30                  | 2.3                  | 130                    | -40~85                |
| 74ALVCH162244    | 16-bit buffer/line driver with bus hold and 30 Ω termination resistors (3-state) | 2.3 - 3.6           | TTL                    | ±12                          | 30                  | 2.7                  | 150                    | -40~85                |
| 74ALVCH16244     | 16-bit buffer/line driver with bus hold (3-state)                                | 1.2 - 3.6           | TTL                    | ±24                          | 30                  | 1.9                  | 150                    | -40~85                |
| 74ALVCH162827    | 20-bit buffer/line driver with bus hold and 30 Ω termination resistors (3-state) | 2.3 - 3.6           | TTL                    | ±12                          | 30                  | 2.9                  | 150                    | -40~85                |
| 74ALVCH16825     | 18-bit buffer/line driver with bus hold (3-state)                                | 2.3 - 3.6           | TTL                    | ±24                          | 30                  | 2.0                  | 150                    | -40~85                |
| 74ALVCH16827     | 20-bit buffer/line driver with bus hold (3-state)                                | 2.3 - 3.6           | TTL                    | ±24                          | 30                  | 2.0                  | 150                    | -40~85                |
| 74ALVT16244      | 16-bit buffer/line driver with bus hold (3-state)                                | 2.3 - 3.6           | LVTTTL                 | -32 / 64                     | 50                  | 1.5                  | 200                    | -40~85                |
| 74ALVT162827     | 20-bit buffer/line driver with bus hold and 30 Ω termination resistors (3-state) | 2.3 - 3.6           | LVTTTL                 | ±12                          | 50                  | 2.2                  | 75                     | -40~85                |
| 74ALVT16827      | 20-bit buffer/line driver with bus hold (3-state)                                | 2.3 - 3.6           | LVTTTL                 | -32 / 64                     | 50                  | 1.3                  | 200                    | -40~85                |
| 74AUP1G04        | Single inverter  | 1.1 - 3.6           | CMOS                   | ±1.9                         | 30                  | 4.0                  | 70                     | -40~125               |
| 74AUP1G06        | Single inverter; open drain  | 1.1 - 3.6           | CMOS                   | 1.9                          | 30                  | 4.5                  | 70                     | -40~125               |
| 74AUP1G07        | Single buffer; open drain  | 1.1 - 3.6           | CMOS                   | 1.9                          | 30                  | 4.4                  | 70                     | -40~125               |
| 74AUP1G125       | Single buffer/line driver (3-state)  | 1.1 - 3.6           | CMOS                   | ±1.9                         | 30                  | 4.3                  | 70                     | -40~125               |
| 74AUP1G126       | Single buffer/line driver (3-state)  | 1.1 - 3.6           | CMOS                   | ±1.9                         | 30                  | 4.3                  | 70                     | -40~125               |
| 74AUP1G14        | Single inverter; Schmitt-trigger   | 1.1 - 3.6           | CMOS                   | ±1.9                         | 30                  | 4.7                  | 70                     | -40~125               |
| 74AUP1G16        | Single buffer  | 1.1 - 3.6           | CMOS                   | ±1.9                         | 30                  | 4.7                  | 70                     | -40~125               |
| 74AUP1G240       | Single inverter/line driver (3-state)  | 1.1 - 3.6           | CMOS                   | ±1.9                         | 30                  | 4.2                  | 70                     | -40~125               |
| 74AUP1G34        | Single buffer  | 1.1 - 3.6           | CMOS                   | ±1.9                         | 30                  | 3.9                  | 70                     | -40~125               |
| 74AUP1GU04       | Single inverter; unbuffered  | 1.1 - 3.6           | CMOS                   | ±1.9                         | 30                  | 2.3                  | 70                     | -40~125               |
| <b>74AUP1T04</b> | Single supply voltage-translating inverter                                       | 2.3 - 3.6           | CMOS                   | ±4                           | 15                  | 3.9                  | 70                     | -40~125               |
| <b>74AUP1T14</b> | Single supply voltage-translating inverter                                       | 2.3 - 3.6           | CMOS                   | ±4                           | 15                  | 3.6                  | 70                     | -40~125               |
| <b>74AUP1T17</b> | Single supply voltage-translating buffer   | 2.3 - 3.6           | CMOS                   | ±4                           | 15                  | 3.6                  | 70                     | -40~125               |
| <b>74AUP1T50</b> | Single supply voltage-translating buffer   | 2.3 - 3.6           | CMOS                   | ±4                           | 15                  | 3.6                  | 70                     | -40~125               |
| 74AUP2G04        | Dual inverter  | 1.1 - 3.6           | CMOS                   | ±1.9                         | 30                  | 4.0                  | 70                     | -40~125               |
| 74AUP2G06        | Dual inverter; open drain  | 1.1 - 3.6           | CMOS                   | 1.9                          | 30                  | 4.5                  | 70                     | -40~125               |
| 74AUP2G07        | Dual buffer; open drain  | 1.1 - 3.6           | CMOS                   | 1.9                          | 30                  | 4.4                  | 70                     | -40~125               |

## Buffers/Inverters/Drivers

Types in **bold** represent new products

| Type number        | Description   | V <sub>cc</sub> (V) | Logic switching levels | Output drive capability (mA) | Output Load CL (pF) | t <sub>pd</sub> (ns) | f <sub>max</sub> (MHz) | T <sub>amb</sub> (°C) |
|--------------------|---|---------------------|------------------------|------------------------------|---------------------|----------------------|------------------------|-----------------------|
| 74AUP2G125         | Dual buffer/line driver (3-state)                   | 1.1 - 3.6           | CMOS                   | +1.9                         | 30                  | 4.3                  | 70                     | -40~125               |
| 74AUP2G126         | Dual buffer/line driver (3-state)                   | 1.1 - 3.6           | CMOS                   | +1.9                         | 30                  | 4.3                  | 70                     | -40~125               |
| 74AUP2G14          | Dual inverter; Schmitt-trigger                      | 1.1 - 3.6           | CMOS                   | +1.9                         | 30                  | 4.7                  | 70                     | -40~125               |
| 74AUP2G16          | Dual buffer   | 1.1 - 3.6           | CMOS                   | +1.9                         | 30                  | 4.7                  | 70                     | -40~125               |
| 74AUP2G17          | Dual buffer; Schmitt-trigger                        | 1.1 - 3.6           | CMOS                   | +1.9                         | 30                  | 7.8                  | 70                     | -40~125               |
| 74AUP2G240         | Dual inverter/line driver (3-state)                 | 1.1 - 3.6           | CMOS                   | +1.9                         | 30                  | 4.2                  | 70                     | -40~125               |
| 74AUP2G241         | Dual buffer/line driver (3-state)                   | 1.1 - 3.6           | CMOS                   | + 1.9                        | 30                  | 4.3                  | 70                     | -40~125               |
| 74AUP2G34          | Dual buffer   | 1.1 - 3.6           | CMOS                   | +1.9                         | 30                  | 3.9                  | 70                     | -40~125               |
| 74AUP2GU04         | Dual inverter; unbuffered                           | 1.1 - 3.6           | CMOS                   | +1.9                         | 30                  | 2.3                  | 70                     | -40~125               |
| 74AUP3G04          | Triple inverter                                     | 1.1 - 3.6           | CMOS                   | +1.9                         | 30                  | 4.0                  | 70                     | -40~125               |
| 74AUP3G14          | Triple inverter; Schmitt-trigger                    | 1.1 - 3.6           | CMOS                   | +1.9                         | 30                  | 4.7                  | 70                     | -40~125               |
| 74AUP3G16          | Triple buffer                                       | 1.1 - 3.6           | CMOS                   | +1.9                         | 30                  | 4.0                  | 70                     | -40~125               |
| 74AUP3G17          | Triple buffer; Schmitt-trigger                      | 1.1 - 3.6           | CMOS                   | +1.9                         | 30                  | 4.7                  | 70                     | -40~125               |
| 74AVC16244         | 16-bit buffer/line driver (3-state)                 | 0.8 - 3.6           | CMOS/LVTTL             | -12                          | 30                  | 2.0                  | 200                    | -40~85                |
| <b>74AVC1T1004</b> | 1-to-4 translating fan-out buffer                   | 0.8 - 3.6           | CMOS/LVTTL             | ±12                          | 15                  | 4.9                  | 200                    | -40~125               |
| <b>74AVC4T3144</b> | 4-bit dual-supply buffer/level-translator (3-state) | 0.8 - 3.6           | CMOS/ LVTTTL           | ±12                          | 15                  | 3.5                  | 200                    | -40~125               |
| <b>74AVC9112</b>   | 1-to-4 fan-out buffer                               | 0.8 - 3.6           | CMOS/LVTTL             | ±12                          | 15                  | 4.0                  | 200                    | -40~125               |
| 74AVCH16244        | 16-bit buffer/line driver with bus hold (3-state)   | 0.8 - 3.6           | CMOS/LVTTL             | +12                          | 30                  | 2.0                  | 200                    | -40~85                |
| 74AXP1G04          | Single inverter                                     | 0.7 - 2.75          | CMOS                   | +4.5                         | 5                   | 2.6                  | 70                     | -40~85                |
| 74AXP1G06          | Single inverter; open drain                         | 0.7 - 2.75          | CMOS                   | 4.5                          | 5                   | 3.5                  | 70                     | -40~85                |
| 74AXP1G07          | Single buffer; open-drain                           | 0.7 - 2.75          | CMOS                   | 4.5                          | 5                   | 3.5                  | 70                     | -40~85                |
| 74AXP1G125         | Single buffer/line driver (3-state)                 | 0.7 - 2.75          | CMOS                   | +4.5                         | 5                   | 2.7                  | 70                     | -40~85                |
| 74AXP1G14          | Single inverter; Schmitt-trigger                    | 0.7 to 2.75         | CMOS                   | +4.5                         | 5                   | 2.9                  | 70                     | -40~85                |
| 74AXP1G17          | Single buffer; Schmitt-trigger                      | 0.7 to 2.75         | CMOS                   | +4.5                         | 5                   | 2.8                  | 70                     | -40~85                |
| 74AXP2G17          | Dual buffer; Schmitt-trigger                        | 0.7 to 2.75         | CMOS                   | +4.5                         | 5                   | 2.8                  | 70                     | -40~85                |
| 74AXP2G34          | Dual buffer   | 0.7 to 2.75         | CMOS                   | +4.5                         | 5                   | 2.5                  | 70                     | -40~85                |
| 74AXP2G3404        | Single buffer and Single inverter                   | 0.7 to 2.75         | CMOS                   | +4.5                         | 5                   | 2.5                  | 70                     | -40~85                |
| 74HC04             | Hex inverter  | 2.0 - 6.0           | CMOS                   | +5.2                         | 50                  | 7.0                  | 36                     | -40~125               |
| 74HC05             | Hex inverter; open drain                            | 2.0 - 6.0           | CMOS                   | 5.2                          | 50                  | 11                   | 36                     | -40~125               |
| 74HC125            | Quad buffer/line driver (3-state)                   | 2.0 - 6.0           | CMOS                   | +7.8                         | 50                  | 9.0                  | 36                     | -40~125               |
| 74HC126            | Quad buffer/line driver (3-state)                   | 2.0 - 6.0           | CMOS                   | +7.8                         | 50                  | 9.0                  | 36                     | -40~125               |
| 74HC14             | Hex inverter; Schmitt-trigger                       | 2.0 - 6.0           | CMOS                   | +5.2                         | 50                  | 12                   | 36                     | -40~125               |
| 74HC1G04           | Single inverter                                     | 2.0 - 6.0           | CMOS                   | +2.6                         | 50                  | 7.0                  | 36                     | -40~125               |
| 74HC1G125          | Single buffer/line driver (3-state)                 | 2.0 - 6.0           | CMOS                   | +2.6                         | 50                  | 9.0                  | 36                     | -40~125               |
| 74HC1G126          | Single buffer/line driver (3-state)                 | 2.0 - 6.0           | CMOS                   | +2.6                         | 50                  | 9.0                  | 36                     | -40~125               |
| 74HC1G14           | Single inverter; Schmitt-trigger                    | 2.0 - 6.0           | CMOS                   | +2.6                         | 50                  | 10                   | 36                     | -40~125               |
| 74HC1GU04          | Single inverter; unbuffered                         | 2.0 - 6.0           | CMOS                   | + 2.6                        | 50                  | 5.0                  | 36                     | -40~125               |
| 74HC240            | Octal inverter/line driver (3-state)                | 2.0 - 6.0           | CMOS                   | +7.8                         | 50                  | 9.0                  | 36                     | -40~125               |
| 74HC241            | Octal buffer/line driver (3-state)                  | 2.0 - 6.0           | CMOS                   | +7.8                         | 50                  | 7.0                  | 36                     | -40~125               |
| 74HC244            | Octal buffer/line driver (3-state)                  | 2.0 - 6.0           | CMOS                   | +7.8                         | 50                  | 9.0                  | 36                     | -40~125               |
| 74HC2G04           | Dual inverter                                       | 2.0 - 6.0           | CMOS                   | ±5.2                         | 50                  | 8.0                  | 36                     | -40~125               |
| 74HC2G125          | Dual buffer/line driver (3-state)                   | 2.0 - 6.0           | CMOS                   | ±5.2                         | 50                  | 10                   | 36                     | -40~125               |
| 74HC2G14           | Dual inverter; Schmitt-trigger                      | 2.0 - 6.0           | CMOS                   | ±5.2                         | 50                  | 16                   | 36                     | -40~125               |

## Asynchronous interface logic

### Buffers/Inverters/Drivers

| Type number | Description   | V <sub>cc</sub> (V) | Logic switching levels | Output drive capability (mA) | Output Load CL (pF) | t <sub>pd</sub> (ns) | f <sub>max</sub> (MHz) | T <sub>amb</sub> (°C) |
|-------------|---|---------------------|------------------------|------------------------------|---------------------|----------------------|------------------------|-----------------------|
| 74HC2G17    | Dual buffer; Schmitt-trigger                          | 2.0 - 6.0           | CMOS                   | ±5.2                         | 50                  | 12                   | 36                     | -40~125               |
| 74HC2G34    | Dual buffer   | 2.0 - 6.0           | CMOS                   | ±5.2                         | 50                  | 9.0                  | 36                     | -40~125               |
| 74HC2GU04   | Single inverter; unbuffered                           | 2.0 - 6.0           | CMOS                   | ±2.6                         | 50                  | 5.0                  | 36                     | -40~125               |
| 74HC365     | Hex buffer/line driver (3-state)                      | 2.0 - 6.0           | CMOS                   | ±7.8                         | 50                  | 9.0                  | 36                     | -40~125               |
| 74HC366     | Hex inverter/line driver (3-state)                    | 2.0 - 6.0           | CMOS                   | ±7.8                         | 50                  | 10                   | 36                     | -40~125               |
| 74HC367     | Hex buffer/line driver (3-state)                      | 2.0 - 6.0           | CMOS                   | ±7.8                         | 50                  | 8.0                  | 36                     | -40~125               |
| 74HC368     | Hex inverter/line driver (3-state)                    | 2.0 - 6.0           | CMOS                   | ±7.8                         | 50                  | 9.0                  | 36                     | -40~125               |
| 74HC3G04    | Triple inverter                                       | 2.0 - 6.0           | CMOS                   | ±5.2                         | 50                  | 8.0                  | 36                     | -40~125               |
| 74HC3G06    | Triple inverter; open drain                           | 2.0 - 6.0           | CMOS                   | 5.2                          | 50                  | 9.0                  | 36                     | -40~125               |
| 74HC3G07    | Triple buffer; open drain                             | 2.0 - 6.0           | CMOS                   | 5.2                          | 50                  | 9.0                  | 36                     | -40~125               |
| 74HC3G14    | Triple inverter; Schmitt-trigger                      | 2.0 - 6.0           | CMOS                   | ±5.2                         | 50                  | 16                   | 36                     | -40~125               |
| 74HC3G16    | Triple buffer   | 2.0 - 6.0           | CMOS                   | ±5.2                         | 50                  | 9.0                  | 36                     | -40~125               |
| 74HC3G34    | Triple buffer   | 2.0 - 6.0           | CMOS                   | ±5.2                         | 50                  | 9.0                  | 36                     | -40~125               |
| 74HC3GU04   | Triple inverter; unbuffered                           | 2.0 - 6.0           | CMOS                   | ±5.2                         | 50                  | 6.0                  | 36                     | -40~125               |
| 74HC540     | Octal inverter/line driver (3-state)                  | 2.0 - 6.0           | CMOS                   | ±7.8                         | 50                  | 9.0                  | 36                     | -40~125               |
| 74HC541     | Octal buffer/line driver (3-state)                    | 2.0 - 6.0           | CMOS                   | ±7.8                         | 50                  | 10                   | 36                     | -40~125               |
| 74HC7014    | Hex buffer; precision Schmitt-trigger                 | 2.0 - 6.0           | CMOS                   | ±5.2                         | 50                  | 27                   | 36                     | -40~125               |
| 74HC7540    | Octal inverter/line driver; Schmitt-trigger (3-State) | 2.0 - 6.0           | CMOS                   | ±7.8                         | 15                  | 11                   | 36                     | -40~125               |
| 74HC7541    | Octal buffer/line driver; Schmitt-trigger (3-State)   | 2.0 - 6.0           | CMOS                   | ±7.8                         | 15                  | 10                   | 36                     | -40~125               |
| 74HC9114    | 9-bit inverter; Schmitt-trigger; open-drain (3-state) | 2.0 - 6.0           | CMOS                   | 5.2                          | 15                  | 12                   | 36                     | -40~125               |
| 74HC9115    | 9-bit buffer; Schmitt-trigger; open-drain (3-state)   | 2.0 - 6.0           | CMOS                   | 5.2                          | 15                  | 12                   | 36                     | -40~125               |
| 74HCT04     | Hex inverter; TTL-enabled                             | 4.5 - 5.5           | TTL                    | ±4                           | 50                  | 8.0                  | 36                     | -40~125               |
| 74HCT125    | Quad buffer/line driver; TTL-enabled (3-state)        | 4.5 - 5.5           | TTL                    | ±6                           | 50                  | 12                   | 36                     | -40~125               |
| 74HCT126    | Quad buffer/line driver; TTL-enabled (3-state)        | 4.5 - 5.5           | TTL                    | ±6                           | 50                  | 11                   | 36                     | -40~125               |
| 74HCT14     | Hex inverter; Schmitt-trigger; TTL-enabled            | 4.5 - 5.5           | TTL                    | ±4                           | 50                  | 17                   | 36                     | -40~125               |
| 74HCT1G04   | Single inverter; TTL-enabled                          | 4.5 - 5.5           | TTL                    | ±2                           | 50                  | 8.0                  | 36                     | -40~125               |
| 74HCT1G125  | Single buffer/line driver; TTL-enabled (3-state)      | 4.5 - 5.5           | TTL                    | ±2                           | 50                  | 10                   | 36                     | -40~125               |
| 74HCT1G126  | Single buffer/line driver; TTL-enabled (3-state)      | 4.5 - 5.5           | TTL                    | ±2                           | 50                  | 10                   | 36                     | -40~125               |
| 74HCT1G14   | Single inverter; Schmitt-trigger; TTL-enabled         | 4.5 - 5.5           | TTL                    | ±2                           | 50                  | 15                   | 36                     | -40~125               |
| 74HCT240    | Octal inverter/line driver; TTL-enabled (3-state)     | 4.5 - 5.5           | TTL                    | ±6                           | 50                  | 9.0                  | 36                     | -40~125               |
| 74HCT241    | Octal buffer/line driver; TTL-enabled (3-state)       | 4.5 - 5.5           | TTL                    | ±6                           | 50                  | 11                   | 36                     | -40~125               |
| 74HCT244    | Octal buffer/line driver; TTL-enabled (3-state)       | 4.5 - 5.5           | TTL                    | ±6                           | 50                  | 11                   | 36                     | -40~125               |
| 74HCT2G04   | Dual inverter; TTL-enabled                            | 4.5 - 5.5           | TTL                    | ±4                           | 50                  | 10                   | 36                     | -40~125               |
| 74HCT2G125  | Dual buffer/line driver; TTL-enabled (3-state)        | 4.5 - 5.5           | TTL                    | ±4                           | 50                  | 12                   | 36                     | -40~125               |
| 74HCT2G14   | Dual inverter; Schmitt-trigger; TTL-enabled           | 4.5 to 5.5          | TTL                    | ±4                           | 50                  | 21                   | 36                     | -40~125               |
| 74HCT2G17   | Dual buffer; Schmitt-trigger; TTL-enabled             | 4.5 to 5.5          | TTL                    | ±4                           | 50                  | 21                   | 36                     | -40~125               |
| 74HCT2G34   | Dual buffer; TTL-enabled                              | 4.5 - 5.5           | TTL                    | ±4                           | 50                  | 10                   | 32                     | -40~125               |
| 74HCT365    | Hex buffer/line driver; TTL-enabled (3-state)         | 4.5 - 5.5           | TTL                    | ±6                           | 50                  | 11                   | 36                     | -40~125               |
| 74HCT366    | Hex inverter/line driver; TTL-enabled (3-state)       | 4.5 - 5.5           | TTL                    | ±6                           | 50                  | 11                   | 36                     | -40~125               |
| 74HCT367    | Hex buffer/line driver; TTL-enabled (3-state)         | 4.5 - 5.5           | TTL                    | ±6                           | 50                  | 11                   | 36                     | -40~125               |
| 74HCT368    | Hex inverter/line driver; TTL-enabled (3-state)       | 4.5 - 5.5           | TTL                    | ±6                           | 50                  | 11                   | 36                     | -40~125               |
| 74HCT3G04   | Triple inverter; TTL-enabled                          | 4.5 - 5.5           | TTL                    | ±4                           | 50                  | 10                   | 36                     | -40~125               |
| 74HCT3G06   | Triple inverter; open drain; TTL-enabled              | 4.5 - 5.5           | TTL                    | 4                            | 50                  | 9.0                  | 36                     | -40~125               |

## Buffers/Inverters/Drivers

Types in **bold** represent new products

| Type number      | Description   | V <sub>cc</sub> (V) | Logic switching levels | Output drive capability (mA) | Output Load CL (pF) | t <sub>pd</sub> (ns) | f <sub>max</sub> (MHz) | T <sub>amb</sub> (°C) |
|------------------|---|---------------------|------------------------|------------------------------|---------------------|----------------------|------------------------|-----------------------|
| 74HCT3G07        | Triple buffer; open drain; TTL-enabled                              | 4.5 - 5.5           | TTL                    | 4                            | 50                  | 9.0                  | 36                     | -40~125               |
| 74HCT3G14        | Triple inverter Schmitt-trigger; TTL-enabled                        | 4.5 - 5.5           | TTL                    | ±4                           | 50                  | 21                   | 36                     | -40~125               |
| 74HCT3G16        | Triple buffer; TTL-enabled  | 4.5 - 5.5           | TTL                    | ±4                           | 50                  | 10                   | 36                     | -40~125               |
| 74HCT3G34        | Triple buffer; TTL-enabled  | 4.5 - 5.5           | TTL                    | ±4                           | 50                  | 10                   | 36                     | -40~125               |
| 74HCT540         | Octal inverter/line driver; TTL-enabled (3-state)                   | 4.5 - 5.5           | TTL                    | ±6                           | 50                  | 11                   | 36                     | -40~125               |
| 74HCT541         | Octal buffer/line driver; TTL-enabled (3-state)                     | 4.5 - 5.5           | TTL                    | ±6                           | 50                  | 12                   | 36                     | -40~125               |
| 74HCT7540        | Octal inverter/line driver Schmitt-trigger; TTL-enabled (3-State)   | 4.5 - 5.5           | TTL                    | ±6                           | 15                  | 16                   | 36                     | -40~125               |
| 74HCT7541        | Octal buffer/line driver Schmitt-trigger; TTL-enabled (3-State)     | 4.5 - 5.5           | TTL                    | ±6                           | 15                  | 16                   | 36                     | -40~125               |
| 74HCT9114        | 9-bit inverter Schmitt-trigger; open-drain; TTL-enabled (3-state)   | 4.5 - 5.5           | TTL                    | 4                            | 15                  | 13                   | 36                     | -40~125               |
| 74HCU04          | Hex inverter; unbuffered  | 2.0 - 6.0           | CMOS                   | ±5.2                         | 50                  | 5.0                  | 36                     | -40~125               |
| 74LV04           | Hex inverter  | 1.0 - 5.5           | CMOS                   | ±12                          | 50                  | 6.0                  | 30                     | -40~125               |
| 74LV04AT         | Hex buffer  | 4.5 - 5.5           | TTL                    | ±12                          | 15                  | 3.3                  | 60                     | -40~125               |
| 74LV05A          | Hex inverter; open-drain  | 2.0 - 5.5           | CMOS                   | 12                           | 15                  | 2.9                  | 60                     | -40~125               |
| 74LV07A          | Hex buffer; open-drain  | 2.0 - 5.5           | CMOS                   | 16                           | 15                  | 3.6                  | 60                     | -40~125               |
| 74LV07AT         | Hex buffer; open-drain; TTL-enabled                                 | 4.5 - 5.5           | TTL                    | 16                           | 15                  | 3.5                  | 60                     | -40~125               |
| 74LV14           | Hex inverter; Schmitt-trigger                                       | 1.0 - 5.5           | TTL                    | ±12                          | 50                  | 13                   | 30                     | -40~125               |
| 74LV14A          | Hex inverter; Schmitt-trigger                                       | 2.0 - 5.5           | CMOS                   | ±12                          | 15                  | 3.4                  | 60                     | -40~125               |
| 74LV17A          | Hex buffer; Schmitt-trigger   | 2.0 - 5.5           | CMOS                   | ±12                          | 15                  | 3.4                  | 60                     | -40~125               |
| <b>74LV1T04</b>  | Single supply translating inverter                                  | 1.6 - 5.5           | CMOS                   | ±8                           | 15                  | 3.1                  | 60                     | -40~125               |
| <b>74LV1T34</b>  | Single supply translating buffer                                    | 1.6 - 5.5           | CMOS                   | ±8                           | 15                  | 3.1                  | 60                     | -40~125               |
| <b>74LV1T125</b> | Single supply translating buffer / line driver (3-state)            | 1.6 - 5.5           | CMOS                   | ±8                           | 15                  | 3.2                  | 60                     | -40~125               |
| <b>74LV1T126</b> | Single supply translating buffer / line driver (3-state)            | 1.6 - 5.5           | CMOS                   | ±8                           | 15                  | 3.2                  | 60                     | -40~125               |
| 74LV244          | Octal buffer/line driver (3-state)                                  | 1.0 - 5.5           | CMOS                   | ±16                          | 50                  | 8.0                  | 30                     | -40~125               |
| 74LV244A         | Octal buffer/line driver (3-state)                                  | 2.0 - 5.5           | CMOS                   | ±16                          | 15                  | 2.9                  | 60                     | -40~125               |
| 74LV244AT        | Octal buffer/line driver; TTL-enabled (3-state)                     | 4.5 - 5.5           | TTL                    | ±16                          | 15                  | 2.8                  | 60                     | -40~125               |
| 74LV365          | Hex buffer/line driver (3-state)                                    | 1.0 - 3.6           | CMOS                   | ±8                           | 50                  | 9.0                  | 30                     | -40~125               |
| 74LV540A         | Octal buffer/line driver (3-state); inverting                       | 1.65 - 5.5          | CMOS/LVTTL             | ±16                          | 15                  | 3.1                  | 60                     | -40~125               |
| 74LV541A         | Octal buffer/line driver (3-state)                                  | 2.0 - 5.5           | CMOS                   | ±16                          | 15                  | 2.9                  | 60                     | -40~125               |
| 74LV541AT        | Octal buffer/line driver; TTL-enabled (3-state)                     | 4.5 - 5.5           | TTL                    | ±16                          | 15                  | 2.8                  | 60                     | -40~125               |
| 74LVC04A         | Hex inverter  | 1.65 - 5.5          | CMOS/LVTTL             | ±24                          | 50                  | 2.0                  | 175                    | -40~125               |
| 74LVC06A         | Hex inverter; open drain  | 1.65 - 5.5          | CMOS/LVTTL             | 32                           | 50                  | 2.2                  | 175                    | -40~125               |
| 74LVC07A         | Hex buffer; open drain  | 1.65 - 5.5          | CMOS/LVTTL             | 32                           | 50                  | 2.2                  | 175                    | -40~125               |
| 74LVC125A        | Quad buffer/line driver (3-state)                                   | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 50                  | 2.4                  | 175                    | -40~125               |
| 74LVC126A        | Quad buffer/line driver (3-state)                                   | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 50                  | 2.4                  | 175                    | -40~125               |
| 74LVC14A         | Hex inverter; Schmitt-trigger                                       | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 50                  | 3.2                  | 175                    | -40~125               |
| 74LVC162244A     | 16-bit buffer/line driver with 30 Ω termination resistors (3-state) | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 50                  | 2.9                  | 175                    | -40~125               |
| 74LVC16240A      | 16-bit inverter/line driver (3-state)                               | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 50                  | 2.7                  | 175                    | -40~125               |
| 74LVC16241A      | 16-bit buffer/line driver (3-state)                                 | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 50                  | 2.9                  | 175                    | -40~125               |
| 74LVC16244A      | 16-bit buffer/line driver (3-state)                                 | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 50                  | 3.0                  | 175                    | -40~125               |
| 74LVC1G04        | Single inverter   | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 2.0                  | 175                    | -40~125               |
| 74LVC1G06        | Single inverter; open drain   | 1.65 - 5.5          | CMOS/LVTTL             | 32                           | 50                  | 2.3                  | 175                    | -40~125               |
| 74LVC1G07        | Single buffer; open drain   | 1.65 - 5.5          | CMOS/LVTTL             | 32                           | 50                  | 2.2                  | 175                    | -40~125               |
| 74LVC1G125       | Single buffer/line driver; TTL-enabled (3-state)                    | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 2.1                  | 175                    | -40~125               |

## Buffers/Inverters/Drivers

| Type number   | Description  | V <sub>cc</sub> (V) | Logic switching levels | Output drive capability (mA) | Output Load CL (pF) | t <sub>pd</sub> (ns) | f <sub>max</sub> (MHz) | T <sub>amb</sub> (°C) |
|---------------|--|---------------------|------------------------|------------------------------|---------------------|----------------------|------------------------|-----------------------|
| 74LVC1G126    | Single buffer/line driver; TTL-enabled (3-state)                                 | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 2.0                  | 175                    | -40~125               |
| 74LVC1G14     | Single inverter; Schmitt-trigger   | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 3.0                  | 175                    | -40~125               |
| 74LVC1G16     | Single buffer  | 1.65 - 5.5          | CMOS/LVTTL             | ±24                          | 50                  | 2.0                  | 175                    | -40~125               |
| 74LVC1G17     | Single buffer; Schmitt-trigger   | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 3.0                  | 175                    | -40~125               |
| 74LVC1G34     | Single buffer  | 1.65 - 5.5          | CMOS/LVTTL             | ±24                          | 50                  | 2.0                  | 175                    | -40~125               |
| 74LVC1GU04    | Single inverter; unbuffered  | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 1.6                  | 175                    | -40~125               |
| 74LVC2244A    | Octal buffer/line driver with 30 Ω termination resistors (3-state)               | 1.2 - 3.6           | CMOS/LVTTL             | ±12                          | 50                  | 3.1                  | 175                    | -40~125               |
| 74LVC240A     | Octal inverter/line driver (3-state)   | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 50                  | 3.5                  | 175                    | -40~125               |
| 74LVC244A     | Octal buffer/line driver (3-state)   | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 50                  | 2.8                  | 175                    | -40~125               |
| 74LVC2G04     | Dual inverter  | 1.65 - 5.5          | CMOS/LVTTL             | ±24                          | 50                  | 2.7                  | 175                    | -40~125               |
| 74LVC2G06     | Dual inverter; open drain  | 1.65 - 5.5          | CMOS/LVTTL             | 32                           | 50                  | 2.3                  | 175                    | -40~125               |
| 74LVC2G07     | Dual buffer; open drain  | 1.65 - 5.5          | CMOS/LVTTL             | 32                           | 50                  | 2.6                  | 175                    | -40~125               |
| 74LVC2G125    | Dual buffer/line driver; TTL-enabled (3-state)                                   | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 2.3                  | 175                    | -40~125               |
| 74LVC2G126    | Dual buffer/line driver; TTL-enabled (3-state)                                   | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 2.4                  | 175                    | -40~125               |
| 74LVC2G14     | Dual inverter; Schmitt-trigger   | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 3.9                  | 175                    | -40~125               |
| 74LVC2G16     | Dual buffer  | 1.65 - 5.5          | CMOS/LVTTL             | ±24                          | 50                  | 2.0                  | 175                    | -40~125               |
| 74LVC2G17     | Dual buffer; Schmitt-trigger   | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 3.6                  | 175                    | -40~125               |
| 74LVC2G240    | Dual inverter/line driver (3-state)  | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 2.5                  | 175                    | -40~125               |
| 74LVC2G241    | Dual buffer/line driver (3-state)  | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 2.6                  | 175                    | -40~125               |
| 74LVC2G34     | Dual buffer  | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 2.2                  | 175                    | -40~125               |
| 74LVC2GU04    | Dual inverter; unbuffered  | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 2.3                  | 175                    | -40~125               |
| 74LVC3G04     | Triple inverter  | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 2.7                  | 175                    | -40~125               |
| 74LVC3G06     | Triple inverter; open drain  | 1.65 - 5.5          | CMOS/LVTTL             | 32                           | 50                  | 2.0                  | 175                    | -40~125               |
| 74LVC3G07     | Triple buffer; open drain  | 1.65 - 5.5          | CMOS/LVTTL             | 32                           | 50                  | 2.1                  | 175                    | -40~125               |
| 74LVC3G14     | Triple inverter; Schmitt-trigger   | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 3.2                  | 175                    | -40~125               |
| 74LVC3G16     | Triple buffer  | 1.65 - 5.5          | CMOS/LVTTL             | ±24                          | 50                  | 2.0                  | 175                    | -40~125               |
| 74LVC3G17     | Triple buffer; Schmitt-trigger   | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 3.6                  | 175                    | -40~125               |
| 74LVC3G34     | Triple buffer  | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 2.2                  | 175                    | -40~125               |
| 74LVC3GU04    | Triple inverter; unbuffered  | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                  | 2.3                  | 175                    | -40~125               |
| 74LVC541A     | Octal buffer/line driver (3-state)   | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 50                  | 3.3                  | 175                    | -40~125               |
| 74LVC827A     | 10-bit buffer/line driver (3-state)  | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 50                  | 4.0                  | 175                    | -40~125               |
| 74LVCH162244A | 16-bit buffer/line driver with bus hold and 30 Ω termination resistors (3-state) | 1.2 - 3.6           | CMOS/LVTTL             | ±12                          | 50                  | 2.9                  | 175                    | -40~125               |
| 74LVCH16244A  | 16-bit buffer/line driver with bus hold (3-state)                                | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 50                  | 3.0                  | 175                    | -40~125               |
| 74LVCH16541A  | 16-bit buffer/line driver with bus hold (3-state)                                | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 50                  | 2.7                  | 175                    | -40~125               |
| 74LVCH244A    | Octal buffer/line driver with bus hold (3-state)                                 | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 50                  | 2.8                  | 175                    | -40~125               |
| 74LVCU04A     | Hex inverter; unbuffered   | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 50                  | 2.0                  | 175                    | -40~125               |
| 74LVT04       | Hex inverter   | 2.7 - 3.6           | TTL                    | -20 / 32                     | 50                  | 2.6                  | 150                    | -40~85                |
| 74LVT125      | Quad buffer/line driver with bus hold (3-state)                                  | 2.7 - 3.6           | TTL                    | -32 / 64                     | 50                  | 2.9                  | 150                    | -40~85                |
| 74LVT126      | Quad buffer/line driver with bus hold (3-state)                                  | 2.7 - 3.6           | TTL                    | -32 / 64                     | 50                  | 2.4                  | 150                    | -40~85                |
| 74LVT14       | Hex inverter; Schmitt-trigger  | 2.7 - 3.6           | TTL                    | -32 / 64                     | 50                  | 3.8                  | 150                    | -40~85                |
| 74LVT162240A  | 16-bit inverter/line driver with bus hold and 30 Ω termination (3-state)         | 2.7 - 3.6           | TTL                    | ±12                          | 50                  | 2.6                  | 150                    | -40~85                |
| 74LVT162244B  | 16-bit buffer/line driver with bus hold and 30 Ω termination resistors (3-state) | 2.7 - 3.6           | TTL                    | ±12                          | 50                  | 2.8                  | 150                    | -40~85                |
| 74LVT16240A   | 16-bit inverter/line driver with bus hold (3-state)                              | 2.7 - 3.6           | TTL                    | -32 / 64                     | 50                  | 2.0                  | 150                    | -40~85                |



## Buffers/Inverters/Drivers

| Type number  | Description   | V <sub>cc</sub> (V) | Logic switching levels | Output drive capability (mA) | Output Load CL (pF) | t <sub>pd</sub> (ns) | f <sub>max</sub> (MHz) | T <sub>amb</sub> (°C) |
|--------------|---|---------------------|------------------------|------------------------------|---------------------|----------------------|------------------------|-----------------------|
| 74LVT16244B  | 16-bit buffer/line driver with bus hold (3-state)                               | 2.7 - 3.6           | TTL                    | -32 / 64                     | 50                  | 1.8                  | 150                    | -40~85                |
| 74LVT2241    | Octal buffer/line driver with bus hold and 30 Ω termination resistors (3-state) | 2.7 - 3.6           | TTL                    | ±12                          | 50                  | 3.3                  | 150                    | -40~85                |
| 74LVT2244    | Octal buffer/line driver with bus hold and 30 Ω termination resistors (3-state) | 2.7 - 3.6           | TTL                    | ±12                          | 50                  | 2.9                  | 150                    | -40~85                |
| 74LVT240     | Octal inverter/line driver with bus hold (3-state)                              | 2.7 - 3.6           | TTL                    | -32 / 64                     | 50                  | 2.5                  | 150                    | -40~85                |
| 74LVT241     | Octal buffer/line driver with bus hold (3-state)                                | 2.7 - 3.6           | TTL                    | -32 / 64                     | 50                  | 2.8                  | 150                    | -40~85                |
| 74LVT244A    | Octal buffer/line driver with bus hold (3-state)                                | 2.7 - 3.6           | TTL                    | -32 / 64                     | 50                  | 2.6                  | 150                    | -40~85                |
| 74LVT244B    | Octal buffer/line driver with bus hold (3-state)                                | 2.7 - 3.6           | TTL                    | -32 / 64                     | 50                  | 2.0                  | 150                    | -40~85                |
| 74LVTH125    | Quad buffer/line driver with bus hold (3-state)                                 | 2.7 - 3.6           | TTL                    | -32 / 64                     | 50                  | 2.9                  | 150                    | -40~85                |
| 74LVTH16244B | 16-bit buffer/line driver with bus hold (3-state)                               | 2.7 - 3.6           | TTL                    | -32 / 64                     | 50                  | 1.8                  | 150                    | -40~85                |
| 74LVTH244A   | Octal buffer/line driver with bus hold (3-state)                                | 2.7 - 3.6           | TTL                    | -32 / 64                     | 50                  | 2.6                  | 150                    | -40~85                |
| 74LVTH244B   | Octal buffer/line driver with bus hold (3-state)                                | 2.7 - 3.6           | TTL                    | -32 / 64                     | 50                  | 2.0                  | 150                    | -40~85                |
| 74LVTN16244B | 16-bit buffer/line driver (3-state)   | 2.7 - 3.6           | TTL                    | -32 / 64                     | 50                  | 1.8                  | 150                    | -40~85                |
| 74VHC125     | Quad buffer/line driver (3-state)   | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.0                  | 60                     | -40~125               |
| 74VHC126     | Quad buffer/line driver (3-state)   | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.3                  | 60                     | -40~125               |
| 74VHC14      | Hex inverter; Schmitt-trigger   | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.2                  | 60                     | -40~125               |
| 74VHC244     | Octal inverter/line driver (3-state)  | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.5                  | 60                     | -40~125               |
| 74VHC541     | Octal buffer/line driver (3-state)  | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.5                  | 60                     | -40~125               |
| 74VHCT125    | Quad buffer/line driver; TTL-enabled (3-state)                                  | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.0                  | 60                     | -40~125               |
| 74VHCT126    | Quad buffer/line driver; TTL-enabled (3-state)                                  | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.0                  | 60                     | -40~125               |
| 74VHCT14     | Hex inverter; Schmitt-trigger; TTL-enabled                                      | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 4.1                  | 60                     | -40~125               |
| 74VHCT244    | Octal inverter/line driver; TTL-enabled (3-state)                               | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 5.0                  | 60                     | -40~125               |
| 74VHCT541    | Octal buffer/line driver; TTL-enabled (3-state)                                 | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.5                  | 60                     | -40~125               |
| HEF40098B    | Hex inverter  | 3.0 - 15.0          | CMOS                   | -10 / 20                     | 50                  | 25                   | 10                     | -40~125               |
| HEF40244B    | Octal buffer/line driver (3-state)  | 3.0 - 15.0          | CMOS                   | -62 / 45                     | 50                  | 30                   | 10                     | -40~125               |
| HEF4049B     | Hex inverter/line driver  | 3.0 - 15.0          | CMOS                   | -3 / 20                      | 50                  | 20                   | 10                     | -40~125               |
| HEF4050B     | Hex buffer/line driver  | 3.0 - 15.0          | CMOS                   | -3 / 20                      | 50                  | 40                   | 10                     | -40~125               |
| HEF4069UB    | Hex inverter; unbuffered  | 3.0 - 15.0          | CMOS                   | ±3.4                         | 50                  | 15                   | 10                     | -40~125               |
| PDI1284P11   | Printer parallel interface transceiver/buffer                                   | 3.0 - 3.6           | LVTTTL                 | ±14                          | 50                  | 13.9                 |                        | 0~70                  |
| XC7SET04     | Single inverter; TTL-enabled  | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.5                  | 60                     | -40~125               |
| XC7SET125    | Single buffer/line driver; TTL-enabled (3-state)                                | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 3.4                  | 60                     | -40~125               |
| XC7SET14     | Single inverter; Schmitt-trigger; TTL-enabled                                   | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 4.1                  | 60                     | -40~125               |
| XC7SH04      | Single inverter   | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.5                  | 60                     | -40~125               |
| XC7SH125     | Single buffer/line driver (3-state)   | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.4                  | 60                     | -40~125               |
| XC7SH14      | Single inverter; Schmitt-trigger  | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.2                  | 60                     | -40~125               |
| XC7SHU04     | Single inverter; unbuffered   | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.5                  | 60                     | -40~125               |
| XC7WH126     | Dual buffer/line driver (3-state)   | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.4                  | 60                     | -40~125               |
| XC7WH14      | Triple inverter; Schmitt-trigger  | 2.0 - 5.5           | CMOS                   | ±8                           | 50                  | 3.2                  | 60                     | -40~125               |
| XC7WT14      | Triple inverter; Schmitt-trigger; TTL-enabled                                   | 4.5 - 5.5           | TTL                    | ±8                           | 50                  | 4.1                  | 60                     | -40~125               |

## Schmitt-triggers

| Type number | Description   | V <sub>CC</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (pF) | f <sub>max</sub> (MHz) | Number of bits | T <sub>amb</sub> (°C) |
|-------------|---|---------------------|------------------------|------------------------------|----------------------|---------------------------------|------------------------|----------------|-----------------------|
| 74AHC132    | Quad 2-input NAND gate Schmitt-trigger              | 2.0 - 5.5           | CMOS                   | ±8                           | 3.3                  | 50                              | 60                     | 4              | -40~125               |
| 74AHC14     | Hex inverter Schmitt-trigger                        | 2.0 - 5.5           | CMOS                   | ±8                           | 3.2                  | 50                              | 60                     | 6              | -40~125               |
| 74AHC1G14   | Single inverter Schmitt-trigger                     | 2.0 - 5.5           | CMOS                   | ±8                           | 3.2                  | 50                              | 60                     | 1              | -40~125               |
| 74AHC1G17   | Single buffer Schmitt-trigger                       | 2.0 - 5.5           | CMOS                   | ±8                           | 3.2                  | 50                              | 60                     | 1              | -40~125               |
| 74AHC3G14   | Triple inverter Schmitt-trigger                     | 2.0 - 5.5           | CMOS                   | ±8                           | 3.2                  | 50                              | 60                     | 3              | -40~125               |
| 74AHCT132   | Quad 2-input NAND gate Schmitt-trigger; TTL-enabled | 4.5 - 5.5           | TTL                    | ±8                           | 3.5                  | 50                              | 60                     | 4              | -40~125               |
| 74AHCT14    | Hex inverter Schmitt-trigger; TTL-enabled           | 4.5 - 5.5           | TTL                    | ±8                           | 4.0                  | 50                              | 60                     | 6              | -40~125               |
| 74AHCT17A   | Hex buffer Schmitt-trigger                          | 4.5 - 5.5           | TTL                    | ±8                           | 3.2                  | 50                              | 60                     | 8              | -40~125               |
| 74AHCT1G14  | Single inverter Schmitt-trigger; TTL-enabled        | 4.5 - 5.5           | TTL                    | ±8                           | 4.1                  | 50                              | 60                     | 1              | -40~125               |
| 74AHCT1G17  | Single buffer Schmitt-trigger; TTL-enabled          | 4.5 - 5.5           | TTL                    | ±8                           | 4.1                  | 50                              | 60                     | 1              | -40~125               |
| 74AHCT3G14  | Triple inverter Schmitt-trigger; TTL-enabled        | 4.5 - 5.5           | TTL                    | ±8                           | 4.1                  | 50                              | 60                     | 3              | -40~125               |
| 74AHCV07A   | Hex buffer Schmitt-trigger; open-drain              | 1.8 - 5.5           | CMOS                   | 16                           | 3.8                  | 15                              | 60                     | 6              | -40~125               |
| 74AHCV14A   | Hex inverter Schmitt-trigger                        | 1.8 - 5.5           | CMOS                   | ±16                          | 3.2                  | 15                              | 60                     | 6              | -40~125               |
| 74AHCV17A   | Hex buffer Schmitt-trigger                          | 1.8 - 5.5           | CMOS                   | ±16                          | 3.2                  | 15                              | 60                     | 6              | -40~125               |
| 74AHCV244A  | Octal buffer/line driver Schmitt-trigger (3-state)  | 1.8 - 5.5           | CMOS                   | ±16                          | 3.0                  | 15                              | 60                     | 8              | -40~125               |
| 74AHCV245A  | Octal transceiver Schmitt-trigger (3-state)         | 1.8 - 5.5           | CMOS                   | ±16                          | 3.2                  | 15                              | 60                     | 8              | -40~125               |
| 74AHCV541A  | Octal buffer/line driver Schmitt-trigger (3-state)  | 1.8 - 5.5           | CMOS                   | ±16                          | 3.0                  | 15                              | 60                     | 8              | -40~125               |
| 74ALVC14    | Hex inverter Schmitt-trigger                        | 1.65 - 3.6          | TTL                    | ±24                          | 2.4                  | 50                              | 150                    | 6              | -40~85                |
| 74AUP1G132  | Single 2-input NAND gate Schmitt-trigger            | 1.1 - 3.6           | CMOS                   | ±1.9                         | 10.0                 | 30                              | 70                     | 1              | -40~125               |
| 74AUP1G14   | Single inverter Schmitt-trigger                     | 1.1 - 3.6           | CMOS                   | ±1.9                         | 4.7                  | 30                              | 70                     | 1              | -40~125               |
| 74AUP1G17   | Single buffer Schmitt-trigger                       | 1.1 - 3.6           | CMOS                   | ±1.9                         | 7.8                  | 30                              | 70                     | 1              | -40~125               |
| 74AUP1G57   | Configurable gate; Schmitt-trigger                  | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.7                  | 30                              | 70                     | 1              | -40~125               |
| 74AUP1G58   | Configurable gate; Schmitt-trigger                  | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.7                  | 30                              | 70                     | 1              | -40~125               |
| 74AUP1G97   | Configurable gate; Schmitt-trigger                  | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.7                  | 30                              | 70                     | 1              | -40~125               |
| 74AUP1G98   | Configurable gate; Schmitt-trigger                  | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.9                  | 30                              | 70                     | 1              | -40~125               |
| 74AUP2G132  | Dual 2-input NAND gate Schmitt-trigger              | 1.1 - 3.6           | CMOS                   | ±1.9                         | 10                   | 30                              | 70                     | 2              | -40~125               |
| 74AUP2G14   | Dual inverter Schmitt-trigger                       | 1.1 - 3.6           | CMOS                   | ±1.9                         | 4.7                  | 30                              | 70                     | 2              | -40~125               |
| 74AUP2G17   | Dual buffer Schmitt-trigger                         | 1.1 - 3.6           | CMOS                   | ±1.9                         | 7.8                  | 30                              | 70                     | 2              | -40~125               |
| 74AUP2G58   | Dual configurable gate; Schmitt-trigger             | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.7                  | 30                              | 70                     | 2              | -40~125               |
| 74AUP2G97   | Dual configurable gate; Schmitt-trigger             | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.7                  | 30                              | 70                     | 2              | -40~125               |
| 74AUP2G98   | Dual configurable gate; Schmitt-trigger             | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.9                  | 30                              | 70                     | 2              | -40~125               |

## Schmitt-triggers

| Type number | Description  | V <sub>CC</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (pF) | f <sub>max</sub> (MHz) | Number of bits | T <sub>amb</sub> (°C) |
|-------------|--|---------------------|------------------------|------------------------------|----------------------|---------------------------------|------------------------|----------------|-----------------------|
| 74AUP3G14   | Triple inverter Schmitt-trigger  | 1.1 - 3.6           | CMOS                   | ±1.9                         | 2.4                  | 30                              | 70                     | 3              | -40~125               |
| 74AUP3G17   | Triple Schmitt-trigger   | 1.1 - 3.6           | CMOS                   | ±1.9                         | 2.4                  | 30                              | 70                     | 3              | -40~125               |
| 74AXP1G14   | Single inverter Schmitt-trigger  | 0.7 - 2.75          | CMOS                   | ±4.5                         | 2.9                  | 5                               | 70                     | 1              | -40~85                |
| 74AXP1G17   | Single buffer Schmitt-trigger  | 0.7 - 2.75          | CMOS                   | ±4.5                         | 2.8                  | 5                               | 70                     | 1              | -40~85                |
| 74AXP1G57   | Configurable gate; Schmitt-trigger                                       | 0.7 - 2.75          | CMOS                   | ±4.5                         | 4.6                  | 5                               | 70                     | 1              | -40~85                |
| 74AXP1G58   | Configurable gate; Schmitt-trigger                                       | 0.7 - 2.75          | CMOS                   | ±4.5                         | 4.5                  | 5                               | 70                     | 1              | -40~85                |
| 74AXP1G97   | Configurable gate; Schmitt-trigger                                       | 0.7 - 2.75          | CMOS                   | ±4.5                         | 4.5                  | 5                               | 70                     | 1              | -40~85                |
| 74AXP1G98   | Configurable gate; Schmitt-trigger                                       | 0.7 - 2.75          | CMOS                   | ±4.5                         | 4.5                  | 5                               | 70                     | 1              | -40~85                |
| 74AXP1T14   | Dual-supply Schmitt-trigger inverter                                     | 0.75 - 2.75         | CMOS                   | ±12                          | 4.9                  | 5                               | 45                     | 1              | -40~125               |
| 74AXP1T57   | Single dual-supply translating configurable gate; Schmitt-trigger inputs | 0.75 - 2.75         | CMOS                   | ±12                          | 4.8                  | 5                               | 45                     | 1              | -40~125               |
| 74AXP2G14   | Dual inverter Schmitt-trigger  | 0.7 - 2.75          | CMOS                   | ±4.5                         | 2.9                  | 5                               | 70                     | 2              | -40~85                |
| 74AXP2G17   | Dual buffer Schmitt-trigger  | 0.7 - 2.75          | CMOS                   | ±4.5                         | 2.8                  | 5                               | 70                     | 1              | -40~85                |
| 74HC132     | Quad 2-input NAND gate Schmitt-trigger                                   | 2.0 - 6.0           | CMOS                   | ±5.2                         | 11                   | 50                              | 36                     | 4              | -40~125               |
| 74HC14      | Hex inverter Schmitt-trigger   | 2.0 - 6.0           | CMOS                   | ±5.2                         | 12                   | 50                              | 36                     | 6              | -40~125               |
| 74HC1G14    | Single inverter Schmitt-trigger  | 2.0 - 6.0           | CMOS                   | ±2.6                         | 10                   | 50                              | 36                     | 1              | -40~125               |
| 74HC2G14    | Dual inverter Schmitt-trigger  | 2.0 - 6.0           | CMOS                   | ±5.2                         | 16                   | 50                              | 36                     | 2              | -40~125               |
| 74HC2G17    | Dual buffer Schmitt-trigger  | 2.0 - 6.0           | CMOS                   | ±5.2                         | 12                   | 50                              | 36                     | 2              | -40~125               |
| 74HC3G14    | Triple inverter Schmitt-trigger  | 2.0 - 6.0           | CMOS                   | ±5.2                         | 16                   | 50                              | 36                     | 3              | -40~125               |
| 74HC7014    | Hex buffer precision Schmitt-trigger                                     | 2.0 - 6.0           | CMOS                   | ±5.2                         | 27                   | 50                              | 36                     | 6              | -40~125               |
| 74HC7540    | Octal inverter/line driver Schmitt-trigger (3-state)                     | 2.0 - 6.0           | CMOS                   | ±7.8                         | 11                   | 50                              | 36                     | 8              | -40~125               |
| 74HC7541    | Octal buffer/line driver Schmitt-trigger (3-state)                       | 2.0 - 6.0           | CMOS                   | ±7.8                         | 11                   | 50                              | 36                     | 8              | -40~125               |
| 74HC9114    | 9-bit inverter Schmitt-trigger; open drain (3-state)                     | 2.0 - 6.0           | CMOS                   | 5.2                          | 12                   | 50                              | 36                     | 9              | -40~125               |
| 74HC9115    | 9-bit buffer Schmitt-trigger; open drain (3-state)                       | 2.0 - 6.0           | CMOS                   | 5.2                          | 12                   | 50                              | 36                     | 9              | -40~125               |
| 74HCT132    | Quad 2-input NAND gate Schmitt-trigger; TTL-enabled                      | 4.5 - 5.5           | TTL                    | ±4                           | 17                   | 50                              | 36                     | 4              | -40~125               |
| 74HCT14     | Hex inverter Schmitt-trigger; TTL-enabled                                | 4.5 - 5.5           | TTL                    | ±4                           | 17                   | 50                              | 36                     | 6              | -40~125               |
| 74HCT1G14   | Single inverter Schmitt-trigger; TTL-enabled                             | 4.5 - 5.5           | TTL                    | ±2.0                         | 15                   | 50                              | 36                     | 1              | -40~125               |
| 74HCT2G14   | Dual inverter Schmitt-trigger; TTL-enabled                               | 4.5 - 5.5           | TTL                    | ±4.0                         | 21                   | 50                              | 36                     | 2              | -40~125               |
| 74HCT2G17   | Dual buffer Schmitt-trigger; TTL-enabled                                 | 4.5 - 5.5           | TTL                    | ±4.0                         | 21                   | 50                              | 36                     | 2              | -40~125               |
| 74HCT3G14   | Triple inverter Schmitt-trigger; TTL-enabled                             | 4.5 - 5.5           | TTL                    | ±4.0                         | 21                   | 50                              | 36                     | 3              | -40~125               |
| 74HCT7540   | Octal inverter/line driver Schmitt-trigger; TTL-enabled (3-state)        | 4.5 - 5.5           | TTL                    | ±6                           | 16                   | 50                              | 36                     | 8              | -40~125               |
| 74HCT7541   | Octal buffer/line driver Schmitt-trigger; TTL-enabled (3-state)          | 4.5 - 5.5           | TTL                    | ±6                           | 16                   | 50                              | 36                     | 8              | -40~125               |

## Schmitt-triggers

| Type number | Description   | V <sub>CC</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (pF) | f <sub>max</sub> (MHz) | Number of bits | T <sub>amb</sub> (°C) |
|-------------|---|---------------------|------------------------|------------------------------|----------------------|---------------------------------|------------------------|----------------|-----------------------|
| 74HCT9114   | 9-bit inverter Schmitt-trigger; open drain; TTL-enabled (3-state) | 4.5 - 5.5           | TTL                    | 4                            | 13                   | 50                              | 36                     | 9              | -40~125               |
| 74LV132     | Quad 2-input NAND gate Schmitt-trigger                            | 1.0 - 5.5           | TTL                    | ±12                          | 10                   | 50                              | 30                     | 4              | -40~125               |
| 74LV14      | Hex inverter Schmitt-trigger                                      | 1.0 - 5.5           | TTL                    | ±12                          | 13                   | 50                              | 30                     | 6              | -40~125               |
| 74LV14A     | Hex inverter Schmitt-trigger                                      | 2.0 - 5.5           | CMOS                   | ±12                          | 3.4                  | 15                              | 60                     | 6              | -40~125               |
| 74LVC132A   | Quad 2-input NAND gate Schmitt-trigger                            | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 3.4                  | 50                              | 175                    | 4              | -40~125               |
| 74LVC14A    | Hex inverter Schmitt-trigger                                      | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 3.2                  | 50                              | 175                    | 6              | -40~125               |
| 74LVC1G14   | Single inverter Schmitt-trigger                                   | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 3.0                  | 50                              | 175                    | 1              | -40~125               |
| 74LVC1G17   | Single buffer Schmitt-trigger                                     | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 3.0                  | 50                              | 175                    | 1              | -40~125               |
| 74LVC1G57   | Configurable gate; Schmitt-trigger                                | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 6.3                  | 50                              | 150                    | 1              | -40~125               |
| 74LVC1G58   | Configurable gate; Schmitt-trigger                                | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 6.3                  | 50                              | 150                    | 1              | -40~125               |
| 74LVC1G97   | Configurable gate; Schmitt-trigger                                | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 6.3                  | 50                              | 150                    | 1              | -40~125               |
| 74LVC1G98   | Configurable gate; Schmitt-trigger                                | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 6.3                  | 50                              | 150                    | 1              | -40~125               |
| 74LVC1G99   | Configurable gate; Schmitt-trigger                                | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 8.4                  | 50                              | 150                    | 1              | -40~125               |
| 74LVC2G14   | Dual inverter Schmitt-trigger                                     | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 3.9                  | 50                              | 175                    | 2              | -40~125               |
| 74LVC2G17   | Dual buffer Schmitt-trigger                                       | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 3.6                  | 50                              | 175                    | 2              | -40~125               |
| 74LVC3G14   | Triple inverter Schmitt-trigger                                   | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 3.2                  | 50                              | 175                    | 3              | -40~125               |
| 74LVC3G17   | Triple buffer Schmitt-trigger                                     | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 3.6                  | 50                              | 175                    | 3              | -40~125               |
| 74LVT14     | Hex inverter Schmitt-trigger                                      | 2.7 - 3.6           | TTL                    | ±32                          | 3.8                  | 50                              | 150                    | 6              | -40~125               |
| 74VHC14     | Hex inverter Schmitt-trigger                                      | 2.0 - 5.5           | CMOS                   | ±8                           | 3.2                  | 50                              | 60                     | 6              | -40~125               |
| 74VHCT14    | Hex inverter Schmitt-trigger; TTL-enabled                         | 4.5 - 5.5           | TTL                    | ±8                           | 4.1                  | 50                              | 60                     | 6              | -40~125               |
| HEF40106B   | Hex inverter Schmitt-trigger                                      | 3.0 - 15            | CMOS                   | ±2.4                         | 30                   | 50                              | 10                     | 6              | -40~85                |
| HEF4093B    | Quad 2-input NAND gate Schmitt-trigger                            | 3.0 - 15            | CMOS                   | ±2.4                         | 30                   | 50                              | 10                     | 4              | -40~125               |
| XC7SET14    | Single inverter Schmitt-trigger; TTL-enabled                      | 4.5 - 5.5           | TTL                    | ±8                           | 4.1                  | 50                              | 60                     | 1              | -40~125               |
| XC7SH14     | Single inverter Schmitt-trigger                                   | 2.0 - 5.5           | CMOS                   | ±8                           | 3.2                  | 50                              | 60                     | 1              | -40~125               |
| XC7WH14     | Triple inverter Schmitt-trigger                                   | 2.0 - 5.5           | CMOS                   | ±8                           | 3.2                  | 50                              | 60                     | 3              | -40~125               |
| XC7WT14     | Triple inverter Schmitt-trigger; TTL-enabled                      | 4.5 - 5.5           | TTL                    | ±8                           | 4.1                  | 50                              | 60                     | 3              | -40~125               |

## Transceivers

Types in **bold** represent new products

| Type number       | Description  | V <sub>CC</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Number of bits | f <sub>max</sub> (MHz) | T <sub>vj</sub> (°C) |
|-------------------|--|---------------------|------------------------|------------------------------|----------------------|----------------|------------------------|----------------------|
| 74ABT162245A      | 16-bit transceiver with 30 ohm termination resistors (3-state)   | 4.5 - 5.5           | TTL                    | -32 / 12                     | 3.0                  | 16             | 100                    | -40~85               |
| 74ABT16245B       | 16-bit transceiver (3-state)   | 4.5 - 5.5           | TTL                    | -32 / 64                     | 2.3                  | 16             | 150                    | -40~85               |
| 74ABT245          | Octal transceiver (3-state)  | 4.5 - 5.5           | TTL                    | -32 / 64                     | 2.9                  | 8              | 100                    | -40~85               |
| 74ABTH162245A     | 16-bit transceiver with bus hold and 30 ohm termination resistors (3-state)                                    | 4.5 - 5.5           | TTL                    | -32 / 12                     | 3.0                  | 16             | 80                     | -40~85               |
| 74AHC245          | Octal transceiver (3-state)  | 2.0 - 5.5           | CMOS                   | ±8                           | 3.5                  | 8              | 60                     | -40~125              |
| 74AHCT245         | Octal transceiver; TTL-enabled (3-state)   | 4.5 - 5.5           | TTL                    | ±8                           | 5.0                  | 8              | 60                     | -40~125              |
| 74AHCT245A        | Octal transceiver; TTL-enabled (3-state)   | 4.5 - 5.5           | TTL                    | ±8                           | 3.0                  | 8              | 60                     | -40~125              |
| 74AHCV245A        | Octal transceiver; Schmitt-trigger (3-state)   | 1.8 - 5.5           | CMOS                   | ±16                          | 3.2                  | 8              | 60                     | -40~125              |
| 74ALVC16245       | 16-bit transceiver (3-state)   | 1.65 - 3.6          | TTL                    | ±24                          | 1.9                  | 16             | 150                    | -40~85               |
| 74ALVC245         | Octal transceiver (3-state)  | 1.65 - 3.6          | TTL                    | ±24                          | 2.3                  | 8              | 130                    | -40~85               |
| 74ALVCH162245     | 16-bit transceiver with bus hold and 30 Ω termination resistors (3-state)                                      | 1.65 - 3.6          | TTL                    | ±12                          | 2.4                  | 16             | 150                    | -40~85               |
| 74ALVCH16245      | 16-bit transceiver with bus hold (3-state)   | 1.65 - 3.6          | TTL                    | ±24                          | 1.9                  | 16             | 150                    | -40~85               |
| 74ALVCH162601     | 18-bit universal bus transceiver with bus hold and 30 Ω termination resistors; positive-edge trigger (3-state) | 1.65 - 3.6          | TTL                    | ±12                          | 3.1                  | 18             | 150                    | -40~85               |
| 74ALVCH16500      | 18-bit universal bus transceiver with bus hold; negative edge trigger (3-state)                                | 1.65 - 3.6          | TTL                    | ±24                          | 2.9                  | 18             | 150                    | -40~85               |
| 74ALVCH16501      | 18-bit universal bus transceiver with bus hold; positive edge trigger (3-state)                                | 1.65 - 3.6          | TTL                    | ±24                          | 2.8                  | 18             | 150                    | -40~85               |
| 74ALVCH16543      | 16-bit registered transceiver with bus hold (3-state)  | 1.65 - 3.6          | TTL                    | ±24                          | 3.8                  | 16             | 150                    | -40~85               |
| 74ALVCH16600      | 18-bit universal bus transceiver with bus hold; negative edge trigger (3-state)                                | 1.65 - 3.6          | TTL                    | ±24                          | 2.8                  | 18             | 150                    | -40~85               |
| 74ALVCH16601      | 18-bit universal bus transceiver with bus hold; positive edge trigger (3-state)                                | 1.65 - 3.6          | TTL                    | ±24                          | 2.8                  | 18             | 150                    | -40~85               |
| 74ALVCH16646      | 16-bit registered transceiver with bus hold (3-state)  | 1.65 - 3.6          | TTL                    | ±24                          | 2.6                  | 16             | 150                    | -40~85               |
| 74ALVCH16652      | 16-bit registered transceiver with bus hold (3-state)  | 1.65 - 3.6          | TTL                    | ±24                          | 2.6                  | 16             | 150                    | -40~85               |
| 74ALVCH16952      | 16-bit registered transceiver with bus hold (3-state)  | 1.65 - 3.6          | TTL                    | ±24                          | 3.2                  | 16             | 150                    | -40~85               |
| 74ALVT162245      | 16-bit transceiver with bus hold and 30 Ω termination resistors (3-state)                                      | 2.3 - 3.6           | TTL                    | ±12                          | 2.3                  | 16             | 75                     | -40~85               |
| 74AVC16245        | 16-bit transceiver (3-state)   | 1.2 - 3.6           | CMOS                   | ±12                          | 2.0                  | 16             | 200                    | -40~85               |
| <b>74AVC4T774</b> | 4-bit dual supply translating transceiver (3-state)  | 0.8 - 3.6           | CMOS/<br>LVTTTL        | ±12                          | 3.5                  | 4              | 200                    | -40~125              |
| 74AVCH16245       | 16-bit transceiver with bus hold (3-state)   | 1.2 - 3.6           | CMOS                   | ±12                          | 2.0                  | 16             | 200                    | -40~85               |
| 74HC245           | Octal transceiver (3-state)  | 2.0 - 6.0           | CMOS                   | ±7.8                         | 7.0                  | 8              | 36                     | -40~125              |
| 74HCT245          | Octal transceiver; TTL-enabled (3-state)   | 4.5 - 5.5           | TTL                    | ±6                           | 10                   | 8              | 36                     | -40~125              |
| 74LV245           | Octal transceiver (3-state)  | 1.0 - 5.5           | TTL                    | ±16                          | 7.0                  | 8              | 30                     | -40~125              |
| 74LV245A          | Octal transceiver (3-state)  | 2.0 - 5.5           | CMOS                   | ±16                          | 3                    | 8              | 60                     | -40~125              |
| 74LV245AT         | Octal transceiver; TTL-enabled (3-state)   | 4.5 - 5.5           | TTL                    | ±16                          | 3                    | 8              | 60                     | -40~125              |
| 74LVC162245A      | 16-bit transceiver with 30 Ω termination resistors (3-state)   | 1.2 - 3.6           | CMOS/LVTTTL            | ±12                          | 3.3                  | 16             | 175                    | -40~125              |
| 74LVC16245A       | 16-bit transceiver (3-state)   | 1.2 - 3.6           | CMOS/LVTTTL            | ±24                          | 3.0                  | 16             | 175                    | -40~125              |
| 74LVC2245A        | Octal transceiver with 30 Ω termination resistors (3-state)  | 1.2 - 3.6           | CMOS/LVTTTL            | ±12                          | 3.3                  | 8              | 175                    | -40~125              |
| 74LVC245A         | Octal transceiver (3-state)  | 1.2 - 3.6           | CMOS/LVTTTL            | ±24                          | 2.9                  | 8              | 175                    | -40~125              |
| 74LVC32245A       | 32-bit transceiver (3-state)   | 1.2 - 3.6           | CMOS/LVTTTL            | ±24                          | 2.2                  | 32             | 175                    | -40~125              |
| 74LVCH162245A     | 16-bit transceiver with bus hold and 30 Ω termination resistors (3-state)                                      | 1.2 - 3.6           | CMOS/LVTTTL            | ±12                          | 3.3                  | 16             | 175                    | -40~125              |
| 74LVCH16245A      | 16-bit transceiver with bus hold (3-state)   | 1.2 - 3.6           | CMOS/LVTTTL            | ±24                          | 3.0                  | 16             | 175                    | -40~125              |
| 74LVCH245A        | Octal transceiver with bus hold (3-state)  | 1.2 - 3.6           | CMOS/LVTTTL            | ±24                          | 2.9                  | 8              | 175                    | -40~125              |

## Transceivers

| Type number  | Description   | V <sub>CC</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Number of bits | f <sub>max</sub> (MHz) | T <sub>v</sub> (°C) |
|--------------|---|---------------------|------------------------|------------------------------|----------------------|----------------|------------------------|---------------------|
| 74LVT162245B | 16-bit transceiver with bus hold and 30 Ω termination resistors (3-state) | 2.7 - 3.6           | TTL                    | ±12                          | 2.5                  | 16             | 150                    | -40~85              |
| 74LVT16245B  | 16-bit transceiver with bus hold (3-state)                                | 2.7 - 3.6           | TTL                    | -32 / 64                     | 1.9                  | 16             | 150                    | -40~85              |
| 74LVT16543A  | 16-bit registered transceiver with bus hold (3-state)                     | 2.7 - 3.6           | TTL                    | -32 / 64                     | 2.2                  | 16             | 150                    | -40~85              |
| 74LVT16543A  | 16-bit registered transceiver with bus hold (3-state)                     | 2.7 - 3.6           | TTL                    | -32 / 64                     | 2                    | 16             | 150                    | -40~85              |
| 74LVT2245    | Octal transceiver with bus hold and 30 Ω termination resistors (3-state)  | 2.7 - 3.6           | TTL                    | ±12                          | 3.2                  | 8              | 150                    | -40~85              |
| 74LVT245     | Octal transceiver (3-state)   | 2.7 - 3.6           | TTL                    | -32 / 64                     | 2.4                  | 8              | 150                    | -40~85              |
| 74LVT245B    | Octal transceiver (3-state)   | 2.7 - 3.6           | TTL                    | -32 / 64                     | 2                    | 8              | 150                    | -40~85              |
| 74LVT640     | Octal transceiver with bus hold; inverting (3-state)                      | 2.7 - 3.6           | TTL                    | -32 / 64                     | 2.4                  | 8              | 150                    | -40~85              |
| 74LVTH16245B | 16-bit transceiver with bus hold (3-state)                                | 2.7 - 3.6           | TTL                    | -32 / 64                     | 1.9                  | 16             | 150                    | -40~85              |
| 74LVTH2245   | Octal transceiver with bus hold and 30 Ω termination resistors (3-state)  | 2.7 - 3.6           | TTL                    | ±12                          | 3.2                  | 8              | 150                    | -40~85              |
| 74LVTN16245B | 16-bit transceiver (3-state)  | 2.7 - 3.6           | TTL                    | -32 / 64                     | 1.9                  | 16             | 150                    | -40~85              |
| 74VHC245     | Octal transceiver (3-state)   | 2.0 - 5.5           | CMOS                   | ±8                           | 3.5                  | 8              | 60                     | -40~125             |
| 74VHCT245    | Octal transceiver; TTL-enabled (3-state)                                  | 4.5 - 5.5           | TTL                    | ±8                           | 5.0                  | 8              | 60                     | -40~125             |

## Voltage translators (level-shifters)

Types in **bold** represent new products

| Type number      | Description  | V <sub>CC(A)</sub> (V) | V <sub>CC(B)</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (pF) | Number of bits | T <sub>amb</sub> (°C) |
|------------------|--|------------------------|------------------------|------------------------|------------------------------|----------------------|---------------------------------|----------------|-----------------------|
| 74ALVC164245     | 16-bit dual-supply voltage-translating transceiver (3-state) | 1.5 - 5.5              | 1.5 - 3.6              | CMOS/LVTTL             | ±24                          | 2.9                  | 50                              | 16             | -40~85                |
| <b>74AUP1T00</b> | Single supply 2-input voltage-translating NAND gate          | 2.3 - 3.6              | n.a.                   | CMOS                   | ±4                           | 3.7                  | 15                              | 1              | -40~125               |
| <b>74AUP1T02</b> | Single supply 2-input voltage-translating NOR gate           | 2.3 - 3.6              | n.a.                   | CMOS                   | ±4                           | 3.6                  | 15                              | 1              | -40~125               |
| <b>74AUP1T04</b> | Single supply voltage-translating inverter                   | 2.3 - 3.6              | n.a.                   | CMOS                   | ±4                           | 3.6                  | 15                              | 1              | -40~125               |
| <b>74AUP1T08</b> | Single supply 2-input voltage-translating AND gate           | 2.3 - 3.6              | n.a.                   | CMOS                   | ±4                           | 3.6                  | 15                              | 1              | -40~125               |
| <b>74AUP1T14</b> | Single supply voltage-translating inverter                   | 2.3 - 3.6              | n.a.                   | CMOS                   | ±4                           | 3.6                  | 15                              | 1              | -40~125               |
| <b>74AUP1T17</b> | Single supply voltage-translating buffer                     | 2.3 - 3.6              | n.a.                   | CMOS                   | ±4                           | 3.6                  | 15                              | 1              | -40~125               |
| <b>74AUP1T32</b> | Single supply 2-input voltage-translating OR gate            | 2.3 - 3.6              | n.a.                   | CMOS                   | ±4                           | 3.6                  | 15                              | 1              | -40~125               |
| 74AUP1T34        | Single dual-supply translating buffer                        | 1.1 - 3.6              | 1.1 - 3.6              | CMOS                   | ±4                           | 3.9                  | 15                              | 1              | -40~125               |
| 74AUP1T45        | Single dual-supply voltage-translating transceiver (3-state) | 1.1 - 3.6              | 1.1 - 3.6              | CMOS                   | ±4                           | 4.5                  | 15                              | 1              | -40~125               |
| <b>74AUP1T50</b> | Single supply voltage-translating buffer                     | 2.3 - 3.6              | n.a.                   | CMOS                   | ±4                           | 8.7                  | 15                              | 1              | -40~125               |
| 74AUP1T57        | Configurable gate with voltage-level translation             | 2.3 - 3.6              | n.a.                   | CMOS                   | ±4                           | 3.8                  | 15                              | 1              | -40~125               |
| 74AUP1T58        | Configurable gate with voltage-level translation             | 2.3 - 3.6              | n.a.                   | CMOS                   | ±4                           | 3.8                  | 15                              | 1              | -40~125               |
| <b>74AUP1T86</b> | Single supply 2-input voltage-translating XOR gate           | 2.3 - 3.6              | n.a.                   | CMOS                   | ±4                           | 8.7                  | 15                              | 1              | 0                     |
| <b>74AUP1T87</b> | Single supply 2-input voltage-translating XNOR gate          | 2.3 - 3.6              | n.a.                   | CMOS                   | ±4                           | 8.7                  | 15                              | 1              | -40~125               |
| 74AUP1T97        | Configurable gate with voltage-level translation             | 2.3 - 3.6              | n.a.                   | CMOS                   | ±4                           | 3.8                  | 15                              | 1              | -40~125               |
| 74AUP1T98        | Configurable gate with voltage-level translation             | 2.3 - 3.6              | n.a.                   | CMOS                   | ±4                           | 3.8                  | 15                              | 1              | -40~125               |

## Voltage translators (level-shifters)

Types in **bold** represent new products

| Type number        | Description  | V <sub>CC(A)</sub> (V) | V <sub>CC(B)</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (pF) | Number of bits | T <sub>amb</sub> (°C) |
|--------------------|--|------------------------|------------------------|------------------------|------------------------------|----------------------|---------------------------------|----------------|-----------------------|
| 74AUP2T1326        | Dual supply buffer/line driver; 3-state                                      | 1.1 - 3.6              | 1.1 - 3.6              | CMOS                   | ±4                           | 3.8                  | 15                              | 2              | -40~125               |
| <b>74AVC1T1004</b> | 1-to-4 fan-out buffer  | 0.8 - 3.6              | n.a.                   | CMOS/<br>LVTTTL        | ±12                          | 4.9                  | 15                              | 1              | -40~125               |
| <b>74AVC1T8128</b> | Single dual-supply translating 2-input NOR with enable                       | 0.8 - 3.6              | n.a.                   | CMOS/<br>LVTTTL        | ±12                          | 2.4                  | 15                              | 1              | -40~125               |
| <b>74AVC1T8832</b> | Single dual-supply translating 2-input OR with strobe                        | 0.8 - 3.6              | n.a.                   | CMOS/<br>LVTTTL        | ±12                          | 2.4                  | 15                              | 1              | -40~125               |
| 74AVC16T245        | 16-bit dual-supply voltage-translating transceiver (3-state)                 | 0.8 - 3.6              | 0.8 - 3.6              | CMOS/<br>LVTTTL        | ±12                          | 2.1                  | 30                              | 16             | -40~125               |
| 74AVC1T1022        | 1-to-4 fan out buffer  | 0.8 - 3.6              | 0.8 - 3.6              | CMOS/<br>LVTTTL        | ±12                          | 2.1                  | 30                              | 1              | -40~125               |
| 74AVC1T45          | Single dual-supply voltage-translating transceiver (3-state)                 | 0.8 - 3.6              | 0.8 - 3.6              | CMOS/<br>LVTTTL        | ±12                          | 2.1                  | 30                              | 1              | -40~125               |
| 74AVC20T245        | 20-bit dual-supply voltage-translating transceiver (3-state)                 | 0.8 - 3.6              | 0.8 - 3.6              | CMOS/<br>LVTTTL        | ±12                          | 3.5                  | 30                              | 20             | -40~125               |
| 74AVC2T245         | 2-bit dual-supply voltage-translating transceiver                            | 0.8 - 3.6              | 0.8 - 3.6              | CMOS/<br>LVTTTL        | ±12                          | 2.1                  | 30                              | 2              | -40~125               |
| 74AVC2T45          | Dual-bit dual-supply voltage-translating transceiver (3-state)               | 0.8 - 3.6              | 0.8 - 3.6              | CMOS/<br>LVTTTL        | ±12                          | 2.1                  | 30                              | 2              | -40~125               |
| 74AVC32T245        | 32-bit dual-supply voltage-translating transceiver (3-state)                 | 0.8 - 3.6              | 0.8 - 3.6              | CMOS/<br>LVTTTL        | ±12                          | 2.1                  | 30                              | 32             | -40~125               |
| 74AVC4T245         | 4-bit dual-supply voltage-translating transceiver (3-state)                  | 0.8 - 3.6              | 0.8 - 3.6              | CMOS/<br>LVTTTL        | ±12                          | 2.1                  | 30                              | 4              | -40~125               |
| <b>74AVC4T774</b>  | 4-bit dual supply translating transceiver (3-state)                          | 0.8 - 3.6              | 0.8 - 3.6              | CMOS/<br>LVTTTL        | ±12                          | 3.5                  | 15                              | 4              | -40~125               |
| <b>74AVC4T3144</b> | 4-bit dual-supply buffer/level-translator (3-state)                          | 0.8 - 3.6              | 0.8 - 3.6              | CMOS/<br>LVTTTL        | ±12                          | 3.5                  | 15                              | 4              | -40~125               |
| 74AVC4TD245        | 4-bit dual-supply voltage-translating transceiver (3-state)                  | 0.8 - 3.6              | 0.8 - 3.6              | CMOS/<br>LVTTTL        | ±12                          | 2.1                  | 30                              | 4              | -40~125               |
| 74AVC8T245         | 8-bit dual-supply voltage-translating transceiver (3-state)                  | 0.8 - 3.6              | 0.8 - 3.6              | CMOS/<br>LVTTTL        | ±12                          | 2.1                  | 30                              | 8              | -40~125               |
| 74AVCH16T245       | 16-bit dual-supply voltage-translating transceiver with bus hold (3-state)   | 0.8 - 3.6              | 0.8 - 3.6              | CMOS/<br>LVTTTL        | ±12                          | 2.1                  | 30                              | 16             | -40~125               |
| 74AVCH1T45         | Single dual-supply voltage-translating transceiver with bus hold (3-state)   | 0.8 - 3.6              | 0.8 - 3.6              | CMOS/<br>LVTTTL        | ±12                          | 2.1                  | 30                              | 1              | -40~125               |
| 74AVCH20T245       | 20-bit dual-supply voltage-translating transceiver with bus hold (3-state)   | 0.8 - 3.6              | 0.8 - 3.6              | CMOS/<br>LVTTTL        | ±12                          | 3.5                  | 30                              | 20             | -40~125               |
| 74AVCH2T45         | Dual-bit dual-supply voltage-translating transceiver with bus hold (3-state) | 0.8 - 3.6              | 0.8 - 3.6              | CMOS/<br>LVTTTL        | ±12                          | 2.1                  | 30                              | 2              | -40~125               |
| 74AVCH4T245        | 4-bit dual-supply voltage-translating transceiver with bus hold (3-state)    | 0.8 - 3.6              | 0.8 - 3.6              | CMOS/<br>LVTTTL        | ±12                          | 2.1                  | 30                              | 4              | -40~125               |
| 74AVCH8T245        | 8-bit dual-supply voltage-translating transceiver with bus hold (3-state)    | 0.8 - 3.6              | 0.8 - 3.6              | CMOS                   | ±12                          | 2.1                  | 15                              | 8              | -40~125               |
| 74AXP1T125         | Dual-supply buffer/line driver (3-state)                                     | 0.7 - 2.75             | 1.2 - 5.5              | CMOS                   | ±12                          | 4.8                  | 50                              | 1              | -40~125               |
| 74AXP1T14          | Dual-supply schmitt-trigger inverter   | 0.7 - 2.75             | 1.2 - 5.5              | CMOS                   | ±12                          | 3.4                  | 50                              | 1              | -40~125               |
| 74AXP1T32          | Dual-supply 2-input or gate  | 0.7 - 2.75             | 1.2 - 5.5              | CMOS                   | ±12                          | 3.4                  | 50                              | 1              | -40~125               |
| 74AXP1T34          | Single dual-supply voltage-translating buffer                                | 0.7 - 2.75             | 1.2 - 5.5              | CMOS                   | ±12                          | 3.4                  | 50                              | 1              | -40~125               |
| 74AXP1T57          | Schmitt-trigger inputs, Dual supply configurable multiple function gate      | 0.7 - 2.75             | 1.2 - 5.5              | CMOS                   | ±12                          | 4.8                  | 50                              | 1              | -40~85                |
| 74AXP2T08          | Dual-supply 2-input AND gate   | 0.7 - 2.75             | 1.2 - 5.5              | CMOS                   | ±12                          | 4.8                  | 50                              | 1              | -40~125               |
| 74AXP2T3407        | Dual-supply single buffer and single buffer with open drain                  | 0.7 - 2.75             | 1.2 - 5.5              | CMOS                   | ±12                          | 4.8                  | 50                              | 1              | -40~125               |
| 74HC4049           | Hex inverter with 15 V-tolerant inputs                                       | 2.0 - 6.0              | n.a.                   | CMOS                   | ±5.2                         | 8.0                  | 50                              | 6              | -40~125               |
| 74HC4050           | Hex buffer with 15 V-tolerant inputs   | 2.0 - 6.0              | n.a.                   | CMOS                   | ±5.2                         | 7.0                  | 50                              | 6              | -40~125               |
| <b>74LV1T00</b>    | Single supply 2-input translating NAND gate                                  | 1.6 - 5.5              | n.a.                   | CMOS                   | ±8                           | 3.1                  | 15                              | 1              | -40~125               |
| <b>74LV1T02</b>    | Single supply 2-input translating NOR gate                                   | 1.6 - 5.5              | n.a.                   | CMOS                   | ±8                           | 3.1                  | 15                              | 1              | -40~125               |
| <b>74LV1T04</b>    | Single supply translating inverter   | 1.6 - 5.5              | n.a.                   | CMOS                   | ±8                           | 4.1                  | 15                              | 1              | -40~125               |

## Voltage translators (level-shifters)

Types in **bold** represent new products

| Type number      | Description  | V <sub>CC(A)</sub> (V) | V <sub>CC(B)</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (pF) | Number of bits | T <sub>amb</sub> (°C) |
|------------------|--|------------------------|------------------------|------------------------|------------------------------|----------------------|---------------------------------|----------------|-----------------------|
| <b>74LV1T08</b>  | Single supply 2-input translating AND gate                                     | 1.6 - 5.5              | n.a.                   | CMOS                   | ±8                           | 4.1                  | 15                              | 1              | -40~125               |
| <b>74LV1T32</b>  | Single supply 2-input translating OR gate                                      | 1.6 - 5.5              | n.a.                   | CMOS                   | ±8                           | 3.2                  | 15                              | 1              | -40~125               |
| <b>74LV1T34</b>  | Single supply translating buffer   | 1.6 - 5.5              | n.a.                   | CMOS                   | ±8                           | 3.1                  | 15                              | 1              | -40~125               |
| <b>74LV1T86</b>  | Single supply 2-input translating XOR gate                                     | 1.6 - 5.5              | n.a.                   | CMOS                   | ±8                           | 3.4                  | 15                              | 1              | -40~125               |
| <b>74LV1T87</b>  | Single supply 2-input translating XNOR gate                                    | 1.6 - 5.5              | n.a.                   | CMOS                   | ±8                           | 3.4                  | 15                              | 1              | -40~125               |
| <b>74LV1T125</b> | Single supply translating buffer / line driver (3-state)                       | 1.6 - 5.5              | n.a.                   | CMOS                   | ±8                           | 3.2                  | 15                              | 1              | -40~125               |
| <b>74LV1T126</b> | Single supply translating buffer / line driver (3-state)                       | 1.6 - 5.5              | n.a.                   | CMOS                   | ±8                           | 2.9                  | 15                              | 1              | -40~125               |
| 74LVC1T45        | Single dual-supply voltage-translating transceiver (3-state)                   | 1.2 - 5.5              | 1.2 - 5.5              | CMOS/<br>LVTTTL        | ±24                          | 2.5                  | 50                              | 1              | -40~125               |
| 74LVC2T45        | Dual-bit dual-supply voltage-translating transceiver (3-state)                 | 1.2 - 5.5              | 1.2 - 5.5              | CMOS/<br>LVTTTL        | ±24                          | 2.5                  | 50                              | 2              | -40~125               |
| 74LVC4245        | 8-bit dual-supply voltage-translating transceiver (3-state)                    | 1.2 - 5.5              | 1.2 - 5.5              | CMOS/<br>LVTTTL        | ±24                          | 3.5                  | 50                              | 8              | -40~125               |
| 74LVC4245A       | 8-bit dual-supply voltage-translating transceiver (3-state)                    | 1.2 - 5.5              | 1.2 - 5.5              | CMOS/<br>LVTTTL        | ±24                          | 3.5                  | 50                              | 8              | -40~125               |
| 74LVC8T245       | 8-bit dual-supply voltage-translating transceiver (3-state)                    | 1.2 - 5.5              | 1.2 - 5.5              | CMOS/<br>LVTTTL        | ±24                          | 3.5                  | 50                              | 8              | -40~125               |
| 74LVC8T595       | Dual supply 8-bit serial-in/serial-out or parallel-out shift register; 3-state | 1.1 - 5.5              | 1.1 - 5.5              | CMOS/<br>LVTTTL        | ±24                          | 4.1                  | 15                              | 8              | -40~125               |
| 74LVCH1T45       | Single dual-supply voltage-translating transceiver with bus hold (3-state)     | 1.2 - 5.5              | 1.2 - 5.5              | CMOS/<br>LVTTTL        | ±24                          | 2.5                  | 50                              | 1              | -40~125               |
| 74LVCH2T45       | Dual-bit dual-supply voltage-translating transceiver with bus hold (3-state)   | 1.2 - 5.5              | 1.2 - 5.5              | CMOS/<br>LVTTTL        | ±24                          | 2.5                  | 50                              | 2              | -40~125               |
| 74LVCH8T245      | 8-bit dual-supply voltage-translating transceiver with bus hold (3-state)      | 1.2 - 5.5              | 1.2 - 5.5              | CMOS/<br>LVTTTL        | ±24                          | 3.5                  | 50                              | 8              | -40~125               |
| HEF4104B         | Quad low-to-high voltage translator (3-state)                                  | 3.0 - 15               | 3.0 - 15               | CMOS                   | ±2.4                         | 3.4                  | 50                              | 16             | -40~85                |



## Analog Switches

| Type number | Description  | V <sub>CC</sub> (V) | Logic switching levels | R <sub>ON</sub> (Ω) | R <sub>ON(FLAT)</sub> (Ω) | F <sub>(-3dB)</sub> (MHz) | T <sub>HD</sub> (%) | X <sub>talk</sub> (dB) | T <sub>amb</sub> (°C) |
|-------------|--|---------------------|------------------------|---------------------|---------------------------|---------------------------|---------------------|------------------------|-----------------------|
| 74AHC1G66   | Single-pole, single-throw analog switch                                    | 2.0 - 5.5           | CMOS                   | 40                  | 14                        | 280                       | 0.015               |                        | -40~125               |
| 74AHCT1G66  | Single-pole, single-throw analog switch; TTL-enabled                       | 4.5 - 5.5           | TTL                    | 40                  | 14                        | 280                       | 0.015               |                        | -40~125               |
| 74HC1G66    | Single-pole, single-throw analog switch                                    | 2.0 - 9.0           | CMOS                   | 105                 | 23                        | 200                       | 0.02                |                        | -40~125               |
| 74HC2G66    | Dual single-pole, single-throw analog switch                               | 2.0 - 9.0           | CMOS                   | 105                 | 23                        | 200                       | 0.02                | -60                    | -40~125               |
| 74HC4016    | Quad single-pole, single-throw analog switch                               | 2.0 - 10            | CMOS                   | 300                 | 80                        | 160                       | 0.4                 | -60                    | -40~125               |
| 74HC4051    | Single-pole, octal-throw analog switch                                     | 2.0 - 10            | CMOS                   | 200                 | 20                        | 180                       | 0.02                |                        | -40~125               |
| 74HC4052    | Dual single-pole, quad-throw analog switch                                 | 2.0 - 10            | CMOS                   | 200                 | 20                        | 180                       | 0.02                | -60                    | -40~125               |
| 74HC4053    | Triple single-pole, double-throw analog switch                             | 2.0 - 10            | CMOS                   | 200                 | 20                        | 170                       | 0.02                |                        | -40~125               |
| 74HC4066    | Quad single-pole, single-throw analog switch                               | 2.0 - 10            | CMOS                   | 105                 | 23                        | 200                       | 0.02                | -60                    | -40~125               |
| 74HC4067    | Single-pole, 16-throw analog switch  | 2.0 - 10            | CMOS                   | 200                 | 25                        | 100                       | 0.02                |                        | -40~125               |
| 74HC4316    | Quad single-pole, single-throw analog switch with translation              | 2.0 - 10            | CMOS                   | 300                 | 80                        | 160                       | 0.4                 | -60                    | -40~125               |
| 74HC4351    | Single-pole, octal-throw analog switch with latch                          | 2.0 - 10            | CMOS                   | 200                 | 20                        | 180                       | 0.02                |                        | -40~125               |
| 74HC4851    | Single-pole, octal-throw analog switch                                     | 2.0 - 10            | CMOS                   | 220                 |                           |                           |                     |                        | -40~125               |
| 74HC4852    | Dual single-pole, quad-throw analog switch; TTL-enabled                    | 2.0 - 10            | CMOS                   | 220                 |                           |                           |                     |                        | -40~125               |
| 74HCT1G66   | Single-pole, single-throw analog switch; TTL-enabled                       | 4.5 - 5.5           | TTL                    | 118                 | 23                        | 180                       | 0.04                |                        | -40~125               |
| 74HCT2G66   | Dual single-pole, single-throw analog switch; TTL-enabled                  | 4.5 - 5.5           | TTL                    | 118                 | 23                        | 180                       | 0.04                | -60                    | -40~125               |
| 74HCT4051   | Single-pole, octal-throw analog switch; TTL-enabled                        | 4.5 - 5.5           | TTL                    | 225                 | 20                        | 170                       | 0.04                |                        | -40~125               |
| 74HCT4052   | Dual single-pole, quad-throw analog switch; TTL-enabled                    | 4.5 - 5.5           | TTL                    | 225                 | 20                        | 170                       | 0.04                | -60                    | -40~125               |
| 74HCT4053   | Triple single-pole, double-throw analog switch; TTL-enabled                | 4.5 - 5.5           | TTL                    | 225                 | 20                        | 160                       | 0.04                |                        | -40~125               |
| 74HCT4066   | Quad single-pole, single-throw analog switch; TTL-enabled                  | 4.5 - 5.5           | TTL                    | 118                 | 23                        | 180                       | 0.04                | -60                    | -40~125               |
| 74HCT4067   | Single-pole, 16-throw analog switch; TTL-enabled                           | 4.5 - 5.5           | TTL                    | 225                 | 25                        | 90                        | 0.04                |                        | -40~125               |
| 74HCT4316   | Quad single-pole, single-throw analog switch with translation; TTL-enabled | 4.5 - 5.5           | TTL                    | 400                 | 50                        | 150                       | 0.8                 | -60                    | -40~125               |
| 74HCT4351   | Single-pole, octal-throw analog switch with latch; TTL-enabled             | 4.5 - 5.5           | TTL                    | 225                 | 20                        | 170                       | 0.04                |                        | -40~125               |
| 74HCT4851   | Single-pole, octal-throw analog switch; TTL-enabled                        | 4.5 - 5.5           | TTL                    | 240                 |                           |                           |                     |                        | -40~125               |
| 74HCT4852   | Dual single-pole, quad-throw analog switch; TTL-enabled                    | 4.5 - 5.5           | TTL                    | 240                 |                           |                           |                     |                        | -40~125               |
| 74LV4051    | Single-pole, octal-throw analog switch                                     | 1.0 - 6.0           | TTL                    | 135                 | 35                        | 200                       | 0.4                 | -60                    | -40~125               |
| 74LV4052    | Dual single-pole, quad-throw analog switch                                 | 1.0 - 6.0           | TTL                    | 125                 | 15                        | 180                       | 0.4                 | -60                    | -40~125               |
| 74LV4053    | Triple single-pole, double-throw analog switch                             | 1.0 - 6.0           | TTL                    | 150                 | 30                        | 180                       | 0.4                 | -60                    | -40~125               |
| 74LV4066    | Quad single-pole, single-throw analog switch                               | 1.0 - 6.0           | TTL                    | 50                  | 3.0                       | 180                       | 0.02                | -60                    | -40~125               |
| 74LVC1G3157 | Single-pole, double-throw analog switch                                    | 1.65 - 5.5          | CMOS/<br>LVTTTL        | 15                  | 1.5                       | 300                       | 0.078               |                        | -40~125               |
| 74LVC1G384  | Single-pole, single-throw analog switch                                    | 1.65 - 5.5          | CMOS/<br>LVTTTL        | 15                  | 1.5                       | 440                       | 0.001               |                        | -40~125               |
| 74LVC1G53   | Single-pole, double-throw analog switch                                    | 1.65 - 5.5          | CMOS/<br>LVTTTL        | 15                  | 1.5                       | 300                       | 0.078               |                        | -40~125               |
| 74LVC1G66   | Single-pole, single-throw analog switch                                    | 1.65 - 5.5          | CMOS/<br>LVTTTL        | 15                  | 1.5                       | 440                       | 0.001               |                        | -40~125               |
| 74LVC2G3157 | Dual single-pole, double-throw analog switch                               | 1.65 - 5.5          | CMOS/<br>LVTTTL        | 15                  | 1.5                       | 300                       | 0.078               | -54                    | -40~125               |
| 74LVC2G53   | Single-pole, double-throw analog switch                                    | 1.65 - 5.5          | CMOS/<br>LVTTTL        | 15                  | 1.5                       | 300                       | 0.078               |                        | -40~125               |
| 74LVC2G66   | Dual single-pole, single-throw analog switch                               | 1.65 - 5.5          | CMOS/<br>LVTTTL        | 15                  | 1.5                       | 440                       | 0.005               | -56                    | -40~125               |
| 74LVC4066   | Quad single-pole, single-throw analog switch                               | 1.65 - 5.5          | CMOS/<br>LVTTTL        | 15                  | 1.5                       | 440                       | 0.005               | -58                    | -40~125               |
| 74LVCV2G66  | Dual single-pole, single-throw analog switch; overvoltage tolerant         | 2.3 - 5.5           | CMOS/<br>LVTTTL        | 15                  | 3.0                       | 210                       | 0.01                | -55                    | -40~125               |
| HEF4016B    | Quad single-pole, single-throw analog switch                               | 3.0 - 15            | CMOS                   | 350                 | 65                        | 90                        | 0.04                | -50                    | -40~85                |
| HEF4051B    | Single-pole, octal-throw analog switch                                     | 3.0 - 15            | CMOS                   | 175                 | 30                        | 70                        | 0.04                | -50                    | -40~85                |
| HEF4052B    | Dual single-pole, quad-throw analog switch                                 | 3.0 - 15            | CMOS                   | 175                 | 30                        | 70                        | 0.04                | -50                    | -40~85                |
| HEF4053B    | Triple single-pole, double-throw analog switch                             | 3.0 - 15            | CMOS                   | 175                 | 30                        | 70                        | 0.04                | -50                    | -40~85                |
| HEF4066B    | Quad single-pole, single-throw analog switch                               | 3.0 - 15            | CMOS                   | 175                 | 20                        | 90                        | 0.04                | -50                    | -40~85                |
| HEF4067B    | Single-pole, 16-throw analog switch  | 3.0 - 15            | CMOS                   | 175                 | 20                        | 13                        | 0.04                | -50                    | -40~85                |

## Bus Switches

| Type number  | Description   | V <sub>CC</sub> (V) | V <sub>PASS</sub> (V) | Logic switching levels | R <sub>ON</sub> (Ω) | f <sub>(-3dB)</sub> (MHz) | Number of bits | t <sub>pd</sub> (ns) | T <sub>amb</sub> (°C) |
|--------------|---|---------------------|-----------------------|------------------------|---------------------|---------------------------|----------------|----------------------|-----------------------|
| 74CB3Q3253   | Dual 1-of-4 FET multiplexer/ demultiplexer with charge pump | 2.3 - 3.6           | V <sub>CC</sub>       | CMOS/LVTTL             | 4                   | 500                       | 2              | 0.2                  | -40~85                |
| 74CB3Q3257   | Quad 1-of-2 FET multiplexer/ demultiplexer with charge pump | 2.3 - 3.6           | V <sub>CC</sub>       | CMOS/LVTTL             | 4                   | 500                       | 4              | 0.2                  | -40~85                |
| 74CBTLV16211 | 24-bit bus switch   | 2.3 - 3.6           | 3.3                   | CMOS/LVTTL             | 7                   | 400                       | 10             | 0.2                  | -40~125               |
| 74CBTLV1G125 | Single bus switch   | 2.3 - 3.6           | 3.3                   | CMOS/LVTTL             | 7                   | 400                       | 1              | 0.2                  | -40~125               |
| 74CBTLV3125  | Quad bus switch   | 2.3 - 3.6           | 3.3                   | CMOS/LVTTL             | 7                   | 400                       | 4              | 0.2                  | -40~125               |
| 74CBTLV3126  | Quad bus switch   | 2.3 - 3.6           | 3.3                   | CMOS/LVTTL             | 7                   | 400                       | 4              | 0.2                  | -40~125               |
| 74CBTLV3244  | Octal bus switch  | 2.3 - 3.6           | 3.3                   | CMOS/LVTTL             | 7                   | 400                       | 8              | 0.2                  | -40~125               |
| 74CBTLV3245  | Octal bus switch  | 2.3 - 3.6           | 3.3                   | CMOS/LVTTL             | 7                   | 400                       | 8              | 0.2                  | -40~125               |
| 74CBTLV3253  | Dual 4:1 mux/demux  | 2.3 - 3.6           | 3.3                   | CMOS/LVTTL             | 7                   | 400                       | 2              | 0.2                  | -40~125               |
| 74CBTLV3257  | Quad 2:1 mux/demux  | 2.3 - 3.6           | 3.3                   | CMOS/LVTTL             | 7                   | 400                       | 4              | 0.2                  | -40~125               |
| 74CBTLV3306  | 2-bit bus switch  | 2.3 - 3.6           | 5.0                   | CMOS/LVTTL             | 7                   | 400                       | 2              | 0.2                  | -40~125               |
| 74CBTLV3384  | 10-bit bus switch   | 2.3 - 3.6           | 3.3                   | CMOS/LVTTL             | 7                   | 400                       | 10             | 0.2                  | -40~125               |
| 74CBTLV3861  | 10-bit bus switch   | 2.3 - 3.6           | 3.3                   | CMOS/LVTTL             | 7                   | 400                       | 10             | 0.2                  | -40~125               |
| 74CBTLVD3244 | Octal bus switch level translator                           | 3.0 - 3.6           | 1.8                   | CMOS/LVTTL             | 7                   | 400                       | 8              | 0.2                  | -40~125               |
| 74CBTLVD3245 | Octal bus switch level translator                           | 3.0 - 3.6           | 1.8                   | CMOS/LVTTL             | 7                   | 400                       | 8              | 0.2                  | -40~125               |
| 74CBTLVD3384 | 10-bit bus switch level translator                          | 3.0 - 3.6           | 1.8                   | CMOS/LVTTL             | 7                   | 400                       | 10             | 0.2                  | -40~125               |
| 74CBTLVD3861 | 10-bit bus switch level translator                          | 3.0 - 3.6           | 1.8                   | CMOS/LVTTL             | 7                   | 400                       | 10             | 0.2                  | -40~125               |
| CBT16210     | 20-bit bus switch   | 4.5 - 5.5           | 3.9                   | TTL                    | 7                   | 300                       | 20             | 0.25                 | -40~85                |
| CBT3125      | Quad bus switch   | 4.5 - 5.5           | 3.9                   | TTL                    | 7                   | 300                       | 4              | 0.25                 | -40~85                |
| CBT3244A     | Octal bus switch  | 4.5 - 5.5           | 3.9                   | TTL                    | 7                   | 300                       | 8              | 0.25                 | -40~85                |
| CBT3245A     | Octal bus switch  | 4.5 - 5.5           | 3.9                   | TTL                    | 7                   | 300                       | 8              | 0.25                 | -40~85                |
| CBT3251      | 8:1 mux/demux   | 4.5 - 5.5           | 3.9                   | TTL                    | 7                   | 300                       | 8              | 0.25                 | -40~85                |
| CBT3253      | Dual 4:1 mux/demux  | 4.5 - 5.5           | 3.9                   | TTL                    | 7                   | 300                       | 2              | 0.25                 | -40~85                |
| CBT3253A     | Dual 4:1 mux/demux  | 4.5 - 5.5           | 3.9                   | TTL                    | 7                   | 300                       | 2              | 0.25                 | -40~85                |
| CBT3257A     | Quad 2:1 mux/demux  | 4.5 - 5.5           | 3.9                   | TTL                    | 7                   | 300                       | 4              | 0.25                 | -40~85                |
| CBT3306      | Dual bus switch   | 4.5 - 5.5           | 3.9                   | TTL                    | 7                   | 300                       | 2              | 0.25                 | -40~85                |
| CBT3861      | 10-bit bus switch   | 4.5 - 5.5           | 3.9                   | TTL                    | 7                   | 300                       | 10             | 0.25                 | -40~85                |
| CBTD16210    | 20-bit bus switch level translator                          | 4.5 - 5.5           | 3.3                   | TTL                    | 7                   | 300                       | 20             | 0.25                 | -40~85                |
| CBTD3306     | Dual bus switch level translator                            | 4.5 - 5.5           | 3.3                   | TTL                    | 7                   | 300                       | 2              | 0.25                 | -40~85                |
| CBTD3384     | 10-bit bus switch level translator                          | 4.5 - 5.5           | 3.3                   | TTL                    | 7                   | 300                       | 10             | 0.25                 | -40~85                |
| CBTD3861     | 10-bit bus switch level translator                          | 4.5 - 5.5           | 3.3                   | TTL                    | 7                   | 300                       | 10             | 0.25                 | -40~85                |

## Decoders/Demultiplexers

| Type number | Description   | V <sub>CC</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (pF) | T <sub>amb</sub> (°C) |
|-------------|---|---------------------|------------------------|------------------------------|----------------------|---------------------------------|-----------------------|
| 74AHC138    | 3-to-8 line decoder/demultiplexer; inverting                            | 2.0 - 5.5           | CMOS                   | ±8                           | 4.4                  | 50                              | -40~125               |
| 74AHC139    | Dual 2-to-4 line decoder/demultiplexer                                  | 2.0 - 5.5           | CMOS                   | ±8                           | 3.9                  | 50                              | -40~125               |
| 74AHCT138   | 3-to-8 line decoder/demultiplexer; inverting; TTL-enabled               | 4.5 - 5.5           | TTL                    | ±8                           | 4.4                  | 50                              | -40~125               |
| 74AHCT139   | Dual 2-to-4 line decoder/demultiplexer; TTL-enabled                     | 4.5 - 5.5           | TTL                    | ±8                           | 3.6                  | 50                              | -40~125               |
| 74AUP1G18   | 1-to-2 demultiplexer (3-state)  | 1.1 - 3.6           | CMOS                   | ±1.9                         | 3.2                  | 30                              | -40~125               |
| 74AUP1G19   | 1-to-2 decoder/demultiplexer  | 1.1 - 3.6           | CMOS                   | ±1.9                         | 3.0                  | 30                              | -40~125               |
| 74HC137     | 3-to-8 line decoder/demultiplexer with address latches; inverting       | 2.0 - 6.0           | CMOS                   | ±5.2                         | 18                   | 50                              | -40~125               |
| 74HC138     | 3-to-8 line decoder/demultiplexer; inverting                            | 2.0 - 6.0           | CMOS                   | ±5.2                         | 12                   | 50                              | -40~125               |
| 74HC139     | Dual 2-to-4 line decoder/demultiplexer                                  | 2.0 - 6.0           | CMOS                   | ±5.2                         | 14                   | 50                              | -40~125               |
| 74HC154     | 4-to-16 line decoder/demultiplexer                                      | 2.0 - 6.0           | CMOS                   | ±5.2                         | 11                   | 50                              | -40~125               |
| 74HC237     | 3-to-8 decoder/demultiplexer with address latches                       | 2.0 - 6.0           | CMOS                   | ±5.2                         | 18                   | 50                              | -40~125               |
| 74HC238     | 3-to-8 decoder/demultiplexer  | 2.0 - 6.0           | CMOS                   | ±5.2                         | 14                   | 50                              | -40~125               |
| 74HC42      | BCD to decimal decoder (1-of-10)  | 2.0 - 6.0           | CMOS                   | ±5.2                         | 17                   | 50                              | -40~125               |
| 74HC4511    | BCD to 7-segment latch/decoder/driver with lamp test input              | 2.0 - 6.0           | CMOS                   | -10                          | 28                   | 50                              | -40~125               |
| 74HC4514    | 4-to-16 decoder/demultiplexer with address latches                      | 2.0 - 6.0           | CMOS                   | ±5.2                         | 27                   | 50                              | -40~125               |
| 74HC4515    | 4-to-16 decoder/demultiplexer with address latches; inverting           | 2.0 - 6.0           | CMOS                   | ±5.2                         | 29                   | 50                              | -40~125               |
| 74HCT138    | 3-to-8 line decoder/demultiplexer; inverting; TTL-enabled               | 4.5 - 5.5           | TTL                    | ±4                           | 19                   | 50                              | -40~125               |
| 74HCT139    | Dual 2-to-4 line decoder/demultiplexer; TTL-enabled                     | 4.5 - 5.5           | TTL                    | ±4                           | 16                   | 50                              | -40~125               |
| 74HCT154    | 4-to-16 line decoder/demultiplexer; TTL-enabled                         | 4.5 - 5.5           | TTL                    | ±4                           | 13                   | 50                              | -40~125               |
| 74HCT238    | 3-to-8 decoder/demultiplexer; TTL-enabled                               | 4.5 - 5.5           | TTL                    | ±4                           | 18                   | 50                              | -40~125               |
| 74HCT4511   | BCD to 7-segment latch/decoder/driver with lamp test input; TTL-enabled | 4.5 - 5.5           | TTL                    | -10                          | 28                   | 50                              | -40~125               |
| 74HCT4514   | 4-to-16 decoder/demultiplexer with address latches; TTL-enabled         | 4.5 - 5.5           | TTL                    | ±4                           | 30                   | 50                              | -40~125               |
| 74LV138     | 3-to-8 line decoder/demultiplexer; inverting                            | 1.0 - 5.5           | TTL                    | ±12                          | 12                   | 50                              | -40~125               |
| 74LVC138A   | 3-to-8 line decoder/demultiplexer; inverting                            | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 2.7                  | 50                              | -40~125               |
| 74LVC139    | Dual 2-to-4 line decoder/demultiplexer                                  | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 2.5                  | 50                              | -40~125               |
| 74LVC1G18   | 1-to-2 demultiplexer (3-state)  | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 2.3                  | 50                              | -40~125               |
| 74LVC1G19   | 1-to-2 decoder/demultiplexer  | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 1.8                  | 50                              | -40~125               |
| HEF4028B    | 1-of-10 decoder   | 3.0 - 15.0          | CMOS                   | ±2.4                         | 30                   | 50                              | -40~85                |
| HEF4543B    | BCD to 7-segment latch/decoder/driver with phase input                  | 3.0 - 15.0          | CMOS                   | ±2.4                         | 55                   | 50                              | -40~85                |
| HEF4555B    | Dual 1-to-4 line decoder/demultiplexer                                  | 3.0 - 15.0          | CMOS                   | ±2.4                         | 30                   | 50                              | -40~85                |

## Digital Multiplexers

| Type number | Description                                     | V <sub>CC</sub> (V) | Logic switching levels | Output drive capability (mA) | Output Load C <sub>L</sub> (pF) | t <sub>pd</sub> (ns) | T <sub>amb</sub> (°C) |
|-------------|---|---------------------|------------------------|------------------------------|---------------------------------|----------------------|-----------------------|
| 74AHC157    | Quad 2-input multiplexer                        | 2.0 - 5.5           | CMOS                   | ±8                           | 50                              | 3.2                  | -40~125               |
| 74AHC257    | Quad 2-input multiplexer (3-state)              | 2.0 - 5.5           | CMOS                   | ±8                           | 50                              | 2.9                  | -40~125               |
| 74AHCT157   | Quad 2-input multiplexer; TTL-enabled           | 4.5 - 5.5           | TTL                    | ±8                           | 50                              | 3.2                  | -40~125               |
| 74AHCT257   | Quad 2-input multiplexer; TTL-enabled (3-state) | 4.5 - 5.5           | TTL                    | ±8                           | 50                              | 3.7                  | -40~125               |
| 74AUP1G157  | Single 2-input multiplexer                      | 1.1 - 3.6           | CMOS                   | ±1.9                         | 30                              | 3.2                  | -40~125               |
| 74AUP1G158  | Single 2-input multiplexer; inverting           | 1.1 - 3.6           | CMOS                   | ±1.9                         | 30                              | 3.2                  | -40~125               |
| 74AUP2G157  | Single 2-input multiplexer                      | 1.1 - 3.6           | CMOS                   | ±1.9                         | 30                              | 3.4                  | -40~125               |
| 74AXP1G157  | Single 2-input multiplexer                      | 0.7 - 2.75          | CMOS                   | ±4.5                         | 5                               | 2.7                  | -40~85                |
| 74HC151     | 8-input multiplexer                             | 2.0 - 6.0           | CMOS                   | ±5.2                         | 50                              | 17                   | -40~125               |
| 74HC153     | Dual 4-input multiplexer                        | 2.0 - 6.0           | CMOS                   | ±5.2                         | 50                              | 17                   | -40~125               |
| 74HC157     | Quad 2-input multiplexer                        | 2.0 - 6.0           | CMOS                   | ±5.2                         | 50                              | 11                   | -40~125               |
| 74HC158     | Quad 2-input multiplexer; inverting             | 2.0 - 6.0           | CMOS                   | ±5.2                         | 50                              | 12                   | -40~125               |
| 74HC251     | 8-input multiplexer (3-state)                   | 2.0 - 6.0           | CMOS                   | ±5.2                         | 50                              | 18                   | -40~125               |
| 74HC253     | Dual 4-input multiplexer (3-state)              | 2.0 - 6.0           | CMOS                   | ±7.8                         | 50                              | 17                   | -40~125               |
| 74HC257     | Quad 2-input multiplexer (3-state)              | 2.0 - 6.0           | CMOS                   | ±7.8                         | 50                              | 11                   | -40~125               |
| 74HCT151    | 8-input multiplexer; TTL-enabled                | 4.5 - 5.5           | TTL                    | ±4                           | 50                              | 19                   | -40~125               |
| 74HCT153    | Dual 4-input multiplexer; TTL-enabled           | 4.5 - 5.5           | TTL                    | ±4                           | 50                              | 19                   | -40~125               |
| 74HCT157    | Quad 2-input multiplexer; TTL-enabled           | 4.5 - 5.5           | TTL                    | ±4                           | 50                              | 13                   | -40~125               |
| 74HCT251    | 8-input multiplexer; TTL-enabled (3-state)      | 4.5 - 5.5           | TTL                    | ±4                           | 50                              | 22                   | -40~125               |
| 74HCT253    | Dual 4-input multiplexer; TTL-enabled (3-state) | 4.5 - 5.5           | TTL                    | ±6                           | 50                              | 17                   | -40~125               |
| 74HCT257    | Quad 2-input multiplexer; TTL-enabled (3-state) | 4.5 - 5.5           | TTL                    | ±6                           | 50                              | 13                   | -40~125               |
| 74LVC157A   | Quad 2-input multiplexer                        | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 50                              | 2.5                  | -40~125               |
| 74LVC1G157  | Single 2-input multiplexer                      | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 50                              | 2.2                  | -40~125               |
| 74LVC257A   | Quad 2-input multiplexer (3-state)              | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 50                              | 2.4                  | -40~125               |

## Shift Registers

| Type number | Description   | V <sub>CC</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | f <sub>max</sub> (MHz) | Number of bits | T <sub>amb</sub> (°C) |
|-------------|---|---------------------|------------------------|------------------------------|----------------------|------------------------|----------------|-----------------------|
| 74HC194     | 4-bit bidirectional parallel or serial-in/parallel-out shift register                           | 2.0 - 6.0           | CMOS                   | +/- 5.2                      | 14                   | 102                    | 4              | -40~125               |
| 74AHC164    | 8-bit serial-in/parallel-out shift register   | 2.0 - 5.5           | CMOS                   | +/- 8                        | 4.5                  | 115                    | 8              | -40~125               |
| 74AHCT164   | 8-bit serial-in/parallel-out shift register; TTL enabled  | 4.5 - 5.5           | TTL                    | +/- 8                        | 3.4                  | 115                    | 8              | -40~125               |
| 74AHC594    | 8-bit serial-in/parallel-out shift register with output storage register                        | 2.0 - 5.5           | CMOS                   | +/- 8                        | 4.1                  | 160                    | 8              | -40~125               |
| 74AHCT594   | 8-bit serial-in/parallel-out shift register with output storage register; TTL enabled           | 4.5 - 5.5           | TTL                    | +/- 8                        | 3.8                  | 160                    | 8              | -40~125               |
| 74AHC595    | 8-bit serial-in/parallel-out shift register with output storage register (3-state)              | 2.0 - 5.5           | CMOS                   | +/- 8                        | 4                    | 170                    | 8              | -40~125               |
| 74AHCT595   | 8-bit serial-in/parallel-out shift register with output storage register; TTL enabled (3-state) | 4.5 - 5.5           | TTL                    | +/- 8                        | 3.8                  | 170                    | 8              | -40~125               |
| 74HC299     | 8-bit universal shift register (3-state)  | 2.0 - 6.0           | CMOS                   | +/- 7.8                      | 19                   | 54                     | 8              | -40~125               |

## Shift Registers

| Type number | Description   | V <sub>CC</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | f <sub>max</sub> (MHz) | Number of bits | T <sub>amb</sub> (°C) |
|-------------|---|---------------------|------------------------|------------------------------|----------------------|------------------------|----------------|-----------------------|
| 74HC164     | 8-bit serial-in/parallel-out shift register   | 2.0 - 6.0           | CMOS                   | +/- 5.2                      | 12                   | 78                     | 8              | -40~125               |
| 74HCT164    | 8-bit serial-in/parallel-out shift register; TTL enabled  | 2.0 - 6.0           | TTL                    | +/- 5.2                      | 12                   | 78                     | 8              | -40~125               |
| 74HC165     | 8-bit parallel or serial-in/serial-out shift register   | 2.0 - 6.0           | CMOS                   | +/- 5.2                      | 16                   | 56                     | 8              | -40~125               |
| 74HCT165    | 8-bit parallel or serial-in/serial-out shift register; TTL enabled  | 4.5 - 5.5           | TTL                    | +/- 4                        | 14                   | 48                     | 8              | -40~125               |
| 74HC166     | 8-bit parallel or serial-in/serial-out shift register   | 2.0 - 6.0           | CMOS                   | +/- 5.2                      | 15                   | 63                     | 8              | -40~125               |
| 74HCT166    | 8-bit parallel or serial-in/serial-out shift register; TTL enabled  | 4.5 - 5.5           | TTL                    | +/- 4.0                      | 23                   | 50                     | 8              | -40~125               |
| 74HC594     | 8-bit serial-in/parallel-out shift register with output storage register                                    | 2.0 - 6.0           | CMOS                   | +/- 7.8                      | 14                   | 109                    | 8              | -40~125               |
| 74HCT594    | 8-bit serial-in/parallel-out shift register with output storage register; TTL enabled                       | 4.5 - 5.5           | TTL                    | +/- 6                        | 15                   | 100                    | 8              | -40~125               |
| 74HC595     | 8-bit serial-in/parallel-out shift register with output storage register (3-state)                          | 2.0 - 6.0           | CMOS                   | +/- 7.8                      | 16                   | 108                    | 8              | -40~125               |
| 74HCT595    | 8-bit serial-in/parallel-out shift register with output storage register; TTL enabled (3-state)             | 4.5 - 5.5           | TTL                    | +/- 6                        | 25                   | 57                     | 8              | -40~125               |
| 74HC597     | 8-bit parallel or serial-in/parallel-out shift register with parallel input storage register                | 2.0 - 6.0           | CMOS                   | +/- 5.2                      | 16                   | 108                    | 8              | -40~125               |
| 74HCT597    | 8-bit parallel or serial-in/parallel-out shift register with parallel input storage register; TTL enabled   | 4.5 - 5.5           | TTL                    | +/- 4                        | 20                   | 83                     | 8              | -40~125               |
| 74HC4094    | 8-bit serial-in/serial or parallel-out shift register with output register (3-state)                        | 2.0 - 6.0           | CMOS                   | +/- 5.2                      | 15                   | 95                     | 8              | -40~125               |
| 74HCT4094   | 8-bit serial-in/serial or parallel-out shift register with output register; TTL enabled (3-state)           | 4.5 - 5.5           | TTL                    | +/- 4                        | 19                   | 86                     | 8              | -40~125               |
| 74LV164     | 8-bit serial-in/parallel-out shift register   | 1.0 - 5.5           | CMOS                   | +/- 12                       | 12                   | 78                     | 8              | -40~125               |
| 74LV165     | 8-bit parallel or serial-in/serial-out shift register   | 1.0 - 5.5           | CMOS                   | +/- 12                       | 18                   | 78                     | 8              | -40~125               |
| 74LV165A    | 8-bit parallel or serial-in/serial-out shift register   | 1.0 - 5.5           | CMOS                   | +/- 12                       | 7.5                  | 115                    | 8              | -40~125               |
| 74LV595     | 8-bit serial-in/parallel-out shift register with output storage register (3-state)                          | 1.0 - 3.6           | CMOS                   | +/- 8                        | 15                   | 77                     | 8              | -40~125               |
| 74LV4094    | 8-bit serial-in/serial or parallel-out shift register with output register (3-state)                        | 1.0 - 3.6           | CMOS                   | +/- 6                        | 14                   | 95                     | 8              | -40~125               |
| 74LVC594A   | 8-bit serial-in/parallel-out shift register with output storage register                                    | 1.2 - 5.5           | CMOS/LVTTL             | +/- 24                       | 3.1                  | 180                    | 8              | -40~125               |
| 74LVC595A   | 8-bit serial-in/parallel-out shift register with output storage register (3-state)                          | 1.2 - 5.5           | CMOS/LVTTL             | +/- 24                       | 4                    | 180                    | 8              | -40~125               |
| 74LVC8T595  | Dual supply 8-bit serial-in/serial-out or parallel-out shift register; 3-state                              | 1.1 - 5.5           | CMOS/LVTTL             | ±24                          | 4.1                  | 15                     | 8              | -40~125               |
| 74VHC595    | 8-bit serial-in/parallel-out shift register with output storage register (3-state)                          | 2.0 - 5.5           | CMOS                   | +/- 8                        | 4                    | 170                    | 8              | -40~125               |
| 74VHCT595   | 8-bit serial-in/parallel-out shift register with output storage register; TTL enabled (3-state)             | 4.5 - 5.5           | TTL                    | +/- 8                        | 3.8                  | 170                    | 8              | -40~125               |
| NPIC6C595   | 8-bit serial-in/parallel-out shift register with output storage register (3-state); open-drain              | 4.5 - 5.5           | CMOS                   | 100                          | 90                   | 10                     | 8              | -40~125               |
| NPIC6C596   | 8-bit serial-in/serial or parallel-out shift register with output register LED driver (3-state); open-drain | 4.5 - 5.5           | CMOS                   | 100                          | 90                   | 10                     | 8              | -40~125               |
| NPIC6C596A  | 8-bit serial-in/serial or parallel-out shift register with output register LED driver (3-state); open-drain | 2.3 - 5.5           | CMOS                   | 100                          | 90                   | 10                     | 8              | -40~125               |
| NPIC6C4894  | 12-bit shift registers; open-drain  | 4.5 - 5.5           | CMOS                   | 100                          | 90                   | 10                     | 12             | -40~125               |
| HEF4014B    | 8-bit shift register with synchronous parallel enable   | 4.5 - 15            | CMOS                   | +/- 2.4                      | 40                   | 40                     | 8              | -40~85                |
| HEF4015B    | dual 4-bit serial-in/parallel-out shift register  | 4.5 - 15            | CMOS                   | +/- 2.4                      | 40                   | 44                     | 2              | -40~85                |
| HEF4021B    | 8-bit shift register with asynchronous parallel load  | 4.5 - 15            | CMOS                   | +/- 2.4                      | 40                   | 40                     | 8              | -40~85                |
| HEF4094B    | 8-bit serial-in/serial or parallel-out shift register with output register (3-state)                        | 4.5 - 15            | CMOS                   | +/- 2.4                      | 50                   | 28                     | 8              | -40~85                |
| HEF4557B    | 1-to-64 bit shift register with variable length   | 4.5 - 15            | CMOS                   | +/- 2.4                      | 65                   | 20                     | 64             | -40~85                |
| HEF4794B    | 8-bit serial-in/serial or parallel-out shift register with output register LED driver (3-state)             | 4.5 - 15            | CMOS                   | -20                          | 45                   | 28                     | 8              | -40~85                |
| HEF4894B    | 12-bit serial-in/serial or parallel-out shift register with output register LED driver (3-state)            | 4.5 - 15            | CMOS                   | -20                          | 45                   | 28                     | 12             | -40~85                |

## Latches/Registered drivers

| Type number   | Description  | V <sub>cc</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (pF) | Number of bits | T <sub>amb</sub> (°C) |
|---------------|--|---------------------|------------------------|------------------------------|----------------------|---------------------------------|----------------|-----------------------|
| 74AHC373      | Octal D-type transparent latch (3-state)   | 2.0 - 5.5           | CMOS                   | ±8                           | 4.3                  | 50                              | 8              | -40~125               |
| 74AHC573      | Octal D-type transparent latch (3-state)   | 2.0 - 5.5           | CMOS                   | ±8                           | 4.2                  | 50                              | 8              | -40~125               |
| 74AHCT573     | Octal D-type transparent latch; TTL-enabled (3-state)                                  | 4.5 - 5.5           | TTL                    | ±8                           | 3.9                  | 50                              | 8              | -40~125               |
| 74ALVC162334A | 16-bit registered driver with 30 Ω termination resistors (3-state)                     | 1.65 - 3.6          | TTL                    | ±24                          | 6.0                  | 50                              | 16             | -40~85                |
| 74ALVC162834A | 18-bit registered driver with 30 Ω termination resistors (3-state)                     | 1.65 - 3.6          | TTL                    | ±24                          | 6.0                  | 50                              | 18             | -40~85                |
| 74ALVC162835A | 18-bit registered driver with 30 Ω termination resistors (3-state)                     | 1.65 - 3.6          | TTL                    | ±24                          | 6.0                  | 50                              | 18             | -40~85                |
| 74ALVC162836A | 20-bit registered driver with 30 Ω termination resistors (3-state)                     | 1.65 - 3.6          | TTL                    | ±24                          | 6.0                  | 50                              | 20             | -40~85                |
| 74ALVC16834A  | 18-bit registered driver (3-state)   | 1.65 - 3.6          | TTL                    | ±24                          | 4.0                  | 50                              | 18             | -40~85                |
| 74ALVC16835A  | 18-bit registered driver (3-state)   | 1.65 - 3.6          | TTL                    | ±24                          | 4.0                  | 50                              | 18             | -40~85                |
| 74ALVC16836A  | 20-bit registered driver (3-state)   | 1.65 - 3.6          | TTL                    | ±24                          | 4.0                  | 50                              | 20             | -40~85                |
| 74ALVC373     | Octal D-type transparent latch (3-state)   | 1.65 - 3.6          | TTL                    | ±24                          | 2.2                  | 50                              | 8              | -40~85                |
| 74ALVC573     | Octal D-type transparent latch (3-state)   | 1.65 - 3.6          | TTL                    | ±24                          | 2.2                  | 50                              | 8              | -40~85                |
| 74ALVCH16373  | 16-bit D-type transparent latch with bus hold (3-state)                                | 2.3 - 3.6           | TTL                    | ±24                          | 2.1                  | 50                              | 16             | -40~85                |
| 74ALVCH16841  | 20-bit D-type transparent latch with bus hold (3-state)                                | 2.3 - 3.6           | TTL                    | ±24                          | 2.4                  | 50                              | 20             | -40~85                |
| 74ALVCH16843  | 18-bit D-type transparent latch with bus hold (3-state)                                | 2.3 - 3.6           | TTL                    | ±24                          | 2.1                  | 50                              | 18             | -40~85                |
| 74ALVCH32973  | 16-bit transceiver and transparent D-type latch with 8 independent buffers             | 1.8 - 3.6           | TTL                    | ±24                          | 2.5                  | 50                              | 16             | -40~85                |
| 74ALVT16373   | 16-bit D-type transparent latch with bus hold (3-state)                                | 2.3 - 3.6           | TTL                    | -32 / 64                     | 1.8                  | 50                              | 16             | -40~85                |
| 74AUP1G373    | Single D-type transparent latch (3-state)  | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.5                  | 30                              | 1              | -40~125               |
| 74AVC16334A   | 16-bit registered driver (3-state)   | 1.2 - 3.6           | CMOS                   | ±12                          | 2.0                  | 30                              | 16             | -40~85                |
| 74AVC16373    | 16-bit D-type transparent latch (3-state)  | 1.2 - 3.6           | CMOS                   | ±12                          | 2.0                  | 30                              | 16             | -40~85                |
| 74AVC16834A   | 18-bit registered driver (3-state)   | 1.2 - 3.6           | CMOS                   | ±12                          | 2.0                  | 30                              | 18             | -40~85                |
| 74AVC16835A   | 18-bit registered driver (3-state)   | 1.2 - 3.6           | CMOS                   | ±12                          | 2.0                  | 30                              | 18             | -40~85                |
| 74AVC16836A   | 20-bit registered driver (3-state)   | 1.2 - 3.6           | CMOS                   | ±12                          | 2.0                  | 30                              | 20             | -40~85                |
| 74HC259       | 8-bit addressable latch  | 2.0 - 6.0           | CMOS                   | ±5.2                         | 18                   | 50                              | 8              | -40~125               |
| 74HC373       | Octal D-type transparent latch (3-state)   | 2.0 - 6.0           | CMOS                   | ±7.8                         | 12                   | 50                              | 8              | -40~125               |
| 74HC573       | Octal D-type transparent latch (3-state)   | 2.0 - 6.0           | CMOS                   | ±7.8                         | 14                   | 50                              | 8              | -40~125               |
| 74HC75        | Quad bistable transparent latch  | 2.0 - 6.0           | CMOS                   | ±5.2                         | 11                   | 50                              | 4              | -40~125               |
| 74HC75        | Quad bistable transparent latch  | 2.0 - 6.0           | CMOS                   | ±5.2                         | 11                   | 50                              | 4              | -40~125               |
| 74HCT259      | 8-bit addressable latch; TTL-enabled   | 4.5 - 5.5           | TTL                    | ±4                           | 20                   | 50                              | 8              | -40~125               |
| 74HCT373      | Octal D-type transparent latch; TTL-enabled (3-state)                                  | 4.5 - 5.5           | TTL                    | ±6                           | 14                   | 50                              | 8              | -40~125               |
| 74HCT573      | Octal D-type transparent latch; TTL-enabled (3-state)                                  | 4.5 - 5.5           | TTL                    | ±6                           | 17                   | 50                              | 8              | -40~125               |
| 74LVC162373A  | 16-bit D-type transparent latch with 30 Ω termination resistors (3-state)              | 1.2 - 3.6           | CMOS/LVTTL             | ±12                          | 3.2                  | 50                              | 16             | -40~125               |
| 74LVC16373A   | 16-bit D-type transparent latch (3-state)  | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 3.0                  | 50                              | 16             | -40~125               |
| 74LVC373A     | Octal D-type transparent latch (3-state)   | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 3.0                  | 50                              | 8              | -40~125               |
| 74LVC573A     | Octal D-type transparent latch (3-state)   | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 3.4                  | 50                              | 8              | -40~125               |
| 74LVCH162373A | 16-bit D-type transparent latch with bus hold and 30 Ω termination resistors (3-state) | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 3.2                  | 50                              | 16             | -40~125               |
| 74LVCH16373A  | 16-bit D-type transparent latch with bus hold (3-state)                                | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 3.0                  | 50                              | 16             | -40~125               |

## Latches/Registered drivers

| Type number | Description  | V <sub>cc</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (pF) | Number of bits | T <sub>amb</sub> (°C) |
|-------------|--|---------------------|------------------------|------------------------------|----------------------|---------------------------------|----------------|-----------------------|
| 74LVT162373 | 16-bit D-type transparent latch with bus hold and 30 Ω termination resistors (3-state) | 2.7 - 3.6           | TTL                    | ±12                          | 2.5                  | 50                              | 16             | -40~85                |
| 74LVT16373A | 16-bit D-type transparent latch with bus hold (3-state)                                | 2.7 - 3.6           | TTL                    | -32 / 64                     | 1.9                  | 50                              | 16             | -40~85                |
| 74LVT573    | Octal D-type transparent latch (3-state)   | 2.7 - 3.6           | TTL                    | -32 / 64                     | 2.7                  | 50                              | 8              | -40~85                |
| HEF40373B   | Octal D-type transparent latch (3-state)   | 3.0 - 15.0          | CMOS                   | -50 / 62                     | 40                   | 50                              | 8              | -40~85                |
| HEF4043B    | Quad R/S latch with set and reset (3-state)  | 3.0 - 15.0          | CMOS                   | ±2.4                         | 25                   | 50                              | 4              | -40~85                |

## Flip-flops

| Type number  | Description  | V <sub>cc</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (pF) | f <sub>max</sub> (MHz) | T <sub>amb</sub> (°C) |
|--------------|--|---------------------|------------------------|------------------------------|----------------------|---------------------------------|------------------------|-----------------------|
| 74AHC1G79    | Single D-type flip-flop; positive-edge trigger                                   | 2.0 - 5.5           | CMOS                   | ±8                           | 3.5                  | 50                              | 90                     | -40~125               |
| 74AHC273     | Octal D-type flip-flop with reset; positive-edge trigger                         | 2.0 - 5.5           | CMOS                   | ±8                           | 4.2                  | 50                              | 165                    | -40~125               |
| 74AHC374     | Octal D-type flip-flop; positive-edge trigger (3-state)                          | 2.0 - 5.5           | CMOS                   | ±8                           | 4.4                  | 50                              | 185                    | -40~125               |
| 74AHC377     | Octal D-type flip-flop with data enable; positive-edge trigger                   | 2.0 - 5.5           | CMOS                   | ±8                           | 3.9                  | 50                              | 175                    | -40~125               |
| 74AHC574     | Octal D-type flip-flop; positive-edge trigger (3-state)                          | 2.0 - 5.5           | CMOS                   | ±8                           | 4.4                  | 50                              | 130                    | -40~125               |
| 74AHC74      | Dual D-type flip-flop with set and reset; positive-edge trigger                  | 2.0 - 5.5           | CMOS                   | ±8                           | 3.7                  | 50                              | 170                    | -40~125               |
| 74AHCT1G79   | Single D-type flip-flop; positive-edge trigger; TTL-enabled                      | 4.5 - 5.5           | TTL                    | ±8                           | 3.5                  | 50                              | 90                     | -40~125               |
| 74AHCT273    | Octal D-type flip-flop with reset; positive-edge trigger; TTL-enabled            | 4.5 - 5.5           | TTL                    | ±8                           | 4.0                  | 50                              | 120                    | -40~125               |
| 74AHCT374    | Octal D-type flip-flop; positive-edge trigger (3-state)                          | 4.5 - 5.5           | TTL                    | ±8                           | 4.3                  | 50                              | 140                    | -40~125               |
| 74AHCT377    | Octal D-type flip-flop with data enable; positive-edge trigger; TTL-enabled      | 4.5 - 5.5           | TTL                    | ±8                           | 4.0                  | 50                              | 140                    | -40~125               |
| 74AHCT574    | Octal D-type flip-flop; positive-edge trigger; TTL-enabled (3-state)             | 4.5 - 5.5           | TTL                    | ±8                           | 4.4                  | 50                              | 130                    | -40~125               |
| 74AHCT74     | Dual D-type flip-flop with set and reset; positive-edge trigger; TTL-enabled     | 4.5 - 5.5           | TTL                    | ±8                           | 3.3                  | 50                              | 160                    | -40~125               |
| 74ALVC374    | Octal D-type flip-flop; positive-edge trigger (3-state)                          | 1.65 - 3.6          | TTL                    | ±24                          | 2.5                  | 50                              | 300                    | -40~85                |
| 74ALVC574    | Octal D-type flip-flop; positive-edge trigger (3-state)                          | 1.65 - 3.6          | TTL                    | ±24                          | 2.5                  | 50                              | 300                    | -40~85                |
| 74ALVC74     | Dual D-type flip-flop with set and reset; positive-edge trigger                  | 1.65 - 3.6          | TTL                    | ±24                          | 2.3                  | 50                              | 425                    | -40~85                |
| 74ALVCH16374 | 16-bit D-type flip-flop with bus hold; positive-edge trigger (3-state)           | 1.2 - 3.6           | TTL                    | ±24                          | 2.3                  | 50                              | 350                    | -40~85                |
| 74ALVCH16821 | 20-bit D-type flip-flop; positive-edge trigger (3-state)                         | 2.3 - 3.6           | TTL                    | ±24                          | 2.5                  | 50                              | 350                    | -40~85                |
| 74ALVCH16823 | 18-bit D-type flip-flop with bus hold; positive-edge trigger (3-state)           | 1.2 - 3.6           | TTL                    | ±24                          | 2.1                  | 50                              | 350                    | -40~85                |
| 74ALVT162821 | 20-bit D-type flip-flop; positive-edge trigger (3-state)                         | 2.3 - 3.6           | TTL                    | ±12                          | 3.2                  | 50                              | 150                    | -40~85                |
| 74ALVT162823 | 18-bit buffer/line driver with bus hold and 30 Ω termination resistors (3-state) | 2.3 - 3.6           | TTL                    | ±12                          | 3.0                  | 50                              | 150                    | -40~85                |
| 74ALVT16821  | 20-bit D-type flip-flop; positive-edge trigger (3-state)                         | 2.3 - 3.6           | TTL                    | -32 / 64                     | 1.8                  | 50                              | 150                    | -40~85                |
| 74ALVT16823  | 18-bit D-type flip-flop with bus hold; positive-edge trigger (3-state)           | 2.3 - 3.6           | TTL                    | -32 / 64                     | 1.9                  | 50                              | 250                    | -40~85                |
| 74AUP1G175   | Single D flip-flop with reset; positive-edge trigger                             | 1.1 - 3.6           | CMOS                   | ±1.9                         | 7.4                  | 30                              | 70                     | -40~125               |
| 74AUP1G374   | Single D-type flip-flop; positive-edge trigger (3-state)                         | 1.1 - 3.6           | CMOS                   | ±1.9                         | 7.9                  | 30                              | 400                    | -40~125               |
| 74AUP1G74    | Single D-type flip-flop with set and reset; positive-edge trigger                | 1.1 - 3.6           | CMOS                   | ±1.9                         | 9.2                  | 30                              | 400                    | -40~125               |
| 74AUP1G79    | Single D-type flip-flop; positive-edge trigger                                   | 1.1 - 3.6           | CMOS                   | ±1.9                         | 9.1                  | 30                              | 400                    | -40~125               |
| 74AUP1G80    | Single D-type flip-flop; positive-edge trigger                                   | 1.1 - 3.6           | CMOS                   | ±1.9                         | 9.1                  | 30                              | 400                    | -40~125               |
| 74AUP2G79    | Dual D-type flip-flop; positive-edge trigger                                     | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.5                  | 30                              | 400                    | -40~125               |
| 74AUP2G80    | Dual D-type flip-flop; positive-edge trigger                                     | 1.1 - 3.6           | CMOS                   | ±1.9                         | 9.1                  | 30                              | 400                    | -40~125               |
| 74AVC16374   | 16-bit D-type flip-flop; positive-edge trigger (3-state)                         | 1.2 - 3.6           | CMOS                   | ±12                          | 1.5                  | 30                              | 350                    | -40~85                |
| 74HC107      | Dual JK-type flip-flop with reset; negative-edge trigger                         | 2.0 - 6.0           | CMOS                   | ±5.2                         | 16                   | 50                              | 78                     | -40~125               |
| 74HC109      | Dual JK-type flip-flop with set and reset; positive-edge trigger                 | 2.0 - 6.0           | CMOS                   | ±5.2                         | 15                   | 50                              | 75                     | -40~125               |
| 74HC112      | Dual JK-type flip-flop with set and reset; negative-edge trigger                 | 2.0 - 6.0           | CMOS                   | ±5.2                         | 15                   | 50                              | 66                     | -40~125               |
| 74HC173      | Quad D-type flip-flop; positive-edge trigger (3-state)                           | 2.0 - 6.0           | CMOS                   | ±7.8                         | 17                   | 50                              | 88                     | -40~125               |
| 74HC174      | Hex D-type flip-flop with reset; positive-edge trigger                           | 2.0 - 6.0           | CMOS                   | ±5.2                         | 17                   | 50                              | 99                     | -40~125               |
| 74HC175      | Quad D-type flip-flop with reset; positive-edge trigger                          | 2.0 - 6.0           | CMOS                   | ±5.2                         | 17                   | 50                              | 83                     | -40~125               |
| 74HC273      | Octal D-type flip-flop with reset; positive-edge trigger                         | 2.0 - 6.0           | CMOS                   | ±5.2                         | 15                   | 50                              | 122                    | -40~125               |



## Flip-Flops

| Type number   | Description   | V <sub>CC</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (pF) | f <sub>max</sub> (MHz) | T <sub>amb</sub> (°C) |
|---------------|---|---------------------|------------------------|------------------------------|----------------------|---------------------------------|------------------------|-----------------------|
| 74HC374       | Octal D-type flip-flop; positive-edge trigger (3-state)   | 2.0 - 6.0           | CMOS                   | ±7.8                         | 14                   | 50                              | 83                     | -40~125               |
| 74HC377       | Octal D-type flip-flop with data enable; positive-edge trigger  | 2.0 - 6.0           | CMOS                   | ±7.8                         | 13                   | 50                              | 83                     | -40~125               |
| 74HC574       | Octal D-type flip-flop; positive-edge trigger (3-state)   | 2.0 - 6.0           | CMOS                   | ±7.8                         | 14                   | 50                              | 133                    | -40~125               |
| 74HC73        | Dual JK-type flip-flop with reset; negative-edge trigger  | 2.0 - 6.0           | CMOS                   | ±5.2                         | 16                   | 50                              | 77                     | -40~125               |
| 74HC74        | Dual D-type flip-flop with set and reset; positive-edge trigger                                       | 2.0 - 6.0           | CMOS                   | ±5.2                         | 14                   | 50                              | 82                     | -40~125               |
| 74HCT107      | Dual JK-type flip-flop with reset; negative-edge trigger; TTL-enabled                                 | 4.5 - 5.5           | TTL                    | ±4                           | 16                   | 50                              | 73                     | -40~125               |
| 74HCT109      | Dual JK-type flip-flop with set and reset; positive-edge trigger; TTL-enabled                         | 4.5 - 5.5           | TTL                    | ±4                           | 17                   | 50                              | 61                     | -40~125               |
| 74HCT112      | Dual JK-type flip-flop with set and reset; negative-edge trigger; TTL-enabled                         | 4.5 - 5.5           | TTL                    | ±4                           | 19                   | 50                              | 70                     | -40~125               |
| 74HCT173      | Quad D-type flip-flop; positive-edge trigger; TTL-enabled (3-state)                                   | 4.5 - 5.5           | TTL                    | ±6                           | 17                   | 50                              | 88                     | -40~125               |
| 74HCT174      | Hex D-type flip-flop with reset; positive-edge trigger; TTL-enabled                                   | 4.5 - 5.5           | TTL                    | ±4                           | 18                   | 50                              | 69                     | -40~125               |
| 74HCT175      | Quad D-type flip-flop with reset; positive-edge trigger; TTL-enabled                                  | 4.5 - 5.5           | TTL                    | ±4                           | 16                   | 50                              | 54                     | -40~125               |
| 74HCT273      | Octal D-type flip-flop with reset; positive-edge trigger; TTL-enabled                                 | 4.5 - 5.5           | TTL                    | ±4                           | 15                   | 50                              | 36                     | -40~125               |
| 74HCT374      | Octal D-type flip-flop; positive-edge trigger; TTL-enabled (3-state)                                  | 4.5 - 5.5           | TTL                    | ±6                           | 13                   | 50                              | 48                     | -40~125               |
| 74HCT377      | Octal D-type flip-flop with data enable; positive-edge trigger; TTL-enabled                           | 4.5 - 5.5           | TTL                    | ±6                           | 14                   | 50                              | 53                     | -40~125               |
| 74HCT574      | Octal D-type flip-flop; positive-edge trigger; TTL-enabled (3-state)                                  | 4.5 - 5.5           | TTL                    | ±6                           | 15                   | 50                              | 76                     | -40~125               |
| 74HCT74       | Dual D-type flip-flop with set and reset; positive-edge trigger; TTL-enabled                          | 4.5 - 5.5           | TTL                    | ±4                           | 15                   | 50                              | 59                     | -40~125               |
| 74LV74        | Dual D-type flip-flop with set and reset; positive-edge trigger                                       | 1.0 - 5.5           | TTL                    | ±12                          | 11                   | 50                              | 75                     | -40~125               |
| 74LVC16374A   | 16-bit D-type flip-flop; positive-edge trigger (3-state)  | 1.2 - 3.6           | CMOS/<br>LVTTTL        | ±24                          | 3.8                  | 50                              | 150                    | -40~125               |
| 74LVC1G175    | Single D flip-flop with reset; positive-edge trigger  | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 3.1                  | 50                              | 300                    | -40~125               |
| 74LVC1G74     | Single D-type flip-flop with set and reset; positive-edge trigger                                     | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 3.5                  | 50                              | 280                    | -40~125               |
| 74LVC1G79     | Single D-type flip-flop; positive-edge trigger  | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 2.2                  | 50                              | 450                    | -40~125               |
| 74LVC1G80     | Single D-type flip-flop; positive-edge trigger  | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 2.4                  | 50                              | 450                    | -40~125               |
| 74LVC273      | Octal D-type flip-flop with reset; positive-edge trigger  | 1.2 - 3.6           | CMOS/<br>LVTTTL        | ±24                          | 6.0                  | 50                              | 230                    | -40~125               |
| 74LVC2G74     | Single D-type flip-flop with set and reset; positive-edge trigger                                     | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 3.5                  | 50                              | 280                    | -40~125               |
| 74LVC374A     | Octal D-type flip-flop; positive-edge trigger (3-state)   | 1.2 - 3.6           | CMOS/<br>LVTTTL        | ±24                          | 2.7                  | 50                              | 100                    | -40~125               |
| 74LVC377      | Octal D-type flip-flop with data enable; positive-edge trigger  | 1.2 - 3.6           | CMOS/<br>LVTTTL        | ±24                          | 6.0                  | 50                              | 230                    | -40~125               |
| 74LVC574A     | Octal D-type flip-flop; positive-edge trigger (3-state)   | 1.2 - 3.6           | CMOS/<br>LVTTTL        | ±24                          | 3.2                  | 50                              | 150                    | -40~125               |
| 74LVC74A      | Dual D-type flip-flop with set and reset; positive-edge trigger                                       | 1.2 - 3.6           | CMOS/<br>LVTTTL        | ±24                          | 2.5                  | 50                              | 250                    | -40~125               |
| 74LVC823A     | 9-bit D-type flip-flop; positive-edge trigger (3-state)   | 1.2 - 3.6           | CMOS/<br>LVTTTL        | ±24                          | 5.4                  | 50                              | 150                    | -40~125               |
| 74LVCH162374A | 16-bit D-type flip-flop with bus hold and 30 Ω termination resistors; positive-edge trigger (3-state) | 1.2 - 3.6           | CMOS/<br>LVTTTL        | ±24                          | 3.8                  | 50                              | 150                    | -40~125               |
| 74LVCH16374A  | 16-bit D-type flip-flop with bus hold; positive-edge trigger (3-state)                                | 1.2 - 3.6           | CMOS/<br>LVTTTL        | ±24                          | 3.8                  | 50                              | 150                    | -40~125               |
| 74LVT162374   | 16-bit D-type flip-flop with bus hold and 30 Ω termination resistors; positive-edge trigger (3-state) | 2.7 - 3.6           | TTL                    | ±12                          | 3.0                  | 50                              | 150                    | -40~85                |
| 74LVT16374A   | 16-bit D-type flip-flop with bus hold; positive-edge trigger (3-state)                                | 2.7 - 3.6           | TTL                    | -32 / 64                     | 3.0                  | 50                              | 150                    | -40~85                |
| 74LVTH16374A  | 16-bit D-type flip-flop with bus hold; positive-edge trigger (3-state)                                | 2.7 - 3.6           | TTL                    | -32 / 64                     | 3.0                  | 50                              | 150                    | -40~85                |
| HEF4013B      | Dual D-type flip-flop with set and reset; positive-edge trigger                                       | 3.0 - 15.0          | CMOS                   | ±2.4                         | 30                   | 50                              | 40                     | -40~85                |
| HEF40175B     | Quad D-type flip-flop with reset; positive-edge trigger   | 3.0 - 15.0          | CMOS                   | ±2.4                         | 25                   | 50                              | 45                     | -40~85                |
| HEF4027B      | Dual JK-type flip-flop  | 3.0 - 15.0          | CMOS                   | ±2.4                         | 30                   | 50                              | 30                     | -40~85                |

## Synchronous interface logic

### FIFO registers

| Type number | Description                   | V <sub>cc</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (pF) | f <sub>max</sub> (MHz) | T <sub>amb</sub> (°C) |
|-------------|-------------------------------|---------------------|------------------------|------------------------------|----------------------|---------------------------------|------------------------|-----------------------|
| 74HC40105   | 4-bit x 16-word FIFO register | 2.0 - 6.0           | CMOS                   | ±5.2                         | 15                   | 50                              | 30                     | -40~125               |

### Counters/frequency dividers

| Type number | Description   | V <sub>cc</sub> (V) | Output drive capability (mA) | Logic switching levels | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (pF) | f <sub>max</sub> (MHz) | T <sub>amb</sub> (°C) |
|-------------|---|---------------------|------------------------------|------------------------|----------------------|---------------------------------|------------------------|-----------------------|
| 74AHC1G4210 | 10-stage divider and oscillator   | 2.0 - 5.5           | ±5.2                         | CMOS                   | 17                   | 15                              | 125                    | -40~125               |
| 74AHC1G4212 | 12-stage divider and oscillator   | 2.0 - 5.5           | ±5.2                         | CMOS                   | 20                   | 15                              | 125                    | -40~125               |
| 74AHC1G4214 | 14-stage divider and oscillator   | 2.0 - 5.5           | ±5.2                         | CMOS                   | 23                   | 15                              | 125                    | -40~125               |
| 74HC160     | Presetable synchronous BCD decade counter; asynchronous reset                             | 2.0 - 6.0           | ±5.2                         | CMOS                   | 18                   | 50                              | 55                     | -40~125               |
| 74HC161     | Presetable synchronous 4-bit binary counter; asynchronous reset                           | 2.0 - 6.0           | ±5.2                         | CMOS                   | 19                   | 50                              | 48                     | -40~125               |
| 74HCT161    | Presetable synchronous 4-bit binary counter; asynchronous reset; TTL-enabled              | 4.5 - 5.5           | ±4.0                         | TTL                    | 20                   | 50                              | 41                     | -40~125               |
| 74HCT163    | Presetable synchronous 4-bit binary counter; synchronous reset; TTL-enabled               | 4.5 - 5.5           | ±4.0                         | TTL                    | 20                   | 50                              | 50                     | -40~125               |
| 74HC191     | Presetable synchronous 4-bit binary up/down counter                                       | 2.0 - 6.0           | ±5.2                         | CMOS                   | 22                   | 50                              | 36                     | -40~125               |
| 74HC193     | Presetable synchronous 4-bit binary up/down counter; separate up/down clocks              | 2.0 - 6.0           | ±5.2                         | CMOS                   | 20                   | 50                              | 49                     | -40~125               |
| 74HCT193    | Presetable synchronous 4-bit binary up/down counter; separate up/down clocks; TTL-enabled | 4.5 - 5.5           | ±4.0                         | TTL                    | 20                   | 50                              | 43                     | -40~125               |
| 74HC390     | Dual decade ripple counter  | 2.0 - 6.0           | ±5.2                         | CMOS                   | 14                   | 50                              | 60                     | -40~125               |
| 74HCT390    | Dual decade ripple counter; TTL-enabled   | 4.5 - 5.5           | ±4.0                         | TTL                    | 18                   | 50                              | 55                     | -40~125               |
| 74HC393     | Dual 4-bit binary ripple counter  | 2.0 - 6.0           | ±5.2                         | CMOS                   | 12                   | 50                              | 107                    | -40~125               |
| 74HCT393    | Dual 4-bit binary ripple counter; TTL-enabled   | 4.5 - 5.5           | ±4.0                         | TTL                    | 20                   | 50                              | 53                     | -40~125               |
| 74HC4017    | Johnson decade counter with 10 decoded outputs  | 2.0 - 6.0           | ±5.2                         | CMOS                   | 18                   | 50                              | 77                     | -40~125               |
| 74HCT4017   | Johnson decade counter with 10 decoded outputs; TTL-enabled                               | 4.5 - 5.5           | ±4.0                         | TTL                    | 21                   | 50                              | 67                     | -40~125               |
| 74HC4020    | 14-stage binary ripple counter  | 2.0 - 6.0           | ±5.2                         | CMOS                   | 11                   | 50                              | 52                     | -40~125               |
| 74HCT4020   | 14-stage binary ripple counter; TTL-enabled   | 4.5 - 5.5           | ±4.0                         | TTL                    | 15                   | 50                              | 52                     | -40~125               |
| 74HC4040    | 12-stage binary ripple counter  | 2.0 - 6.0           | ±5.2                         | CMOS                   | 14                   | 50                              | 90                     | -40~125               |
| 74HCT4040   | 12-stage binary ripple counter; TTL-enabled   | 4.5 - 5.5           | ±4.0                         | TTL                    | 16                   | 50                              | 79                     | -40~125               |
| 74HC4060    | 14-stage binary ripple counter with oscillator  | 2.0 - 6.0           | ±5.2                         | CMOS                   | 31                   | 50                              | 95                     | -40~125               |
| 74HCT4060   | 14-stage binary ripple counter with oscillator; TTL-enabled                               | 4.5 - 5.5           | ±4.0                         | TTL                    | 31                   | 50                              | 88                     | -40~125               |
| 74HC4520    | Dual 4-bit synchronous binary counter   | 2.0 - 6.0           | ±5.2                         | CMOS                   | 24                   | 50                              | 64                     | -40~125               |
| 74HCT4520   | Dual 4-bit synchronous binary counter; TTL-enabled  | 4.5 - 5.5           | ±4.0                         | TTL                    | 24                   | 50                              | 64                     | -40~125               |
| 74HCS555    | Programmable delay timer with oscillator  | 2.0 - 6.0           | -0.8                         | CMOS                   | 89                   | 50                              | 24                     | -40~125               |
| 74HC6323    | Programmable ripple counter with oscillator (3-state)                                     | 2.0 - 6.0           | ±7.8                         | CMOS                   | 17                   | 50                              | 100                    | -40~125               |
| 74HCT6323   | Programmable ripple counter with oscillator (3-state); TTL-enabled                        | 4.5 - 5.5           | ±4.0                         | TTL                    | 17                   | 50                              | 85                     | -40~125               |
| 74HC40103   | 8-bit synchronous binary down counter   | 2.0 - 6.0           | ±5.2                         | CMOS                   | 15                   | 50                              | 14                     | -40~125               |
| 74HC4024    | 7-stage binary ripple counter   | 2.0 - 6.0           | ±5.2                         | CMOS                   | 14                   | 50                              | 90                     | -40~125               |
| 74HC590     | 8-bit binary counter with output register (3-state)                                       | 2.0 - 6.0           | ±5.2                         | CMOS                   | 19                   | 50                              | 61                     | -40~125               |
| 74LV393     | Dual 4-bit binary ripple counter  | 1.0 - 3.6           | ±6                           | TTL                    | 12                   | 50                              | 90                     | -40~125               |
| 74LV4020    | 14-stage binary ripple counter  | 1.0 - 5.5           | ±6                           | TTL                    | 16                   | 50                              | 100                    | -40~125               |
| 74LV4060    | 14-stage binary ripple counter with oscillator  | 1.0 - 5.5           | ±6                           | TTL                    | 29                   | 50                              | 100                    | -40~125               |

## Counters/frequency dividers

| Type number | Description   | V <sub>cc</sub> (V) | Output drive capability (mA) | Logic switching levels | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (pF) | f <sub>max</sub> (MHz) | T <sub>amb</sub> (°C) |
|-------------|---|---------------------|------------------------------|------------------------|----------------------|---------------------------------|------------------------|-----------------------|
| 74LVC161    | Presetable synchronous 4-bit binary counter; asynchronous reset | 1.2 - 3.6           | ±24                          | CMOS/LVTTL             | 4.9                  | 50                              | 200                    | -40~125               |
| 74LVC163    | Presetable synchronous 4-bit binary counter; synchronous reset  | 1.2 - 3.6           | ±24                          | CMOS/LVTTL             | 4.9                  | 50                              | 200                    | -40~125               |
| HEF4017B    | Johnson decade counter with 10 decoded outputs                  | 3.0 - 15            | ±2.4                         | CMOS                   | 40                   | 50                              | 30                     | -40~85                |
| HEF4020B    | 14-stage binary ripple counter                                  | 3.0 - 15            | ±2.4                         | CMOS                   | 35                   | 50                              | 35                     | -40~85                |
| HEF4024B    | 7-stage binary ripple counter                                   | 3.0 - 15            | ±2.4                         | CMOS                   | 30                   | 50                              | 35                     | -40~85                |
| HEF4040B    | 12-stage binary ripple counter                                  | 3.0 - 15            | ±2.4                         | CMOS                   | 35                   | 50                              | 50                     | -40~85                |
| HEF4060B    | 14-stage binary ripple counter with oscillator                  | 3.0 - 15            | ±2.4                         | CMOS                   | 50                   | 50                              | 30                     | -40~85                |
| HEF4518B    | Dual BCD counter  | 3.0 - 15            | ±2.4                         | CMOS                   | 40                   | 50                              | 40                     | -40~85                |
| HEF4520B    | Dual 4-bit synchronous binary counter                           | 3.0 - 15            | ±2.4                         | CMOS                   | 15                   | 50                              | 40                     | -40~85                |
| HEF4521B    | 24-stage frequency divider and oscillator                       | 3.0 - 15            | ±2.4                         | CMOS                   | 220                  | 50                              | 35                     | -40~85                |
| HEF4541B    | Programmable timer  | 3.0 - 15            | -4/2.7                       | CMOS                   | 38                   | 50                              | 150                    | -40~85                |

## Multivibrators

| Type number | Description   | V <sub>cc</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (pF) | T <sub>amb</sub> (°C) |
|-------------|---|---------------------|------------------------|------------------------------|----------------------|---------------------------------|-----------------------|
| 74AHC123A   | Dual retriggerable monostable multivibrator with reset                  | 2.0 - 5.5           | CMOS                   | ±8                           | 5.1                  | 50                              | -40~125               |
| 74AHCT123A  | Dual retriggerable monostable multivibrator with reset; TTL-enabled     | 4.5 - 5.5           | TTL                    | ±8                           | 5.0                  | 50                              | -40~125               |
| 74HC123     | Dual retriggerable monostable multivibrator with reset                  | 2.0 - 6.0           | CMOS                   | ±7.8                         | 9.0                  | 50                              | -40~125               |
| 74HCT123    | Dual retriggerable monostable multivibrator with reset; TTL-enabled     | 4.5 - 5.5           | TTL                    | ±4                           | 26                   | 50                              | -40~125               |
| 74HCT221    | dual non-retriggerable monostable multivibrator with reset; TTL-enabled | 4.5 - 5.5           | TTL                    | ±4                           | 32                   | 50                              | -40~125               |
| 74HC423     | Dual retriggerable monostable multivibrator with reset                  | 2.0 - 6.0           | CMOS                   | ±5.2                         | 23                   | 50                              | -40~125               |
| 74HCT423    | Dual retriggerable monostable multivibrator with reset; TTL-enabled     | 4.5 - 5.5           | TTL                    | ±4                           | 26                   | 50                              | -40~125               |
| 74HC4538    | Dual retriggerable precision monostable multivibrator                   | 2.0 - 6.0           | CMOS                   | ±5.2                         | 27                   | 50                              | -40~125               |
| 74HCT4538   | Dual retriggerable precision monostable multivibrator; TTL-enabled      | 4.5 - 5.5           | TTL                    | ±4                           | 30                   | 50                              | -40~125               |
| 74LV123     | Dual retriggerable monostable multivibrator with reset                  | 1.0 - 5.5           | TTL                    | ±12                          | 20                   | 50                              | -40~125               |
| 74LVC1G123  | Single retriggerable monostable multivibrator                           | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 3.5                  | 50                              | -40~125               |
| HEF4047B    | Monostable/astable multivibrator  | 3.0 - 15            | CMOS                   | ±2.4                         | 50                   | 50                              | -40~85                |
| HEF4528B    | Dual retriggerable monostable multivibrator with reset                  | 3.0 - 15            | CMOS                   | ±2.4                         | 40                   | 50                              | -40~85                |
| HEF4538B    | Dual retriggerable precision monostable multivibrator                   | 3.0 - 15            | CMOS                   | ±2.4                         | 60                   | 50                              | -40~85                |

## Phase-locked loops

| Type number | Description  | V <sub>cc</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (pF) | F <sub>max</sub> (MHz) | T <sub>amb</sub> (°C) |
|-------------|--|---------------------|------------------------|------------------------------|----------------------|---------------------------------|------------------------|-----------------------|
| 74HC4046A   | Phase-locked loop with VCO                                 | 3.0 - 6.0           | CMOS                   | ±5.2                         | 18                   | 50                              | 21                     | -40~125               |
| 74HCT4046A  | Phase-locked loop with VCO; TTL-enabled                    | 4.5 - 5.5           | TTL                    | ±4                           | 23                   | 50                              | 19                     | -40~125               |
| 74HCT9046A  | Phase-locked loop with bandgap controlled VCO; TTL-enabled | 4.5 - 5.5           | TTL                    | ±4                           | 23                   | 50                              | 19                     | -40~125               |
| HEF4046B    | Phase-locked loop with VCO                                 | 3.0 - 15.0          | CMOS                   | ±2.4                         |                      | 50                              | 2.7                    | -40~125               |

## AND Gates

Types in **bold** represent new products

| Type number      | Description  | V <sub>CC</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (typ) (pF) | f <sub>max</sub> (MHz) | Number of bits | T <sub>amb</sub> (°C) |
|------------------|--|---------------------|------------------------|------------------------------|----------------------|---------------------------------------|------------------------|----------------|-----------------------|
| 74ABT08          | Quad 2-input AND gate                              | 4.5 - 5.5           | TTL                    | -15 / 20                     | 2.4                  | 50                                    | 100                    | 4              | -40~85                |
| 74AHC08          | Quad 2-input AND gate                              | 2.0 - 5.5           | CMOS                   | ±8                           | 3.5                  | 50                                    | 60                     | 4              | -40~125               |
| 74AHC1G08        | Single 2-input AND gate                            | 2.0 - 5.5           | CMOS                   | ±8                           | 3.2                  | 50                                    | 60                     | 1              | -40~125               |
| 74AHC1G09        | Single 2-input AND gate; open drain                | 2.0 - 5.5           | CMOS                   | ±8                           | 3.2                  | 50                                    | 60                     | 1              | -40~125               |
| 74AHC2G08        | Dual 2-input AND gate                              | 2.0 - 5.5           | CMOS                   | ±8                           | 3.2                  | 50                                    | 60                     | 2              | -40~125               |
| 74AHCT08         | Quad 2-input AND gate; TTL-enabled                 | 4.5 - 5.5           | TTL                    | ±8                           | 5.0                  | 50                                    | 60                     | 4              | -40~125               |
| 74AHCT1G08       | Single 2-input AND gate; TTL-enabled               | 4.5 - 5.5           | TTL                    | ±8                           | 3.6                  | 50                                    | 60                     | 1              | -40~125               |
| 74AHCT2G08       | Dual 2-Input AND gate; TTL-enabled                 | 4.5 - 5.5           | TTL                    | ±8                           | 3.6                  | 50                                    | 60                     | 2              | -40~125               |
| 74ALVC08         | Quad 2-input AND gate                              | 1.65 - 3.6          | CMOS/<br>LVTTTL        | ±24                          | 2.0                  | 50                                    | 145                    | 4              | -40~85                |
| 74AUP1G08        | Single 2-input AND gate                            | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.2                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP1G09        | Single 2-input AND gate; open drain                | 1.1 - 3.6           | CMOS                   | 1.9                          | 8.5                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP1G11        | Single 3-input AND gate                            | 1.1 - 3.6           | CMOS                   | ±1.9                         | 6.9                  | 30                                    | 70                     | 1              | -40~125               |
| <b>74AUP1T08</b> | Single supply 2-input voltage-translating AND gate | 2.3 - 3.6           | CMOS                   | ±4                           | 3.6                  | 15                                    | 70                     | 1              | -40~125               |
| 74AUP2G08        | Dual 2-input AND gate                              | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.2                  | 30                                    | 70                     | 2              | -40~125               |
| 74AXP1G08        | Single 2-input AND gate                            | 0.7 - 2.75          | CMOS                   | ±4.5                         | 2.6                  | 5                                     | 70                     | 1              | -40~85                |
| 74AXP1G09        | Single 2-input AND gate with open-drain output     | 0.7 - 2.75          | CMOS                   | ±4.5                         | 2.6                  | 5                                     | 70                     | 1              | -40~85                |
| 74AXP1G11        | Single 3-input AND gate                            | 0.7 - 2.75          | CMOS                   | ±4.5                         | 2.6                  | 5                                     | 70                     | 1              | -40~85                |
| 74HC08           | Quad 2-input AND gate                              | 2.0 - 6.0           | CMOS                   | ±5.2                         | 7.0                  | 50                                    | 36                     | 4              | -40~125               |
| 74HC11           | Triple 3-input AND gate                            | 2.0 - 6.0           | CMOS                   | ±5.2                         | 10                   | 50                                    | 36                     | 3              | -40~125               |
| 74HC1G08         | Single 2-input AND gate                            | 2.0 - 6.0           | CMOS                   | ±5.2                         | 7.0                  | 50                                    | 36                     | 1              | -40~125               |
| 74HC21           | Dual 4-input AND gate                              | 2.0 - 6.0           | CMOS                   | ±5.2                         | 10                   | 50                                    | 36                     | 2              | -40~125               |
| 74HC2G08         | Dual 2-input AND gate                              | 2.0 - 6.0           | CMOS                   | ±5.2                         | 9.0                  | 50                                    | 36                     | 2              | -40~125               |
| 74HCT08          | Quad 2-input AND gate; TTL-enabled                 | 4.5 - 5.5           | TTL                    | ±4                           | 11                   | 50                                    | 36                     | 4              | -40~125               |
| 74HCT11          | Triple 3-input AND gate                            | 4.5 - 5.5           | TTL                    | ±4                           | 11                   | 50                                    | 36                     | 3              | -40~125               |
| 74HCT1G08        | Single 2-input AND gate; TTL-enabled               | 4.5 - 5.5           | TTL                    | ±2                           | 11                   | 50                                    | 36                     | 1              | -40~125               |
| 74HCT2G08        | Dual 2-Input AND gate; TTL-enabled                 | 4.5 - 5.5           | TTL                    | ±4                           | 14                   | 50                                    | 36                     | 2              | -40~125               |
| 74LV08           | Quad 2-input AND gate                              | 1.0 - 5.5           | TTL                    | ±12                          | 7.0                  | 50                                    | 30                     | 4              | -40~125               |
| <b>74LV1T08</b>  | Single supply 2-input translating AND gate         | 1.6 - 5.5           | CMOS                   | ±8                           | 13.4                 | 15                                    | 60                     | 1              | -40~125               |
| 74LVC08A         | Quad 2-input AND gate                              | 1.2 - 3.6           | CMOS/<br>LVTTTL        | ±24                          | 2.1                  | 50                                    | 150                    | 4              | -40~125               |
| 74LVC11          | Triple 3-input AND gate                            | 1.2 - 3.6           | CMOS/<br>LVTTTL        | ±24                          | 3.7                  | 50                                    | 150                    | 3              | -40~125               |
| 74LVC1G08        | Single 2-input AND gate                            | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±24                          | 2.1                  | 50                                    | 150                    | 1              | -40~125               |
| 74LVC1G11        | Single 3-input AND gate                            | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±24                          | 2.6                  | 50                                    | 150                    | 1              | -40~125               |
| 74LVC2G08        | Dual 2-input AND gate                              | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±24                          | 2.1                  | 50                                    | 150                    | 2              | -40~125               |
| 74LVT08          | Quad 2-input AND gate                              | 2.7 - 3.6           | TTL                    | -20 / 32                     | 3.4                  | 50                                    | 150                    | 4              | -40~85                |
| 74VHC08          | Quad 2-input AND gate                              | 2.0 - 5.5           | CMOS                   | ±8                           | 3.5                  | 50                                    | 60                     | 4              | -40~125               |
| 74VHCT08         | Quad 2-input AND gate; TTL-enabled                 | 4.5 - 5.5           | TTL                    | ±8                           | 5.0                  | 50                                    | 60                     | 4              | -40~125               |
| HEF4073B         | Triple 3-input AND gate                            | 3.0 - 15            | CMOS                   | ±2.4                         | 20                   | 50                                    | 10                     | 3              | -40~85                |
| HEF4081B         | Quad 2-input AND gate                              | 3.0 - 15            | CMOS                   | ±2.4                         | 20                   | 50                                    | 10                     | 4              | -40~85                |
| HEF4082B         | Dual 4-input AND gate                              | 3.0 - 15            | CMOS                   | ±2.4                         | 25                   | 50                                    | 10                     | 2              | -40~85                |
| XC7SET08         | Single 2-input AND gate; TTL-enabled               | 4.5 - 5.5           | TTL                    | ±8                           | 3.6                  | 50                                    | 60                     | 1              | -40~125               |
| XC7SH08          | Single 2-input AND gate                            | 2.0 - 5.5           | CMOS                   | ±8                           | 3.2                  | 50                                    | 60                     | 1              | -40~125               |

## Combination Gates

| Type number | Description  | V <sub>CC</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (typ) (pF) | f <sub>max</sub> (MHz) | Number of bits | T <sub>amb</sub> (°C) |
|-------------|--|---------------------|------------------------|------------------------------|----------------------|---------------------------------------|------------------------|----------------|-----------------------|
| 74AUP1G0832 | Single 3-input AND-OR gate                                 | 1.1 - 3.6           | CMOS                   | ±1.9                         | 6.7                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP1G3208 | Single 3-input OR-AND gate                                 | 1.1 - 3.6           | CMOS                   | ±1.9                         | 7.4                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP1G885  | Dual function gate   | 1.1 - 3.6           | CMOS                   | ±1.9                         | 7.6                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP1Z04   | Crystal driver with enable and internal resistor           | 1.1 - 3.6           | CMOS                   | ±1.9                         | 5.6                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP1Z125  | Crystal driver with enable and internal resistor (3-state) | 1.1 - 3.6           | CMOS                   | ±1.9                         | 4.7                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP2G0604 | Inverter with open drain and inverter                      | 1.1 - 3.6           | CMOS                   | ±1.9                         | 4.0                  | 30                                    | 70                     | 2              | -40~125               |
| 74AUP2G3404 | Buffer and inverter  | 1.1 - 3.6           | CMOS                   | ±1.9                         | 4.0                  | 30                                    | 70                     | 2              | -40~125               |
| 74AUP2G3407 | Buffer and buffer with open drain                          | 1.1 - 3.6           | CMOS                   | ±1.9                         | 4.1                  | 30                                    | 70                     | 2              | -40~125               |
| 74AUP2T1326 | Dual supply buffer/line driver; 3-state                    | 1.1 - 3.6           | CMOS                   | ±4                           | 3.8                  | 15                                    | 70                     | 2              | -40~125               |
| 74AUP3G0434 | Dual inverter and single buffer                            | 1.1 - 3.6           | CMOS                   | ±1.9                         | 4.0                  | 30                                    | 70                     | 3              | -40~125               |
| 74AUP3G3404 | Dual buffer and single inverter                            | 1.1 - 3.6           | CMOS                   | ±1.9                         | 4.0                  | 30                                    | 70                     | 3              | -40~125               |
| 74LVC1GX04  | Crystal driver   | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±24                          | 2.8                  | 50                                    | 150                    | 1              | -40~125               |
| HEF4007UB   | Dual complementary pair and inverter                       | 3.0 - 15            | CMOS                   | ±3.4                         | 15                   | 50                                    | 10                     | 2              | -40~85                |

## Configurable Gates

| Type number | Description                                      | V <sub>CC</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (typ) (pF) | f <sub>max</sub> (MHz) | Number of bits | T <sub>amb</sub> (°C) |
|-------------|--|---------------------|------------------------|------------------------------|----------------------|---------------------------------------|------------------------|----------------|-----------------------|
| 74AUP1G57   | Configurable gate; Schmitt-trigger               | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.7                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP1G58   | Configurable gate; Schmitt-trigger               | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.7                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP1G97   | Configurable gate; Schmitt-trigger               | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.7                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP1G98   | Configurable gate; Schmitt-trigger               | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.9                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP1G3208 | Configurable multiple function gate              | 0.8 - 3.6           | CMOS                   | ±4                           | 6.6                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP1T57   | Configurable gate with voltage-level translation | 2.3 - 3.6           | CMOS                   | ±4                           | 3.8                  | 15                                    | 70                     | 1              | -40~125               |
| 74AUP1T58   | Configurable gate with voltage-level translation | 2.3 - 3.6           | CMOS                   | ±4                           | 3.8                  | 15                                    | 70                     | 1              | -40~125               |
| 74AUP1T97   | Configurable gate with voltage-level translation | 2.3 - 3.6           | CMOS                   | ±4                           | 3.8                  | 15                                    | 70                     | 1              | -40~125               |
| 74AUP1T98   | Configurable gate with voltage-level translation | 2.3 - 3.6           | CMOS                   | ±4                           | 3.8                  | 15                                    | 70                     | 1              | -40~125               |
| 74AUP2G57   | Dual configurable gate; Schmitt-trigger          | 0.8 - 3.6           | CMOS                   | ±4                           | 6.6                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP2G58   | Dual configurable gate; Schmitt-trigger          | 0.8 - 3.6           | CMOS                   | ±4                           | 6.6                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP2G97   | Dual configurable gate; Schmitt-trigger          | 0.8 - 3.6           | CMOS                   | ±4                           | 6.6                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP2G98   | Dual configurable gate; Schmitt-trigger          | 0.8 - 3.6           | CMOS                   | ±4                           | 6.6                  | 30                                    | 70                     | 1              | -40~125               |
| 74AXP1G57   | Configurable gate; Schmitt-trigger               | 0.7 - 2.75          | CMOS                   | ±4.5                         | 4.6                  | 5                                     | 70                     | 1              | -40~85                |
| 74AXP1G58   | Configurable gate; Schmitt-trigger               | 0.7 - 2.75          | CMOS                   | ±4.5                         | 4.5                  | 5                                     | 70                     | 1              | -40~85                |
| 74AXP1G97   | Configurable gate; Schmitt-trigger               | 0.7 - 2.75          | CMOS                   | ±4.5                         | 4.5                  | 5                                     | 70                     | 1              | -40~85                |
| 74AXP1G98   | Configurable gate; Schmitt-trigger               | 0.7 - 2.75          | CMOS                   | ±4.5                         | 4.5                  | 5                                     | 70                     | 1              | -40~85                |
| 74LVC1G57   | Configurable gate; Schmitt-trigger               | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 6.3                  | 50                                    | 150                    | 1              | -40~125               |
| 74LVC1G58   | Configurable gate; Schmitt-trigger               | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 6.3                  | 50                                    | 150                    | 1              | -40~125               |
| 74LVC1G97   | Configurable gate; Schmitt-trigger               | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 6.3                  | 50                                    | 150                    | 1              | -40~125               |
| 74LVC1G98   | Configurable gate; Schmitt-trigger               | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 6.3                  | 50                                    | 150                    | 1              | -40~125               |
| 74LVC1G99   | Configurable gate; Schmitt-trigger               | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 8.4                  | 50                                    | 150                    | 1              | -40~125               |

## EXCLUSIVE-NOR Gates

Types in **bold** represent new products

| Type number      | Description  | V <sub>CC</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (typ) (pF) | f <sub>max</sub> (MHz) | T <sub>amb</sub> (°C) |
|------------------|--|---------------------|------------------------|------------------------------|----------------------|---------------------------------------|------------------------|-----------------------|
| <b>74AUP1T87</b> | Single supply 2-input translating EXCLUSIVE-NOR gate | 2.3 - 3.6           | CMOS                   | ±4                           | 3.9                  | 15                                    | 70                     | -40~125               |
| <b>74LV1T87</b>  | Single supply 2-input translating EXCLUSIVE-NOR gate | 1.6 - 5.5           | CMOS                   | ±8                           | 15.8                 | 15                                    | 60                     | -40~125               |
| HEF4077          | Quad 2-input EXCLUSIVE-NOR gate                      | 3.0 - 15            | CMOS                   | ±2.4                         | 30                   | 50                                    | 10                     | -40~85                |

## EXCLUSIVE-OR Gates

| Type number      | Description   | V <sub>CC</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (typ) (pF) | f <sub>max</sub> (MHz) | Number of bits | T <sub>amb</sub> (°C) |
|------------------|---|---------------------|------------------------|------------------------------|----------------------|---------------------------------------|------------------------|----------------|-----------------------|
| 74AHC1G86        | 2-input EXCLUSIVE-OR gate                           | 2.0 - 5.5           | CMOS                   | ±8                           | 3.4                  | 50                                    | 60                     | 1              | -40~125               |
| 74AHCT1G86       | 2-input EXCLUSIVE-OR gate; TTL-enabled              | 4.5 - 5.5           | TTL                    | ±8                           | 3.5                  | 50                                    | 60                     | 1              | -40~125               |
| 74AHC86          | Quad 2-input EXCLUSIVE-OR gate                      | 2.0 - 5.5           | CMOS                   | ±8                           | 3.4                  | 50                                    | 60                     | 4              | -40~125               |
| 74AHCT86         | Quad 2-input EXCLUSIVE-OR gate; TTL-enabled         | 4.5 - 5.5           | TTL                    | ±8                           | 3.4                  | 50                                    | 60                     | 4              | -40~125               |
| 74AUP1G386       | Single 3-input EXCLUSIVE-OR gate                    | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.6                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP1G86        | Single 2-input Exclusive-OR gate                    | 1.1 - 3.6           | CMOS                   | ±1.9                         | 9.0                  | 30                                    | 70                     | 1              | -40~125               |
| <b>74AUP1T86</b> | Single supply 2-input translating EXCLUSIVE-OR gate | 2.3 - 3.6           | CMOS                   | ±1.9                         | 3.8                  | 15                                    | 70                     | 1              | -40~125               |
| 74AUP2G86        | Dual 2-input EXCLUSIVE-OR gate                      | 1.1 - 3.6           | CMOS                   | ±1.9                         | 9.0                  | 30                                    | 70                     | 2              | -40~125               |
| 74AXP1G86        | Single 2-input Exclusive-OR gates                   | 0.7 - 2.75          | CMOS                   | ±4.5                         | 4.5                  | 5                                     | 70                     | 1              | -40~85                |
| 74HC1G86         | Single 2-input EXCLUSIVE-OR gate                    | 2.0 - 6.0           | CMOS                   | ±2.6                         | 9.0                  | 50                                    | 36                     | 1              | -40~125               |
| 74HCT1G86        | Single 2-input EXCLUSIVE-OR gate; TTL-enabled       | 4.5 - 5.5           | TTL                    | ±2.0                         | 10                   | 50                                    | 36                     | 1              | -40~125               |
| 74HC2G86         | Dual 2-input EXCLUSIVE-OR gate                      | 2.0 - 6.0           | CMOS                   | ±5.2                         | 9.0                  | 50                                    | 36                     | 2              | -40~125               |
| 74HCT2G86        | Dual 2-input EXCLUSIVE-OR gate; TTL-enabled         | 4.5 - 5.5           | TTL                    | ±4.0                         | 11                   | 50                                    | 36                     | 2              | -40~125               |
| 74HC86           | Quad 2-input EXCLUSIVE-OR gate                      | 2.0 - 6.0           | CMOS                   | ±5.2                         | 11                   | 50                                    | 36                     | 4              | -40~125               |
| 74HCT86          | Quad 2-input EXCLUSIVE-OR gate; TTL-enabled         | 4.5 - 5.5           | TTL                    | ±4                           | 14                   | 50                                    | 36                     | 4              | -40~125               |
| <b>74LV1T86</b>  | Single supply 2-input translating EXCLUSIVE-OR gate | 1.6 - 5.5           | CMOS                   | ±8                           | 13.3                 | 15                                    | 60                     | 1              | -40~125               |
| 74LVC1G386       | Single 3-Input EXCLUSIVE-OR gate                    | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 4.5                  | 50                                    | 150                    | 1              | -40~125               |
| 74LVC1G86        | Single 2-input EXCLUSIVE-OR gate                    | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 2.4                  | 50                                    | 150                    | 1              | -40~125               |
| 74LVC2G86        | Dual 2-input EXCLUSIVE-OR gate                      | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 2.3                  | 50                                    | 150                    | 2              | -40~125               |
| 74LVC86          | Quad 2-input EXCLUSIVE-OR gate                      | 1.2 - 3.6           | CMOS/<br>LVTTTL        | ±24                          | 3.0                  | 50                                    | 150                    | 4              | -40~125               |
| HEF4030B         | Quad 2-input EXCLUSIVE-OR gate                      | 3.0 - 15            | CMOS                   | ±2.4                         | 30                   | 50                                    | 10                     | 4              | -40~85                |
| HEF4070B         | Quad 2-input EXCLUSIVE-OR gate                      | 3.0 - 15            | CMOS                   | ±2.4                         | 30                   | 50                                    | 10                     | 4              | -40~85                |
| XC7SET86         | 2-input EXCLUSIVE-OR gate; TTL-enabled              | 4.5 - 5.5           | TTL                    | ±8                           | 3.5                  | 50                                    | 60                     | 1              | -40~125               |
| XC7SH86          | 2-input EXCLUSIVE-OR gate                           | 2.0 - 5.5           | CMOS                   | ±8                           | 3.4                  | 50                                    | 60                     | 1              | -40~125               |

## NAND Gates

| Type number | Description   | V <sub>CC</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (typ) (pF) | f <sub>max</sub> (MHz) | Number of bits | T <sub>amb</sub> (°C) |
|-------------|---|---------------------|------------------------|------------------------------|----------------------|---------------------------------------|------------------------|----------------|-----------------------|
| 74ABT00     | Quad 2-input NAND gate                              | 4.5 - 5.5           | TTL                    | -15 / 20                     | 2.5                  | 50                                    | 100                    | 4              | -40~85                |
| 74ABT20     | Dual 4-input NAND gate                              | 4.5 - 5.5           | TTL                    | -15 / 20                     | 2.7                  | 50                                    | 100                    | 2              | -40~85                |
| 74AHC00     | Quad 2-input NAND gate                              | 2.0 - 5.5           | CMOS                   | ±8                           | 3.2                  | 50                                    | 60                     | 4              | -40~125               |
| 74AHC132    | Quad 2-input NAND gate Schmitt-trigger              | 2.0 - 5.5           | CMOS                   | ±8                           | 3.3                  | 50                                    | 60                     | 4              | -40~125               |
| 74AHC1G00   | Single 2-input NAND gate                            | 2.0 - 5.5           | CMOS                   | ±8                           | 3.5                  | 50                                    | 60                     | 1              | -40~125               |
| 74AHC2G00   | Dual 2-input NAND gate                              | 2.0 - 5.5           | CMOS                   | ±8                           | 3.5                  | 50                                    | 60                     | 2              | -40~125               |
| 74AHCT00    | Quad 2-input NAND gate; TTL-enabled                 | 4.5 - 5.5           | TTL                    | ±8                           | 3.3                  | 50                                    | 60                     | 4              | -40~125               |
| 74AHCT132   | Quad 2-input NAND gate Schmitt-trigger; TTL-enabled | 4.5 - 5.5           | TTL                    | ±8                           | 3.5                  | 50                                    | 60                     | 4              | -40~125               |

## NAND Gates

Types in **bold** represent new products

| Type number      | Description   | V <sub>CC</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (typ) (pF) | f <sub>max</sub> (MHz) | Number of bits | T <sub>amb</sub> (°C) |
|------------------|---|---------------------|------------------------|------------------------------|----------------------|---------------------------------------|------------------------|----------------|-----------------------|
| 74AHCT1G00       | Single 2-input NAND gate; TTL-enabled               | 4.5 - 5.5           | TTL                    | ±8                           | 3.6                  | 50                                    | 60                     | 1              | -40~125               |
| 74AHCT2G00       | Dual 2-input NAND gate; TTL-enabled                 | 4.5 - 5.5           | TTL                    | ±8                           | 3.6                  | 50                                    | 60                     | 2              | -40~125               |
| <b>74AUP1T00</b> | Single supply 2-input voltage-translating NAND gate | 2.3 - 3.6           | CMOS                   | ±1.9                         | 3.7                  | 15                                    | 70                     | 1              | -40~125               |
| 74AUP2G132       | Dual 2-input NAND gate Schmitt-trigger              | 1.1 - 3.6           | CMOS                   | ±1.9                         | 10                   | 30                                    | 70                     | 2              | -40~125               |
| 74AXP1G00        | Single 2-input NAND gate                            | 0.7 - 2.75          | CMOS                   | ±4.5                         | 2.7                  | 5                                     | 70                     | 1              | -40~85                |
| 74AXP1G10        | Single 3-input NAND gate                            | 0.7 - 2.75          | CMOS                   | ±4.5                         | 2.6                  | 5                                     | 70                     | 1              | -40~85                |
| 74HC132          | Quad 2-input NAND gate Schmitt-trigger              | 2.0 - 6.0           | CMOS                   | ±5.2                         | 11                   | 50                                    | 36                     | 4              | -40~125               |
| 74HCT132         | Quad 2-input NAND gate Schmitt-trigger; TTL-enabled | 4.5 - 5.5           | TTL                    | ±4                           | 17                   | 50                                    | 36                     | 4              | -40~125               |
| 74LV132          | Quad 2-input NAND gate Schmitt-trigger              | 1.0 - 5.5           | TTL                    | ±12                          | 10                   | 50                                    | 30                     | 4              | -40~125               |
| 74LVC132A        | Quad 2-input NAND gate Schmitt-trigger              | 1.2 - 3.6           | CMOS/<br>LVTTTL        | ±24                          | 3.4                  | 50                                    | 175                    | 4              | -40~125               |
| HEF4093B         | Quad 2-input NAND gate Schmitt-trigger              | 3.0 - 15            | CMOS                   | ±2.4                         | 3.0                  | 50                                    | 10                     | 4              | -40~85                |
| 74AHC30          | 8-input NAND gate                                   | 2.0 - 5.5           | CMOS                   | ±8                           | 3.6                  | 50                                    | 60                     | 1              | -40~125               |
| 74AHCT30         | 8-input NAND gate; TTL-enabled                      | 4.5 - 5.5           | TTL                    | ±8                           | 3.3                  | 50                                    | 60                     | 1              | -40~125               |
| 74ALVC00         | Quad 2-input NAND gate                              | 1.65 - 3.6          | CMOS/<br>LVTTTL        | ±24                          | 2.1                  | 50                                    | 145                    | 4              | -40~85                |
| 74AUP1G00        | Single 2-input NAND gate                            | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.3                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP1G132       | Single 2-input NAND gate Schmitt trigger            | 1.1 - 3.6           | CMOS                   | ±1.9                         | 10                   | 30                                    | 70                     | 1              | -40~125               |
| 74AUP1G38        | Single 2-input NAND gate; open drain                | 1.1 - 3.6           | CMOS                   | 1.9                          | 8.5                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP2G00        | Dual 2-input NAND gate                              | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.3                  | 30                                    | 70                     | 2              | -40~125               |
| 74AUP2G38        | Dual 2-input NAND gate; open drain                  | 1.1 - 3.6           | CMOS                   | 1.9                          | 8.5                  | 30                                    | 70                     | 2              | -40~125               |
| 74HC00           | Quad 2-input NAND gate                              | 2.0 - 6.0           | CMOS                   | ±5.2                         | 7.0                  | 50                                    | 36                     | 4              | -40~125               |
| 74HC03           | Quad 2-input NAND gate; open drain                  | 2.0 - 6.0           | CMOS                   | 5.2                          | 8.0                  | 50                                    | 36                     | 4              | -40~125               |
| 74HC10           | Triple 3-input NAND gate                            | 2.0 - 6.0           | CMOS                   | ±5.2                         | 9.0                  | 50                                    | 36                     | 3              | -40~125               |
| 74HC1G00         | Single 2-input NAND gate                            | 2.0 - 6.0           | CMOS                   | ±2.6                         | 7.0                  | 50                                    | 36                     | 1              | -40~125               |
| 74HC20           | Dual 4-input NAND gate                              | 2.0 - 6.0           | CMOS                   | ±5.2                         | 8.0                  | 50                                    | 36                     | 2              | -40~125               |
| 74HC2G00         | Dual 2-input NAND gate                              | 2.0 - 6.0           | CMOS                   | ±5.6                         | 9.0                  | 50                                    | 36                     | 2              | -40~125               |
| 74HC30           | 8-input NAND gate                                   | 2.0 - 6.0           | CMOS                   | ±5.2                         | 12                   | 50                                    | 36                     | 1              | -40~125               |
| 74HCT00          | Quad 2-input NAND gate; TTL-enabled                 | 4.5 - 5.5           | TTL                    | ±4                           | 10                   | 50                                    | 36                     | 4              | -40~125               |
| 74HCT03          | Quad 2-input NAND gate; TTL-enabled; open drain     | 4.5 - 5.5           | TTL                    | ±4                           | 10                   | 50                                    | 36                     | 4              | -40~125               |
| 74HCT10          | Triple 3-input NAND gate; TTL-enabled               | 4.5 - 5.5           | TTL                    | ±4                           | 11                   | 50                                    | 36                     | 3              | -40~125               |
| 74HCT1G00        | Single 2-input NAND gate; TTL-enabled               | 4.5 - 5.5           | TTL                    | ±2                           | 10                   | 50                                    | 36                     | 1              | -40~125               |
| 74HCT20          | Dual 4-input NAND gate; TTL-enabled                 | 4.5 - 5.5           | TTL                    | ±4                           | 13                   | 50                                    | 36                     | 2              | -40~125               |
| 74HCT2G00        | Dual 2-input NAND gate; TTL-enabled                 | 4.5 - 5.5           | TTL                    | ±4                           | 12                   | 50                                    | 36                     | 2              | -40~125               |
| 74HCT30          | 8-input NAND gate; TTL-enabled                      | 4.5 - 5.5           | TTL                    | ±4                           | 12                   | 50                                    | 36                     | 1              | -40~125               |
| 74LV00           | Quad 2-input NAND gate                              | 1.0 - 5.5           | TTL                    | ±12                          | 7                    | 50                                    | 30                     | 4              | -40~125               |
| 74LV03           | Quad 2-input NAND gate; TTL-enabled; open drain     | 1.0 - 5.5           | TTL                    | ±12                          | 8.0                  | 50                                    | 30                     | 4              | -40~125               |
| <b>74LV1T00</b>  | Single supply 2-input translating NAND gate         | 1.6 - 5.5           | CMOS                   | ±8                           | 3.1                  | 15                                    | 60                     | 1              | -40~125               |
| 74LVC00A         | Quad 2-input NAND gate                              | 1.2 - 3.6           | CMOS/<br>LVTTTL        | ±24                          | 2.1                  | 50                                    | 150                    | 4              | -40~125               |
| 74LVC10A         | Triple 3-input NAND gate                            | 1.2 - 3.6           | CMOS/<br>LVTTTL        | ±24                          | 3.9                  | 50                                    | 150                    | 3              | -40~125               |
| 74LVC1G00        | Single 2-input NAND gate                            | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 2.2                  | 50                                    | 175                    | 1              | -40~125               |
| 74LVC1G10        | Single 3-input NAND gate                            | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 2.6                  | 50                                    | 175                    | 1              | -40~125               |
| 74LVC1G38        | Single 2-input NAND gate; open drain                | 1.65 - 5.5          | CMOS/<br>LVTTTL        | 32                           | 2.3                  | 50                                    | 175                    | 1              | -40~125               |
| 74LVC2G00        | Dual 2-input NAND gate                              | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 2.2                  | 50                                    | 175                    | 2              | -40~125               |
| 74LVC2G38        | Dual 2-input NAND gate; open drain                  | 1.65 - 5.5          | CMOS/<br>LVTTTL        | 32                           | 2.1                  | 50                                    | 175                    | 2              | -40~125               |
| 74LVC30A         | 8-input NAND gate                                   | 1.65 - 5.5          | CMOS/<br>LVTTTL        | 24                           | 3.6                  | 50                                    | 175                    | 1              | -40~125               |
| HEF4011B         | Quad 2-input NAND gate                              | 3.0 - 15            | CMOS                   | ±2.4                         | 20                   | 50                                    | 10                     | 4              | -40~85                |

## NOR Gates

Types in **bold** represent new products

| Type number      | Description  | V <sub>CC</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (typ) (pF) | f <sub>max</sub> (MHz) | Number of bits | T <sub>amb</sub> (°C) |
|------------------|--|---------------------|------------------------|------------------------------|----------------------|---------------------------------------|------------------------|----------------|-----------------------|
| 74AHC02          | Quad 2-input NOR gate                              | 2.0 - 5.5           | CMOS                   | ±8                           | 2.9                  | 50                                    | 60                     | 4              | -40~125               |
| 74AHCT02         | Quad 2-input NOR gate; TTL-enabled                 | 4.5 - 5.5           | TTL                    | ±8                           | 3.8                  | 50                                    | 60                     | 4              | -40~125               |
| 74AHC1G02        | Single 2-input NOR gate                            | 2.0 - 5.5           | CMOS                   | ±8                           | 3.2                  | 50                                    | 60                     | 1              | -40~125               |
| 74AHCT1G02       | Single 2-input NOR gate; TTL-enabled               | 4.5 - 5.5           | TTL                    | ±8                           | 3.5                  | 50                                    | 60                     | 1              | -40~125               |
| 74ALVC02         | Quad 2-input NOR gate                              | 1.65 - 3.6          | CMOS/<br>LVTTTL        | ±24                          | 2.2                  | 50                                    | 150                    | 4              | -40~85                |
| 74AUP1G02        | Single 2-input NOR gate                            | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.3                  | 30                                    | 70                     | 1              | -40~125               |
| <b>74AUP1T02</b> | Single supply 2-input voltage-translating NOR gate | 2.3 - 3.6           | CMOS                   | ±1.9                         | 3.6                  | 15                                    | 70                     | 1              | -40~125               |
| 74AUP2G02        | Dual 2-input NOR gate                              | 1.1 - 3.6           | CMOS                   | ±1.9                         | 8.3                  | 30                                    | 70                     | 2              | -40~125               |
| 74AXP1G02        | Single 2-input NOR gate                            | 0.7 - 2.75          | CMOS                   | ±4.5                         | 2.6                  | 5                                     | 70                     | 1              | -40~85                |
| 74HC02           | Quad 2-input NOR gate                              | 2.0 - 6.0           | CMOS                   | ±5.2                         | 7.0                  | 50                                    | 36                     | 4              | -40~125               |
| 74HCT02          | Quad 2-input NOR gate; TTL-enabled                 | 4.5 - 5.5           | TTL                    | ±4                           | 9.0                  | 50                                    | 36                     | 4              | -40~125               |
| 74HC1G02         | Single 2-input NOR gate                            | 2.0 - 6.0           | CMOS                   | ±2.6                         | 7.0                  | 50                                    | 36                     | 1              | -40~125               |
| 74HCT1G02        | Single 2-input NOR gate; TTL-enabled               | 4.5 - 5.5           | TTL                    | ±2.0                         | 9.0                  | 50                                    | 36                     | 1              | -40~125               |
| 74HC27           | Triple 3-input NOR gate                            | 2.0 - 6.0           | CMOS                   | ±5.2                         | 8.0                  | 50                                    | 36                     | 3              | -40~125               |
| 74HCT27          | Triple 3-input NOR gate; TTL-enabled               | 4.5 - 5.5           | TTL                    | ±4                           | 10                   | 50                                    | 36                     | 3              | -40~125               |
| 74HC2G02         | Dual 2-input NOR gate                              | 2.0 - 6.0           | CMOS                   | ±5.2                         | 9.0                  | 50                                    | 36                     | 2              | -40~125               |
| 74HCT2G02        | Dual 2-input NOR gate; TTL-enabled                 | 4.5 - 5.5           | TTL                    | ±4                           | 12                   | 50                                    | 36                     | 2              | -40~125               |
| 74HC4002         | Dual 4-input NOR gate                              | 2.0 - 6.0           | CMOS                   | ±5.2                         | 9.0                  | 50                                    | 36                     | 2              | -40~125               |
| 74HCT4002        | Dual 4-input NOR gate; TTL-enabled                 | 4.5 - 5.5           | TTL                    | ±4                           | 11                   | 50                                    | 36                     | 2              | -40~125               |
| 74LV02           | Quad 2-input NOR gate                              | 1.0 - 5.5           | TTL                    | ±12                          | 6.0                  | 50                                    | 30                     | 4              | -40~125               |
| <b>74LV1T02</b>  | Single supply 2-input translating NOR gate         | 1.6 - 5.5           | CMOS                   | ±8                           | 3.2                  | 15                                    | 60                     | 1              | -40~125               |
| 74LVC02A         | Quad 2-input NOR gate                              | 1.2 - 3.6           | CMOS/<br>LVTTTL        | ±24                          | 2.1                  | 50                                    | 150                    | 4              | -40~125               |
| 74LVC1G02        | Single 2-input NOR gate                            | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 2.1                  | 50                                    | 150                    | 1              | -40~125               |
| 74LVC1G27        | Single 3-input NOR gate                            | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 2.6                  | 50                                    | 150                    | 1              | -40~125               |
| 74LVC2G02        | Dual 2-input NOR gate                              | 1.65 - 5.5          | CMOS/<br>LVTTTL        | ±32                          | 2.4                  | 50                                    | 150                    | 2              | -40~125               |
| 74LVT02          | Quad 2-input NOR gate                              | 2.7 - 3.6           | TTL                    | -20 / 32                     | 2.8                  | 50                                    | 150                    | 4              | -40~85                |
| 74VHC02          | Quad 2-input NOR gate                              | 2.0 - 5.5           | CMOS                   | ±8                           | 2.9                  | 50                                    | 60                     | 4              | -40~125               |
| 74VHCT02         | Quad 2-input NOR gate; TTL-enabled                 | 4.5 - 5.5           | TTL                    | ±8                           | 3.8                  | 50                                    | 60                     | 4              | -40~125               |
| HEF4001B         | Quad 2-input NOR gate                              | 3.0 - 15            | CMOS                   | ±2.4                         | 20                   | 50                                    | 10                     | 4              | -40~85                |
| HEF4002B         | Dual 4-input NOR gate                              | 3.0 - 15            | CMOS                   | ±2.4                         | 20                   | 50                                    | 10                     | 4              | -40~85                |
| XC7SET02         | Single 2-input NOR gate; TTL-enabled               | 4.5 - 5.5           | TTL                    | ±8                           | 3.5                  | 50                                    | 60                     | 1              | -40~125               |
| XC7SH02          | Single 2-input NOR gate                            | 2.0 - 5.5           | CMOS                   | ±8                           | 3.2                  | 50                                    | 60                     | 1              | -40~125               |



## OR Gates

Types in **bold** represent new products

| Type number      | Description                                       | V <sub>cc</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (typ) (pF) | f <sub>max</sub> (MHz) | Number of bits | T <sub>amb</sub> (°C) |
|------------------|---|---------------------|------------------------|------------------------------|----------------------|---------------------------------------|------------------------|----------------|-----------------------|
| 74ABT32          | Quad 2-input OR gate                              | 4.5 - 5.5           | TTL                    | -15 / 20                     | 2.3                  | 50                                    | 100                    | 4              | -40~85                |
| 74AHC1G32        | Single 2-input OR gate                            | 2.0 - 5.5           | CMOS                   | ±8                           | 3.2                  | 50                                    | 60                     | 1              | -40~125               |
| 74AHT1G32        | Single 2-input OR gate                            | 4.5 - 5.5           | TTL                    | ±8                           | 3.3                  | 50                                    | 60                     | 1              | -40~125               |
| 74AHC2G32        | Dual 2-input OR gate                              | 2.0 - 5.5           | CMOS                   | ±8                           | 3.2                  | 50                                    | 60                     | 2              | -40~125               |
| 74AHT2G32        | Dual 2-input OR gate                              | 4.5 - 5.5           | TTL                    | ±8                           | 3.3                  | 50                                    | 60                     | 2              | -40~125               |
| 74AHC32          | Quad 2-input OR gate                              | 2.0 - 5.5           | CMOS                   | ±8                           | 3.5                  | 50                                    | 60                     | 4              | -40~125               |
| 74AHT32          | Quad 2-input OR gate; TTL-enabled                 | 4.5 - 5.5           | TTL                    | ±8                           | 5.0                  | 50                                    | 60                     | 4              | -40~125               |
| 74ALVC32         | Quad 2-input OR gate                              | 1.65 - 3.6          | CMOS/LVTTL             | ±24                          | 2.0                  | 50                                    | 150                    | 4              | -40~125               |
| 74AUP1G32        | Single 2-input OR gate                            | 1.1 - 3.6           | CMOS                   | ±1.9                         | 7.9                  | 30                                    | 70                     | 1              | -40~125               |
| 74AUP1G332       | Single 3-input OR gate                            | 1.1 - 3.6           | CMOS                   | ±1.9                         | 6.8                  | 30                                    | 70                     | 1              | -40~125               |
| <b>74AUP1T32</b> | Single supply 2-input voltage-translating OR gate | 2.3 - 3.6           | CMOS                   | ±1.9                         | 3.6                  | 15                                    | 70                     | 1              | -40~125               |
| 74AUP2G32        | Dual 2-input OR gate                              | 1.1 - 3.6           | CMOS                   | ±1.9                         | 7.9                  | 30                                    | 70                     | 2              | -40~125               |
| 74AXP1G32        | Single 2-input OR gate                            | 0.7 - 2.75          | CMOS                   | ±4.5                         | 2.5                  | 5                                     | 70                     | 1              | -40~85                |
| 74HC1G32         | Single 2-input OR gate                            | 2.0 - 6.0           | CMOS                   | ±2.6                         | 8.0                  | 50                                    | 36                     | 1              | -40~125               |
| 74HCT1G32        | Single 2-input OR gate; TTL-enabled               | 4.5 - 5.5           | TTL                    | ±2.0                         | 10                   | 50                                    | 36                     | 1              | -40~125               |
| 74HC2G32         | Dual 2-input OR gate                              | 2.0 - 6.0           | CMOS                   | ±5.2                         | 9.0                  | 50                                    | 36                     | 2              | -40~125               |
| 74HCT2G32        | Dual 2-input OR gate; TTL-enabled                 | 4.5 - 5.5           | TTL                    | ±4.0                         | 13                   | 50                                    | 36                     | 2              | -40~125               |
| 74HC32           | Quad 2-input OR gate                              | 2.0 - 6.0           | CMOS                   | ±5.2                         | 6.0                  | 50                                    | 36                     | 4              | -40~125               |
| 74HCT32          | Quad 2-input OR gate                              | 4.5 - 5.5           | TTL                    | ±4.0                         | 9.0                  | 50                                    | 36                     | 4              | -40~125               |
| 74HC4075         | Triple 3-input OR gate                            | 2.0 - 6.0           | CMOS                   | ±5.2                         | 8.0                  | 50                                    | 36                     | 3              | -40~125               |
| 74HCT4075        | Triple 3-input OR gate; TTL-enabled               | 4.5 - 5.5           | TTL                    | ±4                           | 10                   | 50                                    | 36                     | 3              | -40~125               |
| <b>74LV1T32</b>  | Single supply 2-input translating OR gate         | 1.6 - 5.5           | CMOS                   | ±8                           | 4.4                  | 15                                    | 60                     | 1              | -40~125               |
| 74LVC1G32        | Single 2-input OR gate                            | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 2.1                  | 50                                    | 150                    | 1              | -40~125               |
| 74LVC1G332       | Single 3-input OR gate                            | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 2.6                  | 50                                    | 150                    | 1              | -40~125               |
| 74LVC2G32        | Dual 2-input OR gate                              | 1.65 - 5.5          | CMOS/LVTTL             | ±32                          | 2.2                  | 50                                    | 150                    | 2              | -40~125               |
| 74LVC32A         | Quad 2-input OR gate                              | 1.2 - 3.6           | CMOS/LVTTL             | ±24                          | 2.1                  | 50                                    | 150                    | 4              | -40~125               |
| 74VHC32          | Quad 2-input OR gate                              | 2.0 - 5.5           | CMOS                   | ±8                           | 3.5                  | 50                                    | 60                     | 4              | -40~125               |
| 74VHCT32         | Quad 2-input OR gate; TTL-enabled                 | 4.5 - 5.5           | TTL                    | ±8                           | 5.0                  | 50                                    | 60                     | 4              | -40~125               |
| HEF4071B         | Quad 2-input OR gate                              | 3.0 - 15            | CMOS                   | ±2.4                         | 20                   | 50                                    | 10                     | 4              | -40~125               |
| XC7SET32         | Single 2-input OR gate; TTL-enabled               | 4.5 - 5.5           | TTL                    | ±8                           | 3.3                  | 50                                    | 60                     | 1              | -40~125               |
| XC7SH32          | Single 2-input OR gate                            | 2.0 - 5.5           | CMOS                   | ±8                           | 3.2                  | 50                                    | 60                     | 1              | -40~125               |

## Digital comparators

| Type number | Description                             | V <sub>cc</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (pF) | T <sub>amb</sub> (°C) |
|-------------|---|---------------------|------------------------|------------------------------|----------------------|---------------------------------|-----------------------|
| 74HC688     | 8-bit magnitude comparator              | 2.0 - 6.0           | CMOS                   | ±5.2                         | 17                   | 50                              | -40~125               |
| 74HCT688    | 8-bit magnitude comparator; TTL-enabled | 4.5 - 5.5           | TTL                    | ±4                           | 17                   | 50                              | -40~125               |
| 74HC85      | 4-bit magnitude comparator              | 2.0 - 6.0           | CMOS                   | ±5.2                         | 23                   | 50                              | -40~125               |
| 74HCT85     | 4-bit magnitude comparator; TTL-enabled | 4.5 - 5.5           | TTL                    | ±4                           | 26                   | 50                              | -40~125               |

## Parity generators-checkers

| Type number | Description  | V <sub>cc</sub> (V) | Logic switching levels | Output drive capability (mA) | t <sub>pd</sub> (ns) | Output Load C <sub>L</sub> (pF) | T <sub>amb</sub> (°C) |
|-------------|--|---------------------|------------------------|------------------------------|----------------------|---------------------------------|-----------------------|
| 74HC280     | 9-bit odd/even parity generator/checker              | 2.0 - 6.0           | CMOS                   | ±5.2                         | 17                   | 50                              | -40~125               |
| 74HCT280    | 9-bit odd/even parity generator/checker; TTL-enabled | 4.5 - 5.5           | TTL                    | ±4                           | 18                   | 50                              | -40~125               |

## Standard logic functions

74 XXX XXX XXX

| Logic family | Function number | Package type |
|--------------|-----------------|--------------|
| AHC(T)       |                 | BQ DQFN      |
| ALVC         |                 | BX DQFN      |
| ALVT         |                 | D SO         |
| AUP          |                 | DB SSOP      |
| AVC(M)       |                 | DC VSSOP     |
| CBT(D)       |                 | DG TSSOP     |
| CBTLV(D)     |                 | DGG TSSOP    |
| HC(T)        |                 | DL SSOP      |
| HEF4000B     |                 | DP TSSOP     |
| LV           |                 | FC BGA       |
| LVC          |                 | EV BGA       |
| LVT          |                 | GU DQFN      |
| NPIC         |                 | P TSSOP      |
| VHC(T)       |                 | T SO         |
| XC7          |                 | TS SSOP      |
|              |                 | TT TSSOP     |

## Mini logic functions

74 XXX XG  
XT XXX XXX

| Logic family | Gate format              | Function number | Package type |
|--------------|--------------------------|-----------------|--------------|
| AHC(T)       | 1G Single-gate           |                 | DC PicoGate  |
| AUP          | 2G Dual-gate             |                 | DP PicoGate  |
| AVC(M)       | 3G Triple-gate           |                 | GD MicroPak  |
| AXP          |                          |                 | GF MicroPak  |
| CBT(D)       | <b>Translator format</b> |                 | GM MicroPak  |
| CBTLV(D)     |                          |                 | GN MicroPak  |
| HC(T)        | 1T Single-translator     |                 | GS MicroPak  |
| LVC          | 2T Dual-translator       |                 | GT MicroPak  |
| XC7          | 3T Triple-translator     |                 | GV PicoGate  |
|              | 4T Quad-translator       |                 | GW PicoGate  |
|              |                          |                 | GX MicroPak  |



|  |            |
|--|------------|
| <b>Package details and packing methods .....</b>                           | <b>166</b> |
| Package details and packing methods SMD .....                              | 166        |
| Package details and packing methods WLCSP .....                            | 170        |
| Packing details glass diodes, single ended and through hole packages ..... | 170        |
| <b>Package cross reference .....</b>                                       | <b>171</b> |
| Package cross reference list .....   | 171        |
| Package cross reference matrix .....                                       | 176        |
| <b>Competitive cross reference - Logic .....</b>                           | <b>178</b> |
| <b>Packing methods .....</b>   | <b>180</b> |
| Product orientation (tape and reel pack) .....                             | 180        |
| <b>Minimized outline drawings and reflow soldering footprint .....</b>     | <b>183</b> |
| 2-pin SMD packages .....   | 183        |
| 3-pin SMD packages .....   | 187        |
| 4-pin SMD packages .....   | 190        |
| 5-pin SMD packages .....   | 192        |
| 6-pin SMD packages .....   | 193        |
| 7-pin SMD packages .....   | 196        |
| 8-pin SMD packages .....   | 196        |
| 10-pin SMD packages .....  | 200        |
| 12-pin SMD packages .....  | 201        |
| 14-pin SMD packages .....  | 201        |
| 16-pin SMD packages .....  | 202        |
| 20-pin SMD packages .....  | 203        |
| 24-pin SMD packages .....  | 204        |
| 32-pin SMD packages .....  | 205        |
| 48-pin SMD packages .....  | 205        |
| 56-pin SMD packages .....  | 205        |
































## Package details and packing methods

### Package details and packing methods WLCSP

| Basic Type  | Length x width x height | # of balls | Pitch | Package   | Package name |
|-------------|-------------------------|------------|-------|---|--------------|
| IP4369CX4   | 0.76 x 0.76 x 0.5       | 4          | 0.4   |    | WLCSP4       |
| PMCM440VNE  | 0.78 x 0.78 x 0.35      | 4          | 0.4   |    | WLCSP4       |
| PMCM4401VNE | 0.78 x 0.78 x 0.35      | 4          | 0.4   |    | WLCSP4       |
| PMCM440VPE  | 0.78 x 0.78 x 0.35      | 4          | 0.4   |    | WLCSP4       |
| PMCM4401VPE | 0.78 x 0.78 x 0.35      | 4          | 0.4   |    | WLCSP4       |
| PCMF1USB3S  | 1.17 x 0.77 x 0.57      | 5          | 0.4   |    | WLCSP5       |
| PESD1USB3S  | 1.17 x 0.77 x 0.57      | 5          | 0.4   |    | WLCSP5       |
| SOT1454-1   | 0.65 x 0.44 x 0.27      | 6          | 0.23  |    | WLCSP6       |
| PCMF2USB3S  | 1.17 x 1.57 x 0.57      | 10         | 0.4   |    | WLCSP10      |
| PESD2USB3S  | 1.17 x 1.57 x 0.57      | 10         | 0.4   |    | WLCSP10      |
| PCMF3USB3S  | 1.17 x 2.37 x 0.57      | 15         | 0.4   |    | WLCSP15      |
| PESD3USB3S  | 1.17 x 2.37 x 0.57      | 15         | 0.4   |   | WLCSP15      |
| IP3319CX6   | 1.34 x 0.95 x 0.57      | 6          | 0.4   |  | WLCSP6       |
| IP4340CX15  | 1.56 x 1.56 x 0.47      | 15         | 0.4   |  | WLCSP15      |

### Packing details glass diodes, single ended and through hole packages

| Pins/leads     | Package | Packing method and tape/reel/tube dimensions    | Package  | Ordering code (12 NC ending)   | Packing quantity |
|----------------|---------|---|--|--|------------------|
| 2              | SOD27   | 26 mm tape ammo pack, axial                     |  | -143   | 5000 pcs         |
|                |         | 52 mm tape ammo pack, axial                     |  | -133   | 10000 pcs        |
|                |         | 52 mm reel pack, axial                          |  | -113   | 10000 pcs        |
|                | SOD66   | 52 mm tape ammo pack, axial                     |  | -133   | 10000 pcs        |
|                |         | 52 mm reel pack, axial                          |  | -113   | 10000 pcs        |
|                | SOD68   | 26 mm tape ammo pack, axial                     |  | -143   | 5000 pcs         |
|                |         | 52 mm reel pack, axial                          |  | -113   | 10000 pcs        |
|                |         | 52 mm tape ammo pack, axial                     |  | -133   | 10000 pcs        |
|                | 3       | SOT78 (TO-220)                                  | Rail packing, 50 pcs/tube, tube length = 520 mm                                      |  | -127             |
| I2PAK (SOT226) |         | Rail packing, 50 pcs/tube, tube length = 520 mm |  | -127   | 1000 pcs         |

## Package cross reference list

| Type            | Competitor  | Nexperia              | Pins/Leads |
|-----------------|-------------|-----------------------|------------|
| μ8FL            | OnSemi      | LFPK33 (SOT1210)      | 8          |
| μQFN-10L        | ST          | DFN2510A-10 (SOT1176) | 10         |
| μQFN-2L         | ST          | DFN1006-2 (SOD882)    | 2          |
| 6 Lead DFN      | ON Semi     | DFN2020-6 (SOT1118)   | 6          |
| CL2             | Toshiba     | DSN0402-2 (SOD992)    | 2          |
| CLP0603         | Vishay      | DSN0603-2 (SOD962)    | 2          |
| CMAK/ CMPAK     | Renesas     | SOT323                | 3          |
| CMPAK/ CMAK     | Renesas     | SOT323                | 3          |
| CMPAK-5(T)      | Renesas     | SOT353                | 5          |
| CMPAK-6         | Renesas     | SOT363                | 6          |
| CP4             | Toshiba     | SOT143B               | 4          |
| CS6             | Toshiba     | DFN1010-6 (SOT891)    | 6          |
| CST3            | Toshiba     | DFN1006-3 (SOT883)    | 3          |
| CST3            | Toshiba     | DFN1006B-3 (SOT883B)  | 3          |
| CTS2 (fSC)      | Toshiba     | DFN1006-2 (SOD882)    | 2          |
| CTS2 (fSC)      | Toshiba     | DFN1006D-2 (SOD882D)  | 2          |
| D2PAK           | Infineon    | D2PAK (SOT404)        | 3          |
| D2PAK           | ON Semi     | D2PAK (SOT404)        | 3          |
| D2PAK           | ST          | D2PAK (SOT404)        | 3          |
| D2PAK           | Toshiba     | D2PAK (SOT404)        | 3          |
| D2PAK           | Vishay      | D2PAK (SOT404)        | 3          |
| D2PAK 3         | ON Semi     | D2PAK (SOT404)        | 3          |
| D2PAK*          | Diodes Inc. | D2PAK (SOT404)        | 3          |
| D2PAK-3         | OnSemi      | D2PAK (SOT404)        | 3          |
| DFN1006-3       | Diodes Inc. | DFN1006-3 (SOT883)    | 3          |
| DFN1006H4-3     | Diodes Inc. | DFN1006-3 (SOT883)    | 3          |
| DFN1411*        | Diodes Inc. | DFN1010D-3 (SOT1215)  | 3          |
| DFN2            | ST          | DSN0603-2 (SOD962)    | 2          |
| DFN-5           | OnSemi      | LFPK56 (SOT669)       | 4          |
| DFN-8           | OnSemi      | LFPK56D (SOT1205)     | 8          |
| DSN2, 0.4 x 0.2 | ON Semi     | DSN0402-2 (SOD992)    | 2          |
| DSN2, 0.6 x 0.3 | ON Semi     | DSN0603-2 (SOD962)    | 2          |
| DSN2, 1.0 x 0.6 | ON Semi     | DSN1006-2 (SOD993)    | 2          |
| DSN2, 1.0 x 0.6 | ON Semi     | DFN1006D-2 (SOD882D)  | 2          |
| DSN2, 1.6 x 0.8 | ON Semi     | DFN1608D-2 (SOD1608)  | 2          |
| DSN2, 1.6 x 0.8 | ON Semi     | DFN1608D-2 (SOD1608)  | 2          |
| EMD2            | Rohm        | SOD523                | 2          |
| EMD3/EMT3       | Rohm        | DFN1006-3 (SOT883)    | 3          |
| EMT3            | Rohm        | DFN1006-3 (SOT883)    | 3          |
| EMT3/EMD3       | Rohm        | DFN1006-3 (SOT883)    | 3          |
| EMT3F*          | Rohm        | DFN1006-3 (SOT883)    | 3          |
| ESC/TESC        | Toshiba     | SOD523                | 2          |
| ESM             | Toshiba     | DFN1006-3 (SOT883)    | 3          |
| FM8             | Toshiba     | SOT96                 | 8          |
| FS6*            | Toshiba     | DFN1010B-6 (SOT1216)  | 6          |
| GMD2            | Rohm        | DSN0603-2 (SOD962)    | 2          |
| H2PAK-2         | ST          | D2PAK (SOT404)        | 3          |
| HSMT8           | Rohm        | LFPK33 (SOT1210)      | 8          |

| Type                  | Competitor        | Nexperia              | Pins/Leads |
|-----------------------|-------------------|-----------------------|------------|
| HSON-8                | Renesas           | LFPK56 (SOT669)       | 4          |
| HSON-8 Dual           | Renesas           | LFPK56D (SOT1205)     | 8          |
| HSOP8 (Dual)          | Rohm              | LFPK56D (SOT1205)     | 8          |
| HSOP8 (Single)        | Rohm              | LFPK56 (SOT669)       | 4          |
| HSOP8 (Single)        | Rohm              | LFPK56E (SOT1023)     | 4          |
| HUML2020L8 (Dual)     | Rohm              | DFN2020-6 (SOT1118)   | 6          |
| HUML2020L8 (Single)   | Rohm              | DFN2020MD-6 (SOT1220) | 6          |
| I2PAK                 | OnSemi            | I2PAK (SOT226)        | 3          |
| I2PAK                 | ST                | I2PAK (SOT226)        | 3          |
| KMD2                  | Rohm              | DFN1608D-2 (SOD1608)  | 2          |
| LDPK(S)-(1)           | Renesas           | D2PAK (SOT404)        | 3          |
| LFPK                  | Renesas           | LFPK56 (SOT669)       | 5          |
| LFPK56, HSON-8        | Renesas           | LFPK56E (SOT1023)     | 4          |
| LG A 1.0 x 0.6mm      | Texas Instruments | DFN1006B-3 (SOT883B)  | 3          |
| LLD                   | Renesas           | SOD80C                | 2          |
| LLDS                  | Rohm              | SOD80C                | 2          |
| LLP1006-2L            | Vishay            | DFN1006-2 (SOD882)    | 2          |
| LLP1006-2L            | Vishay            | DFN1006D-2 (SOD882D)  | 2          |
| LLP1006-2M            | Vishay            | DFN1006-2 (SOD882)    | 2          |
| LLP1006-2M            | Vishay            | DFN1006D-2 (SOD882D)  | 2          |
| LLP75-7L              | Vishay            | DFN1616-6 (SOT1189)   | 6          |
| LPDS/LPTS             | Rohm              | D2PAK (SOT404)        | 3          |
| LPTS                  | Rohm              | D2PAK (SOT404)        | 3          |
| LPTS/LPDS             | Rohm              | D2PAK (SOT404)        | 3          |
| M-Flat                | Toshiba           | SOD128                | 2          |
| Micro 3               | Int. Rectifier    | SOT23                 | 3          |
| Micro 6               | Int. Rectifier    | SOT457                | 6          |
| Micro FOOT 0.8 x 0.8* | Vishay            | DFN1010D-3 (SOT1215)  | 3          |
| Micro FOOT 1 x 1*     | Vishay            | DFN1010D-3 (SOT1215)  | 3          |
| Micro FOOT 1 x 1.2*   | Vishay            | DFN1010D-3 (SOT1215)  | 3          |
| Micro FOOT 1 x 1.5*   | Vishay            | DFN1010D-3 (SOT1215)  | 3          |
| Micro FOOT 1.6 x 1.6* | Vishay            | DFN2020MD-6 (SOT1220) | 6          |
| Micro FOOT*           | Vishay            | DFN2020MD-6 (SOT1220) | 6          |
| MicroFET              | Fairchild         | DFN2020MD-6 (SOT1220) | 6          |
| MicroFET 1.6 x 1.6*   | Fairchild         | DFN2020MD-6 (SOT1220) | 6          |
| MiniMelf              | Diodes Inc.       | SOD80C                | 2          |
| MiniMelf              | ST                | SOD80C                | 2          |
| MiniMelf              | Vishay            | SOD80C                | 2          |
| MP-25(K)              | Renesas           | TO-220 (SOT78)        | 3          |
| MP-25SK               | Renesas           | I2PAK (SOT226)        | 3          |
| MP-25ZT               | Renesas           | D2PAK (SOT404)        | 3          |
| MP6                   | Renesas           | DSN0603-2 (SOD962)    | 2          |
| MPAK                  | Renesas           | SOT23                 | 3          |
| MPAK                  | Renesas           | SOT23                 | 3          |
| MPAK-4R               | Renesas           | SOT143B               | 4          |
| MPT3                  | Rohm              | SOT89                 | 3          |
| PG-TD SON-8           | Infineon          | LFPK56 (SOT669)       | 5          |
| PG-TD- SON-8          | Infineon          | LFPK56E (SOT1023)     | 4          |

Types with \* show footprint compatibility only

## Package cross reference list

| Type                 | Competitor  | Nexperia              | Pins/ Leads |
|----------------------|-------------|-----------------------|-------------|
| PG-TDSON-8           | Infineon    | LFPAK56D (SOT1205)    | 8           |
| PG-TDSON-8           | Infineon    | LFPAK56 (SOT669)      | 4           |
| PG-TO220-3           | Infineon    | TO-220 (SOT78)        | 3           |
| PG-TO262-3           | Infineon    | I2PAK (SOT226)        | 3           |
| PG-TO263-3           | Infineon    | D2PAK (SOT404)        | 3           |
| PG-TSDSON-8          | Infineon    | LFPAK33 (SOT1210)     | 8           |
| PMDT                 | Rohm        | SOD128                | 2           |
| PMDU                 | Rohm        | SOD123W               | 2           |
| Power DI3333-8       | Diodes Inc. | LFPAK33 (SOT1210)     | 8           |
| Power DI5060-8       | Diodes Inc. | LFPAK56D (SOT1205)    | 8           |
| Power DI5060-8       | Diodes Inc. | LFPAK56 (SOT669)      | 4           |
| Power- DI5060-8      | Diodes Inc  | LFPAK56E (SOT1023)    | 4           |
| Power- FLAT (6x5)    | ST          | LFPAK56E (SOT1023)    | 4           |
| Power FLAT 3.3 x 3.3 | ST          | LFPAK33 (SOT1210)     | 8           |
| Power FLAT 5x6 Dual  | ST          | LFPAK56D (SOT1205)    | 8           |
| Power FLAT 5x6 Dual  | ST          | LFPAK56 (SOT669)      | 4           |
| PowerDI123           | Diodes Inc. | SOD123F               | 2           |
| PowerDI123           | Diodes Inc. | SOD123W               | 2           |
| PowerDI323           | Diodes Inc. | SOD323F               | 2           |
| PowerDi5             | Diodes Inc. | CFP15 (SOT1289)       | 3           |
| PowerFLAT (6 x 5)    | ST          | LFPAK56 (SOT669)      | 5           |
| PowerFLAT (6 x 5)    | ST          | LFPAK56D (SOT1205)    | 5           |
| PowerPAK 1212-8      | Vishay      | LFPAK33 (SOT1210)     | 8           |
| PowerPAK 8x8L        | Vishay      | LFPAK88 (SOT1235)     | 4           |
| PowerPAK SC-70       | Vishay      | DFN2020-6 (SOT1118)   | 6           |
| PowerPAK SC-70       | Vishay      | DFN2020MD-6 (SOT1220) | 6           |
| PowerPAK SC706L      | Vishay      | DFN2020-3 (SOT1061)   | 3           |
| PowerPak SC-70-6L    | Vishay      | DFN2020-6 (SOT1118)   | 6           |
| PowerPAK SC-75*      | Vishay      | DFN2020MD-6 (SOT1220) | 6           |
| PowerPak SC-75-6L*   | Vishay      | DFN2020MD-6 (SOT1220) | 6           |
| PowerPAK SO-8        | Vishay      | LFPAK56 (SOT669)      | 5           |
| PowerPAK SO-8(L)     | Vishay      | LFPAK56 (SOT669)      | 4           |
| PowerPAK SO-8(L)     | Vishay      | LFPAK56E (SOT1023)    | 4           |
| PowerPAK SO-8L Dual  | Vishay      | LFPAK56D (SOT1205)    | 8           |
| PW-Mini              | Toshiba     | SOT89                 | 3           |
| S08                  | Vishay      | SOT96                 | 8           |
| SC2                  | Toshiba     | DSN0603-2 (SOD962)    | 2           |
| SC59                 | Diodes Inc. | SOT23                 | 3           |
| SC70                 | ON Semi     | SOT323                | 3           |
| SC-70                | ON Semi     | SOT323                | 3           |
| SC-70, 3 leads       | Vishay      | SOT323                | 3           |
| SC70-3               | AOS         | SOT323                | 3           |
| SC70-3               | Vishay      | SOT323                | 3           |
| SC70-5L              | Semtech     | SOT353                | 5           |
| SC70-6               | AOS         | SOT363                | 6           |
| SC70-6               | Fairchild   | SOT363                | 6           |
| SC70-6               | Vishay      | SOT363                | 6           |
| SC70-6L              | Semtech     | SOT363                | 6           |

| Type                         | Competitor | Nexperia              | Pins/ Leads |
|------------------------------|------------|-----------------------|-------------|
| SC74 TSOP6                   | Infineon   | SOT457                | 6           |
| SC-74 TSOP-6                 | ON Semi    | SOT457                | 6           |
| SC75                         | Infineon   | DFN1006-3 (SOT883)    | 3           |
| SC75                         | ON Semi    | DFN1006-3 (SOT883)    | 3           |
| SC-75                        | ON Semi    | DFN1006-3 (SOT883)    | 3           |
| SC-75                        | Semtech    | DFN1006-3 (SOT883)    | 3           |
| SC75A                        | Vishay     | DFN1006-3 (SOT883)    | 3           |
| SC-75A                       | Vishay     | DFN1006-3 (SOT883)    | 3           |
| SC79                         | Infineon   | SOD523                | 2           |
| SC-88                        | ON Semi    | SOT363                | 6           |
| SC88/SC 7 0-6/SOT 363 6 LEAD | ON Semi    | SOT363                | 6           |
| SC-88A                       | ON Semi    | SOT353                | 5           |
| SC89-3                       | Fairchild  | DFN1006-3 (SOT883)    | 3           |
| SC89-3                       | ON Semi    | DFN1006-3 (SOT883)    | 3           |
| SC89-3                       | Vishay     | DFN1006-3 (SOT883)    | 3           |
| S-Flat                       | Toshiba    | SOD123F               | 2           |
| S-Flat                       | Toshiba    | SOD123W               | 2           |
| SGP0603P2X3                  | Semtech    | DFN0603-2 (SOD972E)   | 2           |
| SL2                          | Toshiba    | DFN0603-2 (SOD972E)   | 2           |
| SLP0402P2X3                  | Semtech    | DSN0402-2 (SOD992)    | 2           |
| SLP1006P2                    | Semtech    | DFN1006-2 (SOD882)    | 2           |
| SLP1006P2T                   | Semtech    | DFN1006D-2 (SOD882D)  | 2           |
| SLP1006P3                    | Semtech    | DFN1006-3 (SOT883)    | 3           |
| SLP1006P3T                   | Semtech    | DFN1006B-3 (SOT883B)  | 3           |
| SLP1510N6                    | Semtech    | DFN1410-6 (SOT886)    | 6           |
| SLP1610N2                    | Semtech    | DFN1608D-2 (SOD1608)  | 2           |
| SLP1610P4                    | Semtech    | DFN2510A-10 (SOT1176) | 10          |
| SLP1616P6                    | Semtech    | DFN1616-6 (SOT1189)   | 6           |
| SLP1713P8                    | Semtech    | DFN1714-8 (SOT1166)   | 8           |
| SLP1713P8                    | Semtech    | DFN1714U-8 (SOT983)   | 8           |
| SLP2513P12                   | Semtech    | DFN2514-12 (SOT1167)  | 12          |
| SLP3313P16                   | Semtech    | DFN3314-16 (SOT1168)  | 16          |
| SM6 VS-6                     | Toshiba    | SOT457                | 6           |
| SMA flat                     | ST         | SOD128                | 2           |
| SMD TO-263                   | Renesas    | D2PAK (SOT404)        | 3           |
| SMD0402                      | Rohm       | DSN0402-2 (SOD992)    | 2           |
| SMD6/SMT6                    | Rohm       | SOT457                | 6           |
| SMD6/SMZ6                    | Rohm       | SOT457                | 6           |
| S-Mini                       | Toshiba    | SOT23                 | 3           |
| S-Mini TSM                   | Toshiba    | SOT23                 | 3           |
| SMPAK                        | Renesas    | DFN1006-3 (SOT883)    | 3           |
| SMPC TO-277A                 | Vishay     | CFP15 (SOT1289)       | 3           |
| SMT3                         | Rohm       | SOT23                 | 3           |
| SMT5*                        | Rohm       | SOT457                | 6           |
| SMT6                         | Rohm       | SOT457                | 6           |
| SMZ6/SMD6                    | Rohm       | SOT457                | 6           |
| SO-8 FL                      | ON Semi    | LFPAK56 (SOT669)      | 5           |

Types with \* show footprint compatibility only

## Package cross reference list

| Type               | Competitor        | Nexperia              | Pins/<br>Leads |
|--------------------|-------------------|-----------------------|----------------|
| SO-8 FL, DFN-5     | ON Semi           | LFPAK56E (SOT1023)    | 4              |
| SO-8FL Dual        | OnSemi            | LFPAK56D (SOT1205)    | 8              |
| SO-8FL Dual        | OnSemi            | LFPAK56 (SOT669)      | 4              |
| SOD-123            | ST                | SOD123F               | 2              |
| SOD-123-FL         | ON Semi           | SOD123F               | 2              |
| SOD-123-FL         | ON Semi           | SOD123W               | 2              |
| SOD323             | Infineon          | SOD323                | 2              |
| SOD323             | Semtech           | SOD323                | 2              |
| SOD323             | Vishay            | SOD323                | 2              |
| SOD-323            | Diodes Inc.       | SOD323                | 2              |
| SOD-323            | ON Semi           | SOD323                | 2              |
| SOD-323            | ST                | SOD323                | 2              |
| SOD523             | Diodes Inc.       | SOD523                | 2              |
| SOD523             | Semtech           | SOD523                | 2              |
| SOD523             | Vishay            | SOD523                | 2              |
| SOD-523            | ON Semi           | SOD523                | 2              |
| SOD-523            | ST                | SOD523                | 2              |
| SOD882             | ST                | DFN1006-2 (SOD882)    | 2              |
| SOD882T            | ST                | DFN1006D-2 (SOD882D)  | 2              |
| SOD923-2*          | ON Semi           | DFN1006-2 (SOD882)    | 2              |
| SOIC-8 NB          | ON Semi           | SOT96                 | 8              |
| SON 2x2            | Texas Instruments | DFN2020MD-6 (SOT1220) | 6              |
| SON 3x3*           | Texas Instruments | DFN2020MD-6 (SOT1220) | 6              |
| SOP / DSOP Advance | Toshiba           | LFPAK56E (SOT1023)    | 4              |
| SOP / DSOP Advance | Toshiba           | LFPAK56 (SOT669)      | 4              |
| SOP8               | Rohm              | SOT96                 | 8              |
| SOP-8              | Renesas           | SOT96                 | 8              |
| SOT 143            | Infineon          | SOT143B               | 4              |
| SOT063*            | ON Semi           | DFN1010B-6 (SOT1216)  | 6              |
| SOT-143            | Diodes Inc.       | SOT143B               | 4              |
| SOT-143            | Semtech           | SOT143B               | 4              |
| SOT223             | Diodes Inc.       | SOT223                | 4              |
| SOT223             | Fairchild         | SOT223                | 4              |
| SOT223             | Infineon          | SOT223                | 4              |
| SOT223             | ON Semi           | SOT223                | 4              |
| SOT223             | Vishay            | SOT223                | 4              |
| SOT-223            | Diodes Inc.       | SOT223                | 4              |
| SOT-223            | Infineon          | SOT223                | 4              |
| SOT-223            | ON Semi           | SOT223                | 4              |
| SOT-223            | OnSemi            | SOT223                | 4              |
| SOT-223            | ST                | SOT223                | 4              |
| SOT23              | AOS               | SOT23                 | 3              |
| SOT23              | Diodes Inc.       | SOT23                 | 3              |
| SOT23              | Infineon          | SOT23                 | 3              |
| SOT23              | ON Semi           | SOT23                 | 3              |
| SOT23              | Semtech           | SOT23                 | 3              |
| SOT23              | ST                | SOT23                 | 3              |
| SOT23              | Vishay            | SOT23                 | 3              |

| Type        | Competitor  | Nexperia             | Pins/<br>Leads |
|-------------|-------------|----------------------|----------------|
| SOT-23      | Diodes Inc. | SOT23                | 3              |
| SOT-23      | ON Semi     | SOT23                | 3              |
| SOT23-3     | AOS         | SOT23                | 3              |
| SOT23-3     | Diodes Inc. | SOT23                | 3              |
| SOT23-3     | ON Semi     | SOT23                | 3              |
| SOT23-5     | AOS         | SOT457               | 6              |
| SOT23-5     | Diodes Inc. | SOT457               | 6              |
| SOT23-6     | Diodes Inc. | SOT457               | 6              |
| SOT23-6     | Diodes Inc. | SOT457               | 6              |
| SOT23-6     | ST          | SOT457               | 6              |
| SOT23-6L    | Semtech     | SOT457               | 6              |
| SOT23F      | Diodes Inc. | SOT23                | 3              |
| SOT23F      | Toshiba     | SOT23                | 3              |
| SOT26       | Diodes Inc. | SOT457               | 6              |
| SOT323      | Diodes Inc. | SOT323               | 3              |
| SOT323      | Fairchild   | SOT323               | 3              |
| SOT323      | Infineon    | SOT323               | 3              |
| SOT-323     | Diodes Inc. | SOT323               | 3              |
| SOT-323     | ST          | SOT323               | 3              |
| SOT353      | Diodes Inc. | SOT353               | 5              |
| SOT353      | Diodes Inc. | SOT363               | 6              |
| SOT353      | Vishay      | SOT353               | 5              |
| SOT363      | Diodes Inc. | SOT363               | 6              |
| SOT363      | Infineon    | SOT363               | 6              |
| SOT-363     | Diodes Inc. | SOT363               | 6              |
| SOT523      | Diodes Inc. | DFN1006-3 (SOT883)   | 3              |
| SOT523F     | Fairchild   | DFN1006-3 (SOT883)   | 3              |
| SOT723*     | ON Semi     | DFN1010D-3 (SOT1215) | 3              |
| SOT723-3*   | ON Semi     | DFN1010D-3 (SOT1215) | 3              |
| SOT89       | Diodes Inc. | SOT89                | 3              |
| SOT89       | Infineon    | SOT89                | 3              |
| SOT-89      | ON Semi     | SOT89                | 3              |
| SOT89-3L    | Diodes Inc. | SOT89                | 3              |
| SOT963      | ON Semi     | DFN1010-6 (SOT891)   | 6              |
| SOT963*     | Diodes Inc. | DFN1010B-6 (SOT1216) | 6              |
| SRP-F       | Renesas     | SOD123W              | 2              |
| SS CSP2     | Toshiba     | DFN1006-3 (SOT883)   | 3              |
| SSD3/SS3    | Rohm        | SOT23                | 3              |
| SSM         | Toshiba     | DFN1006-3 (SOT883)   | 3              |
| SSOT3       | Fairchild   | SOT23                | 3              |
| SSOT6       | Fairchild   | SOT457               | 6              |
| SSOT6 FLMP  | Fairchild   | SOT457               | 6              |
| SST3        | Rohm        | SOT23                | 3              |
| SST3/SSD3   | Rohm        | SOT23                | 3              |
| ST01005     | STM         | DSN0402-2 (SOD992)   | 2              |
| Stmite flat | ST          | SOD123W              | 2              |
| T0263       | Diodes Inc. | D2PAK(SOT404)        | 3              |
| T0263-3     | Infineon    | D2PAK (SOT404)       | 3              |

Types with \* show footprint compatibility only

## Package cross reference list

| Type                | Competitor  | Nexperia               | Pins/<br>Leads |
|---------------------|-------------|------------------------|----------------|
| Thin PowerPAK SC70  | Vishay      | DFN2020MD-6 (SOT1220)  | 6              |
| Thin PowerPAK SC-70 | Vishay      | DFN2020-6 (SOT1118)    | 6              |
| Thin PowerPAK SC75* | Vishay      | DFN2020MD-6 (SOT1220)  | 6              |
| TO220               | Infineon    | TO-220 (SOT78)         | 3              |
| TO-220              | ST          | TO-220 (SOT78)         | 3              |
| TO-220              | Toshiba     | TO-220 (SOT78)         | 3              |
| TO-220              | Vishay      | TO-220 (SOT78)         | 3              |
| TO220-3             | Diodes Inc. | TO-220 (SOT78)         | 3              |
| TO-220-3            | OnSemi      | TO-220 (SOT78)         | 3              |
| TO-220-3L           | OnSemi      | TO-220 (SOT78)         | 3              |
| TO-220AB            | Vishay      | TO-220 (SOT78)         | 3              |
| TO-220F-3FS         | OnSemi      | TO-220 (SOT78)         | 3              |
| TO-220FM            | Rohm        | TO-220 (SOT78)         | 3              |
| TO-220S             | Renesas     | D2PAK (SOT404)         | 3              |
| TO-220SM            | Toshiba     | D2PAK (SOT404)         | 3              |
| TO262               | Infineon    | I2PAK (SOT226)         | 3              |
| TO-262              | Renesas     | I2PAK (SOT226)         | 3              |
| TO-262              | Vishay      | I2PAK (SOT226)         | 3              |
| TO-262-2L           | OnSemi      | I2PAK (SOT226)         | 3              |
| TO-262-3L           | OnSemi      | I2PAK (SOT226)         | 3              |
| TO263               | Diodes Inc. | D2PAK (SOT404)         | 3              |
| TO-263              | Renesas     | D2PAK-7 (SOT427)       | 7              |
| TO-263              | Renesas     | D2PAK (SOT404)         | 3              |
| TO-263              | Vishay      | D2PAK (SOT404)         | 3              |
| TO-263 3-lead       | Vishay      | D2PAK (SOT404)         | 3              |
| TO-263-2L           | OnSemi      | D2PAK (SOT404)         | 3              |
| TO-263AB            | Vishay      | D2PAK (SOT404)         | 3              |
| To-LL               | Infineon    | LFPAK88 (SOT1235)      | 4              |
| To-LL               | ON Semi     | LFPAK88 (SOT1235)      | 4              |
| TSLP-2-1            | Infineon    | DFN1006-2 (SOD882)     | 2              |
| TSLP-2-7/-17        | Infineon    | DFN1006D-2 (SOD882D)   | 2              |
| TSLP-3-1, -15       | Infineon    | DFN1006B-3 (SOT883B)   | 3              |
| TSLP-3-4            | Infineon    | DFN1006-3 (SOT883)     | 3              |
| TSLP-9-1            | Infineon    | DFN2510A-10 (SOT 1176) | 10             |
| TSMT5*              | Rohm        | SOT457                 | 6              |
| TSMT6               | Rohm        | SOT457                 | 6              |
| TSNP-2-2            | Infineon    | DFN1608D-2 (SOD 1608)  | 2              |
| TSON Advance        | Toshiba     | LFPAK33 (SOT1210)      | 8              |
| TSOP6               | AOS         | SOT457                 | 6              |
| TSOP6               | ON Semi     | SOT457                 | 6              |
| TSOP6               | Vishay      | SOT457                 | 6              |
| TSOP-6              | Renesas     | SOT457                 | 6              |
| TSOP-6/ TSOP6       | Vishay      | SOT457                 | 6              |
| TSSLP-2-1           | Infineon    | DSN0603-2 (SOD962)     | 2              |
| TSST8*              | Rohm        | DFN2020MD-6 (SOT1220)  | 6              |
| TUMT3               | Rohm        | SOT323                 | 3              |
| TUMT5*              | Rohm        | DFN2020-6 (SOT1118)    | 6              |
| TUMT6*              | Rohm        | DFN2020-6 (SOT1118)    | 6              |

| Type                                  | Competitor  | Nexperia              | Pins/<br>Leads |
|---------------------------------------|-------------|-----------------------|----------------|
| UDFN 1.6 x 1.6                        | ON Semi     | DFN1616-6 (SOT1189)   | 6              |
| UDFN 1.7 x 1.35, 0.4P                 | ON Semi     | DFN1714U-8 (SOT983)   | 8              |
| UDFN10 2.5 x 1, 0.5P                  | ON Semi     | DFN2510A-10 (SOT1176) | 10             |
| UDFN12 2.5 x 1.35, 0.4P               | ON Semi     | DFN2514-12 (SOT1167)  | 12             |
| U-DFN2020-3<br>Type B 2.0 x 2.0 x 0.6 | Diodes Inc. | DFN2020-3 (SOT1061)   | 3              |
| U-DFN2020-6                           | Diodes Inc. | DFN2020MD-6 (SOT1220) | 6              |
| UDFN2020-6 Type B                     | Diodes Inc. | DFN2020-6 (SOT1118)   | 6              |
| UDFN2020-6 Type E                     | Diodes Inc. | DFN2020MD-6 (SOT1220) | 6              |
| U-DFN2523-6*                          | Diodes Inc. | DFN2020MD-6 (SOT1220) | 6              |
| UDFN6                                 | ON Semi     | DFN2020MD-6 (SOT1220) | 6              |
| UDFN6                                 | Toshiba     | DFN2020-6 (SOT1118)   | 6              |
| UDFN-6 WDFN6                          | ON Semi     | DFN2020MD-6 (SOT1220) | 6              |
| UDFN6B                                | Toshiba     | DFN2020MD-6 (SOT1220) | 6              |
| UF6                                   | Toshiba     | SOT363                | 6              |
| UF6/ USV/ US6                         | Toshiba     | SOT363                | 6              |
| UFP                                   | Renesas     | SOD523                | 2              |
| UMD2                                  | Rohm        | SOD323F               | 2              |
| UMD3/UMT3                             | Rohm        | SOT323                | 3              |
| UMD5/UMT5                             | Rohm        | SOT353                | 5              |
| UMD6/ UMT6                            | Rohm        | SOT363                | 6              |
| UMLP 1.6 x 1.6*                       | Fairchild   | DFN2020MD-6 (SOT1220) | 6              |
| UMT3                                  | Rohm        | SOT323                | 3              |
| UMT3F*                                | Rohm        | SOT323                | 3              |
| UMT5/ UMD5                            | Rohm        | SOT353                | 5              |
| UMT6                                  | Rohm        | SOT363                | 6              |
| UMT6/ UMD6                            | Rohm        | SOT363                | 6              |
| UPAK (SOT89)                          | Renesas     | SOT89                 | 3              |
| URP                                   | Renesas     | SOD323                | 2              |
| US6                                   | Toshiba     | SOT363                | 6              |
| US6/ UF6/ USV                         | Toshiba     | SOT363                | 6              |
| use                                   | Toshiba     | SOD323                | 2              |
| US-Flat                               | Toshiba     | SOD323F               | 2              |
| USM                                   | Toshiba     | SOT323                | 3              |
| USV                                   | Toshiba     | SOT353                | 5              |
| USV                                   | Toshiba     | SOT363                | 6              |
| USV/ US6/ UF6/                        | Toshiba     | SOT363                | 6              |
| VESM*                                 | Toshiba     | DFN1010D-3 (SOT1215)  | 3              |
| VML0806*                              | Rohm        | DFN1006B-3 (SOT883B)  | 3              |
| VML1006                               | Rohm        | DFN1006-3 (SOT883)    | 3              |
| VMN2*                                 | Rohm        | DFN1006-2 (SOD882)    | 2              |
| VMN2*                                 | Rohm        | DFN1006D-2 (SOD882D)  | 2              |
| VMN3*                                 | Rohm        | DFN1006-3 (SOT883)    | 3              |
| VMT3*                                 | Rohm        | DFN1010D-3 (SOT1215)  | 3              |
| VMT6*                                 | Rohm        | DFN1010B-6 (SOT1216)  | 6              |
| V56                                   | Toshiba     | SOT457                | 6              |
| WDFN3                                 | ON Semi     | DFN2020-3 (SOT1061)   | 3              |
| W-DFN3020-8*                          | Diodes Inc. | DFN2020-6 (SOT1118)   | 6              |

Types with \* show footprint compability only

## Package cross reference list

| Type            | Competitor        | Nexperia              | Pins/<br>Leads |
|-----------------|-------------------|-----------------------|----------------|
| WDFN6           | ON Semi           | DFN2020-6 (SOT1118)   | 6              |
| WDFN6           | ON Semi           | DFN2020MD-6 (SOT1220) | 6              |
| WDFN-8          | OnSemi            | LFPK33 (SOT1210)      | 8              |
| WLCSP 1 x 1*    | Fairchild         | WLCSP4                | 3              |
| WLCSP1.6 x 1.6* | AOS               | WLCSP6                | 6              |
| WLCSP2          | ON Semi           | DSN0603-2 (SOD962)    | 2              |
| WLCSP-4*        | Fairchild         | WLCSP4                | 3              |
| WLCSP-4*        | ON Semi           | WLCSP4                | 3              |
| WLL-2-2         | Infineon          | DSN0402-2 (SOD992)    | 2              |
| WLL-2-2         | Infineon          | DSN0402B-2 (SOD992B)  | 2              |
| WLP1.5x 1.5*    | Texas Instruments | DFN2020MD-6 (SOT1220) | 6              |
| WLPI.Ox 1.0*    | Texas Instruments | DFN1010D-3 (SOT1215)  | 3              |
| WLPI.Ox 1.5*    | Texas Instruments | DFN2020MD-6 (SOT1220) | 6              |
| X1 -DFN 1006-3  | Diodes Inc.       | DFN1006-3 (SOT883)    | 3              |
| X1-DFN1212-3*   | Diodes Inc.       | DFN1010D-3 (SOT1215)  | 3              |
| X1-DFN1616-6*   | Diodes Inc.       | DFN2020MD-6 (SOT1220) | 6              |
| X2-DFN0806-3    | Diodes Inc.       | DFN1006-3 (SOT883)    | 3              |
| X2-DFN1006-2    | Diodes Inc.       | DFN1006D-2 (SOD882D)  | 2              |
| X2-DFN1006-3    | Diodes Inc.       | DFN1006B-3 (SOT883B)  | 3              |
| X2-DFN1010-3    | Diodes Inc.       | DFN1010D-3 (SOT1215)  | 3              |
| X2-DFN1310-6*   | Diodes Inc.       | DFN1010B-6 (SOT1216)  | 6              |
| X2-DFN2015-3*   | Diodes Inc.       | DFN2020MD-6 (SOT1220) | 6              |
| X2-DFN2020-6    | Diodes Inc.       | DFN2020MD-6 (SOT1220) | 6              |
| X3-DFN0603-2    | Diodes Inc.       | DFN0603-2 (SOD972E)   | 2              |
| X3-DFN0603-2    | Diodes Inc.       | DSN0603-2 (SOD962)    | 2              |
| X3DFN2          | ON Semi           | DFN0603-2 (SOD972E)   | 2              |
| X3DFN-2         | ON Semi           | DSN0603-2 (SOD962)    | 2              |
| XDFN3           | ON Semi           | DFN1006-3 (SOT883)    | 3              |
| XI-DFN1006-2    | Diodes Inc.       | DFN1006-2 (SOD882)    | 2              |

Types with \* show footprint compatibility only

## Package cross reference matrix

| Pins/<br>leads | Nexperia                 | Industry<br>standard<br>names | Size<br>(l x w x h)<br>(mm) | P <sub>tot</sub><br>(mW) | Package | Competitor synonyms    |                       |                               |   |                          |  |                    |  |                  |
|----------------|--------------------------|-------------------------------|-----------------------------|--------------------------|---------|------------------------|-----------------------|-------------------------------|---|--------------------------|--|--------------------|--|------------------|
|                |                          |                               |                             |                          |         | Rohm                   | Toshiba               | ON Semi                       | Renesas   | Infineon                 | Diodes Inc                               | ST                 | Vishay   | Semtech          |
| 2              | DSN0402-2<br>(SOD992)    |                               | 0.4 x 0.2 x<br>0.12         |                          |         | SMD0402                | CL2                   | DSN2<br>0.4 x 0.2             |   |                          |  | ST01005            |  | SLP-<br>0402P2X3 |
|                | DSN0402B-2<br>(SOD992B)  |                               | 0.43 x 0.23 x<br>0.12       |                          |         |                        |                       |                               |   |                          |  |                    |  |                  |
|                | DFN0603-2<br>(SOD972E)   |                               | 0.63 x 0.33 x<br>0.25       |                          |         |                        | SL2                   | X3DFN2                        |   |                          | X3-<br>DFN0603-2                         |                    |  | SGP-<br>0603P2X3 |
|                | DSN1006-2<br>(SOD993)    |                               | 1.0 x 0.6 x 0.3             |                          |         |                        |                       | DSN2<br>1.0 x 0.6             |   |                          |  |                    |  |                  |
|                | DSN1006U-2<br>(SOD995)   |                               | 1.0 x 0.6 x 0.3             |                          |         |                        |                       | DSN2<br>1.0 x 0.6             |   |                          |  |                    |  |                  |
|                | DFN1006-2<br>(SOD882)    |                               | 1.0 x 0.6 x<br>0.48         | 250                      |         | (VMN2)                 | CTS2<br>(f5C)         | (SOD923-2)                    |   | TSLP-2-1                 | XI-DFN1006-2                             | SOD 882<br>uQFN-2L | LLP1006-2M<br>LLP1006-2L                       | SLP1006P2        |
|                | DFN1006D-2<br>(SOD882D)  |                               | 1.0 x 0.6 x<br>0.37         | 250                      |         | (VMN2)                 | CTS2<br>(f5C)         | DSN2<br>1.0 x 0.6             |   | TSLP-2-7/<br>-17         | X2-<br>DFN1006-2                         | SOD882T            | LLP1006-2L<br>LLP1006-2M                       | SLP1006P2T       |
|                | DFN1608D-2<br>(SOD1608)  |                               | 1.6 x 0.8 x<br>0.37         | 780                      |         | KMD2                   |                       | DSN2<br>1.6 x 0.8             |   | TSNP-2-2                 |  |                    |  | SLP1610N2        |
|                | DSN0603-2<br>(SOD962)    |                               | 0.6 x 0.3 x 0.3             | 525                      |         | GMD2                   | SC2                   | DSN2,<br>X3DFN-2<br>WLCSP2    | MP6   | TSSLP-2-1                | X3-<br>DFN0603-2                         | DFN2               | CLP0603  | SLP-<br>0603P2X3 |
|                | SOD80C                   | Mini-<br>Melf                 | 3.5 x 1.5 x 1.5             | 300                      |         | LLDS                   |                       |                               | LLD   |                          | MiniMelf                                 | MiniMelf           | MiniMelf                                       |                  |
|                | SOD123F                  |                               | 2.6 x 1.6 x 1.1             | 830                      |         |                        | S-Flat                | SOD-123-FL                    |   |                          | PowerDI123                               | SOD-123            |  |                  |
|                | SOD123W                  |                               | 2.6 x 1.7 x 1.0             | 900                      |         | PMDU                   | S-Flat                | SOD-123-FL                    | SRP-F   |                          | PowerDI123                               | Stmite flat        |  |                  |
|                | SOD128                   |                               | 3.8 x 2.5 x 1.0             | 1000                     |         | PMDT                   | M-Flat                |                               |   |                          |  | SMA flat           |  |                  |
|                | SOD323                   | SC-76                         | 1.7 x 1.25 x<br>0.95        | 400                      |         |                        | USC                   | SOD-323                       | URP   | SOD323                   | SOD-323                                  | SOD-323            | SOD323   | SOD323           |
|                | SOD323F                  | SC-90                         | 1.7 x 1.25<br>x 0.7         | 830                      |         | UMD2                   | US-Flat               |                               |   |                          | PowerDI323                               |                    |  |                  |
|                | SOD523                   | SC-79                         | 1.2 x 0.8 x 0.6             | 500                      |         | EMD2                   | ESC/<br>TESC          | SOD-523                       | UFP   | SC79                     | SOD523                                   | SOD-523            | SOD523   | SOD523           |
| 3              | CFP15<br>(SOT1289)       |                               | 5.8 x 4.3 x<br>0.78         | 1200                     |         |                        |                       |                               |   |                          | PowerDi5                                 |                    | SMPC<br>TO-277A                                |                  |
|                | DFN1006-3<br>(SOT883)    | SC-101                        | 1.0 x 0.6 x<br>0.48         | 250                      |         | VML1006                | SS CSP2               | XDFN3                         |   | TSLP-3-4                 | X1-DFN<br>1006-3                         |                    | SLP1006P3                                      |                  |
|                | DFN1006B-3<br>(SOT883B)  |                               | 1.0 x 0.6 x<br>0.37         | 250                      |         | VML1006                | CST3                  | XDFN3                         |   | TSLP-3-1,<br>-15         | X2-<br>DFN1006-3                         |                    | SLP1006P3T                                     |                  |
|                | DFN1010D-3<br>(SOT1215)  |                               | 1.1 x 1.0 x<br>0.37         | 325                      |         | (VMT3)                 | (VESM)                | (SOT723)                      |   |                          | X2-<br>DFN1010-3                         |                    |  |                  |
|                | DFN2020-3<br>(SOT1061)   | HUSON3                        | 2.0 x 2.0 x<br>0.62         | 1300                     |         |                        |                       | WDFN3                         |   |                          | U-DFN2020-3<br>Type B 2.0 x<br>2.0 x 0.6 |                    | PowerPAK<br>SC706L                             |                  |
|                | DFN2020D-3<br>(SOT1061D) |                               | 2.0 x 2.0 x<br>0.62         | 1300                     |         |                        |                       | WDFN3                         |   |                          | U-DFN2020-3<br>Type B 2.0 x<br>2.0 x 0.6 |                    | PowerPAK<br>SC706L                             |                  |
|                | D2PAK<br>(SOT404)        |                               | 11.0 x 11.0<br>x 4.3        |                          |         | LPDS/<br>LPTS          | TO-<br>220SM<br>D2PAK | D2PAK<br>D2PAK 3<br>TO-263-2L | TO-220S /<br>SMD TO-263<br>LDBAK(S)-(1)<br>MP-25Z | D2PAK,<br>PG-<br>T0263-3 | T0263<br>(D2PAK)                         | D2PAK,<br>H2PAK-2  | TO-263 3-lead<br>TO-263AB /<br>D2PAK<br>TO-263 |                  |
|                | SOT23                    |                               | 2.9 x 1.3 x 1.0             | 250                      |         | SSD3/<br>SST3          | S-Mini<br>TSM         | SOT-23                        | MPAK  | SOT23                    | SOT-23                                   | SOT23              | SOT23  | SOT23            |
|                | SOT89                    | SC-62                         | 4.5 x 2.5 x 1.5             | 1300                     |         | MPT3                   | PW-Mini               | SOT-89                        | UPAK<br>(SOT89)                                   | SOT89                    | SOT89                                    |                    |  |                  |
|                | SOT323                   | SC-70                         | 2.0 x 1.25 x<br>0.95        | 200                      |         | UMD3/<br>UMT3<br>TUMT3 | USM                   | SC-70                         | CMAK/<br>CMPAK                                    | SOT323                   | SOT-323                                  | SOT-323            | SC-70 3 leads                                  | SOT-323          |

Types in brackets (...) show footprint compatibility only







## Package cross reference matrix

| Pins/<br>leads         | Nexperia                      | Industry<br>standard<br>names | Size<br>(L x w x h)<br>(mm) | P <sub>tot</sub><br>(mW)  | Package   | Competitor synonyms         |                          |  |                    |                          |                       |                            |   |           |
|------------------------|-------------------------------|-------------------------------|-----------------------------|---|---|-----------------------------|--------------------------|--|--------------------|--------------------------|-----------------------|----------------------------|---|-----------|
|                        |                               |                               |                             |   |   | Rohm                        | Toshiba                  | ON Semi                                | Renesas            | Infineon                 | Diodes Inc            | ST                         | Vishay                                      | Semtech   |
| 3                      | TO-220<br>(SOT78)             |                               | 15.6 x 10 x 4.4             |   |    | TO-220FM                    | TO-220                   | TO-220-3L,<br>TO-220F-3FS,<br>TO-220-3 | MP-25(K)           | PG-<br>TO220-3,<br>TO220 | TO220-3               | TO-220                     | TO-220, TO-<br>220AB                        |           |
|                        | I2PAK<br>(SOT226)             |                               | 11 x 10 x 4.3               |   |    |                             |                          | I2PAK,<br>TO-262-2L,<br>TO-262-3L      | MP-25SK,<br>TO-262 | PG-<br>TO262-3,<br>TO262 |                       | I2PAK                      | TO-262                                      |           |
| 4                      | LFPAK56<br>(SOT669)           | Power-<br>S08                 | 4.9 x 4.45<br>x 1.0         | 3950  |    | HSOP8<br>(Single)           | SOP / DSOP<br>Advance    | SO-8 FL,<br>DFN-5                      | LFPAK56,<br>HSOP-8 | PG-TD-<br>SON-8          | Power-<br>Di5060-8    | Power-<br>FLAT<br>(6x5)    | PowerPAK<br>SO-8(L)                         |           |
|                        | SOT143B                       |                               | 2.9 x 1.3 x 1.0             | 250   |    |                             | CP4                      |  | MPAK-4R            | SOT143                   | SOT-143               |                            | SOT-143                                     |           |
|                        | LFPAK56E<br>(SOT1023)         |                               | 6.2 x 5.3 x 1.1             | 500W  |    | HSOP8<br>(Single)           | SOP /<br>DSOP<br>Advance | SO-8 FL,<br>DFN-5                      | LFPAK56,<br>HSOP-8 | PG-TD-<br>SON-8          | Power-<br>Di5060-8    | Power-<br>FLAT<br>(6x5)    | PowerPAK<br>SO-8(L)                         |           |
|                        | SOT223                        | SC-73                         | 6.5 x 3.5 x<br>1.65         | 1700  |    |                             |                          | SOT-223                                |                    | SOT223                   | SOT-223               |                            | SOT223                                      |           |
| LFPAK88<br>(SOT1235)   |                               | 8 x 8 x 1.6                   |                             |    |   |                             | To-LL                    |  | To-LL              |                          |                       | PowerPAK<br>8x8L           |   |           |
| 5                      | SOT353                        | SC-88 A                       | 2.0 x 1.25 x<br>0.95        | 300   |    | UMD5/<br>UMT5               | USV                      | SC-88 A                                | CMPAK-<br>5C0      |                          | SOT353                |                            | SOT353                                      | SC70-5L   |
| 6                      | DFN1010-6<br>(SOT891)         | XSON6                         | 1.0 x 1.0 x<br>0.48         |   |    |                             |                          | CS6                                    | SOT963             |                          |                       |                            |   |           |
|                        | DFN1010B-6<br>(SOT1216)       |                               | 1.1 x 1.0 x<br>0.37         | 350   |    | (VMT6)                      | (FS6)                    | (SOT063)                               |                    |                          | (SOT963)              |                            |   |           |
|                        | DFN1410-6<br>(SOT886)         | XSON6                         | 1.45 x 1.0 x<br>0.48        | 250   |    |                             |                          |  |                    |                          |                       |                            |   | SLP1510N6 |
|                        | DFN1616-6<br>(SOT1189)        | HXSON6                        | 1.6 x 1.6 x<br>0.48         |   |   |                             |                          | UDFN 1.6<br>x 1.6                      |                    |                          |                       |                            | LLP75-/L                                    | SLP1616P6 |
|                        | DFN2020-6<br>(SOT1118)        |                               | 2.0 x 2.0 x<br>0.62         | 1300  |  | HU-<br>ML2020L8<br>(Dual)   | UDFN6                    | 6 Lead<br>DFN<br>WDFN6                 |                    |                          | UDFN2020-<br>6 Type B |                            | PowerPAK<br>SC-70 Thin<br>PowerPAK<br>SC-70 |           |
|                        | DFN2020D-6<br>(SOT1118D)      |                               | 2.0 x 2.0 x<br>0.62         | 1300  |  | HU-<br>ML2020L8<br>(Dual)   | UDFN6                    | 6 Lead<br>DFN<br>WDFN6                 |                    |                          | UDFN2020-<br>6 Type B |                            | PowerPAK<br>SC-70 Thin<br>PowerPAK<br>SC-70 |           |
|                        | DFN-<br>2020MD-6<br>(SOT1220) |                               | 2.0 x 2.0 x<br>0.62         | 1250  |  | HU-<br>ML2020L8<br>(Single) | UDFN6B                   | UDFN-6<br>WDFN6                        |                    |                          | UDFN2020-<br>6 Type E |                            | PowerPAK<br>SC-70 Thin<br>PowerPAK<br>SC-70 |           |
|                        | SOT363                        | SC-88                         | 2.0 x 1.25 x<br>0.95        | 300   |  | UMD6/<br>UMT6               | US6<br>UF6<br>USV        | SC-88                                  | CMPAK-6            | SOT363                   | SOT-363               |                            | SC70-6                                      | SC70-6L   |
| SOT457                 | SC-74                         | 2.9 x 1.5 x 1.0               | 750                         |  | SMD6/<br>SMT6   | SM6 VS-6                    | SC-74<br>TSOP-6          | TSOP-6                                 | SC74<br>TSOP6      | SOT23-6<br>SOT26         |                       | TSOP6<br>TSOP-6            | SOT23-6L                                    |           |
| 8                      | LFPAK33<br>(SOT1210)          |                               | 3.3 x 3.3 x<br>0.85         | 790   |  | HSMT8                       | TSON<br>Advance          | µ8FL,<br>WDFN-8                        |                    | PG-TSD-<br>SON-8         | Power<br>Di3333-8     | Power<br>FLAT 3.3<br>x 3.3 | PowerPAK<br>1212-8                          |           |
|                        | LFPAK56D<br>(SOT1205)         |                               | 4.9 x 4.45<br>x 1.0         | 680   |  | HSOP8<br>(Dual)             |                          | SO-8FL<br>Dual, DFN-8                  | HSOP-8<br>dual     | PG-TD-<br>SON-8          | Power<br>Di5060-8     | Power<br>FLAT 5x6<br>Dual  | PowerPAK<br>SO-8L Dual                      |           |
|                        | SOT96                         | S08                           | 4.9 x 3.9 x<br>1.75         | 1500  |  | SOP8                        | FM8                      | SOIC-8 NB                              | SOP-8              |                          |                       |                            | S08   |           |
|                        | DFN1714-8<br>(SOT 1166)       | HUSON8                        | 1.7 x 1.35 x<br>0.52        |   |  |                             |                          |  |                    |                          |                       |                            |   | SLP1713P8 |
| DFN1714U-8<br>(SOT983) | HXSON8                        | 1.7 x 1.35 x<br>0.48          |                             |  |   |                             | UDFN 1.7 x<br>1.35, 0.4P |  |                    |                          |                       |                            | SLP1713P8                                   |           |
| 10                     | DFN2510-10<br>(SOT 1165)      | XSON10                        | 2.5 x 1.0 x<br>0.48         |   |  |                             |                          | UDFN10 2.5<br>x 1, 0.5P                |                    | TSLP-9-1                 |                       | pQFN-10L                   | SLP1610P4                                   |           |
|                        | DF-<br>N2510A-10<br>(SOT1176) | XSON10                        | 2.5 x 1.0 x<br>0.48         |   |  |                             |                          | UDFN10 2.5<br>x 1, 0.5P                |                    | TSLP-9-1                 |                       | pQFN-10L                   | SLP1610P4                                   |           |
|                        | DFN2626-10<br>(SOT 1197)      |                               | 2.6 x 2.6 x<br>0.48         |   |  |                             |                          | UDFN10 2.6<br>x 2.6, 0.5P              |                    |                          |                       |                            | SLP2626P10                                  |           |

Types in brackets (...) show footprint compatibility only

## Package cross reference

### Package cross reference matrix

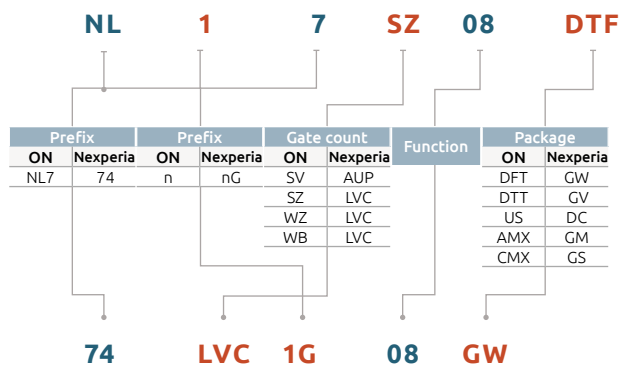
| Pins/leads | Nexperia              | Industry standard names | Size (l x w x h) (mm) | P <sub>tot</sub> (mW) | Package   | Competitor synonyms |         |                          |         |          |            |    |            |         |
|------------|-----------------------|-------------------------|-----------------------|-----------------------|---|---------------------|---------|--------------------------|---------|----------|------------|----|------------|---------|
|            |                       |                         |                       |                       |   | Rohm                | Toshiba | ON Semi                  | Renesas | Infineon | Diodes Inc | ST | Vishay     | Semtech |
| 12         | DFN2512-12 (SOT 1158) | HXSON12                 | 2.5 x 1.2 x 0.48      |                       |  |                     |         | UDFN12, 2.5 x 1.2, 0.4P  |         |          |            |    |            |         |
|            | DFN2514-12 (SOT 1167) | HUSON12                 | 2.5 x 1.35 x 0.53     |                       |  |                     |         | UDFN12, 2.5 x 1.35, 0.4P |         |          |            |    | SLP2513P12 |         |
| 16         | DFN3312-16 (SOT 1159) | HXSON16                 | 3.3 x 1.2 x 0.48      |                       |  |                     |         | UDFN 16, 3.5 x 1.2, 0.4P |         |          |            |    |            |         |
|            | DFN3314-16 (SOT 1168) | HUSON16                 | 3.3 x 1.35 x 0.53     |                       |  |                     |         |                          |         |          |            |    | SLP3313P16 |         |

Types in brackets (...) show footprint compatibility only

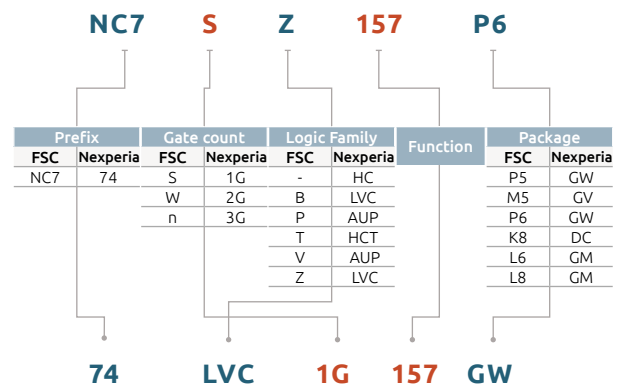
## Competitive cross reference - Logic

This cross reference allows you to match a competitor's part number to a Nexperia part number. Once you have the equivalent part number, check the Nexperia website [www.nexperia.com/logic](http://www.nexperia.com/logic) to confirm that the particular configuration is released.

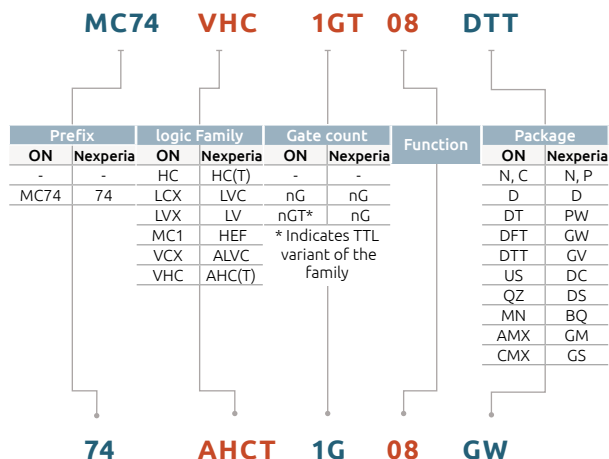
### On semiconductor low pin count logic



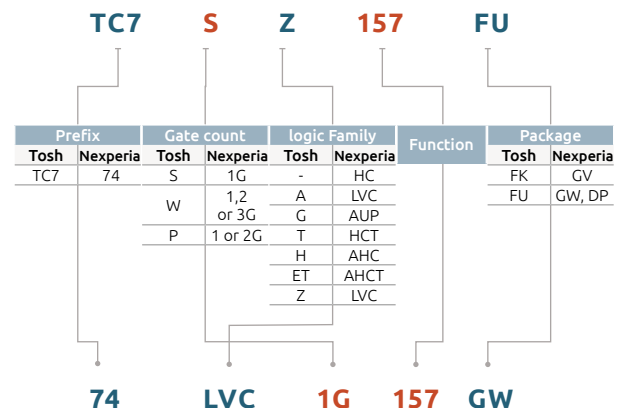
### Fairchild semiconductor tiny logic



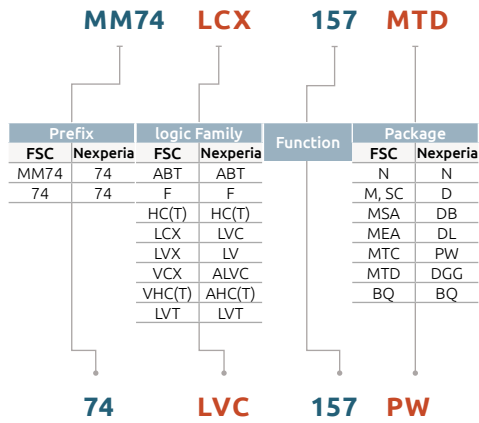
### On semiconductors logic



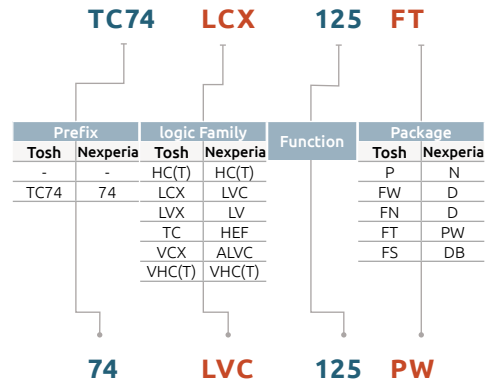
### Toshiba one gate



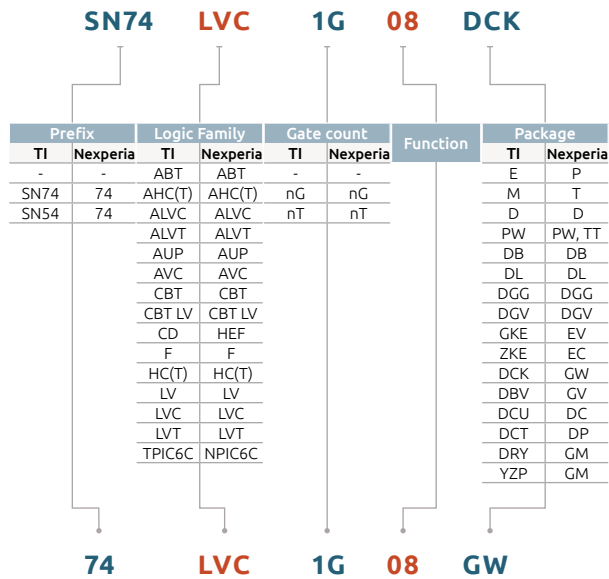
Fairchild semiconductor standard logic



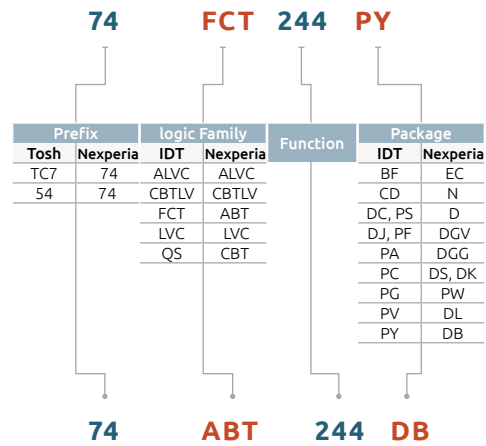
Toshiba standard logic



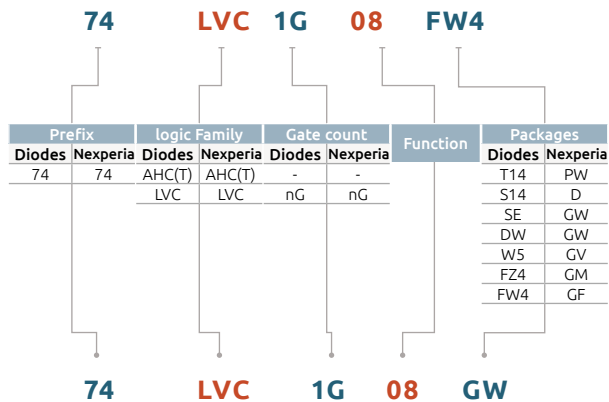
Texas instruments logic



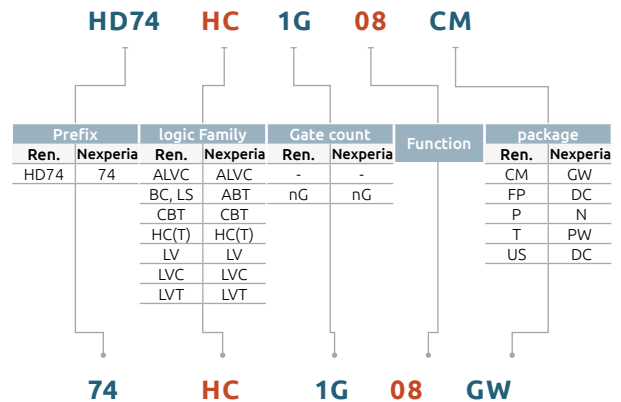
IDT logic



Diodes Inc. logic



Renesas logic



Product orientation (tape and reel pack)

| 2 pin packages | Orientation in tape | Package            | Packing 12NC ending    |          |
|----------------|---------------------|--------------------|------------------------|----------|
|                |                     |                    | DFN1006-2 (SOD882)     | 315      |
|                |                     |                    | DFN1006D-2 (SOD882D)   | 315      |
|                |                     |                    | DFN1608D-2 (SOD1608)   | 315      |
|                |                     |                    | DSN0603-2 (SOD962)     | 315      |
|                |                     |                    | DFN0603-2 (SOD972E)    | 317      |
|                |                     |                    | DSN0402-2 (SOD992)     | 315      |
|                |                     |                    | DSN0402B-2 (SOD992B)   | 315      |
|                |                     |                    | DSN1006-2 (SOD993)     | 315      |
|                |                     |                    | DSN1006U-2 (SOD995)    | 315      |
|                |                     |                    | DSN1608-2 (SOD963&964) | 315      |
|                |                     |                    | SOD80                  | 115, 135 |
|                |                     |                    | SOD123F                | 115      |
|                |                     |                    | CFP3 (SOD123W)         | 115      |
|                |                     | SOD123             | 115,118                |          |
|                |                     | CFP5 (SOD128)      | 115                    |          |
|                |                     | SOD323             | 115, 135               |          |
|                | SOD323F             | 115                |                        |          |
|                | SOD523              | 115, 135, 315, 335 |                        |          |

| 3 pin packages | Orientation in tape | Package | Packing 12NC ending  | Orientation in tape | Package | Packing 12NC ending   |          |
|----------------|---------------------|---------|----------------------|---------------------|---------|-----------------------|----------|
|                |                     |         | SOT89                | 146                 |         | DFN1010D-3 (SOT1215)  | 147      |
|                |                     |         |                      |                     |         | DFN2020-3 (SOT1061)   | 115, 135 |
|                |                     |         |                      |                     |         | DFN2020D-3 (SOT1061D) | 115,135  |
|                |                     |         |                      |                     |         | SOT89                 | 115,135  |
|                |                     |         |                      |                     |         | SOT89                 | 115, 135 |
|                |                     |         |                      | D2PAK (SOT404)      | 118     |                       |          |
|                | Orientation in tape | Package | Packing 12NC ending  | Orientation in tape | Package | Packing 12NC ending   |          |
|                |                     |         | DFN1006-3 (SOT883)   | 315                 |         | SOT89                 | 147      |
|                |                     |         | DFN1006B-3 (SOT883B) | 315                 |         | CFP15 (SOT1289)       | 139, 146 |
|                |                     | SOT23   | 185, 215, 235        |                     |         |                       |          |
|                |                     | SOT323  | 115, 135             |                     |         |                       |          |
|                |                     | SOT416  | 115, 135             |                     |         |                       |          |

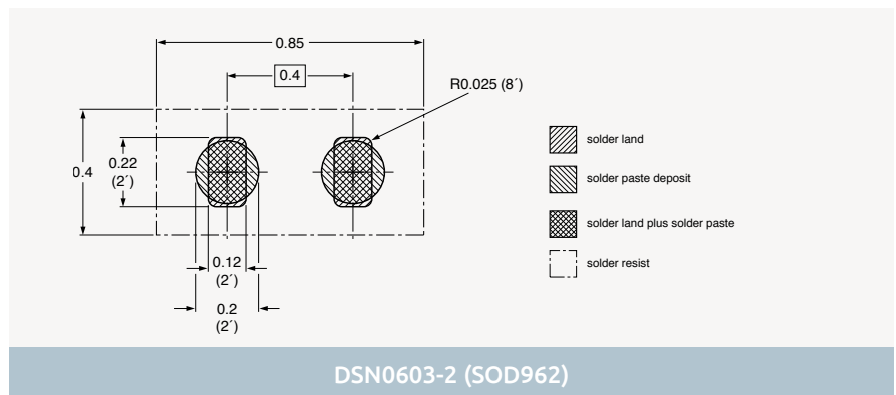
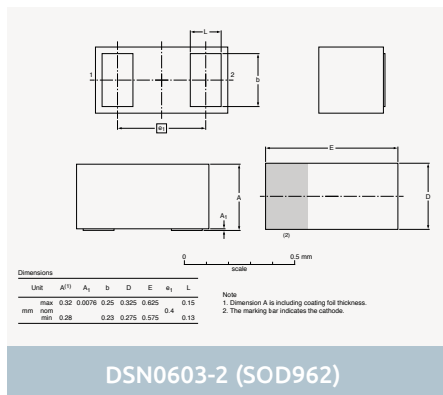
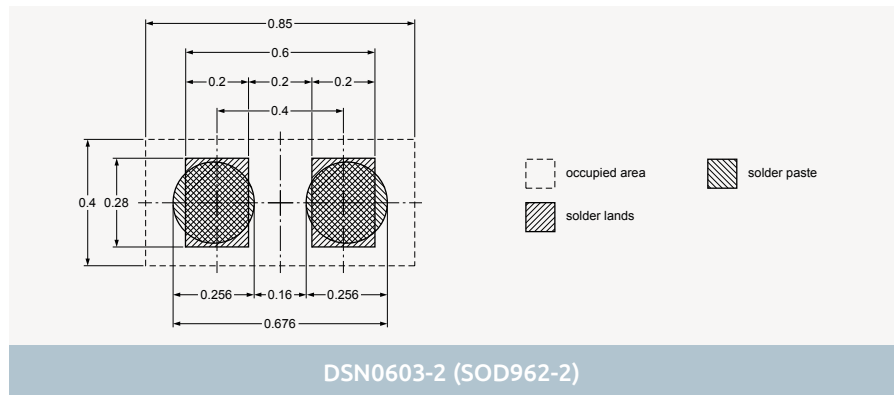
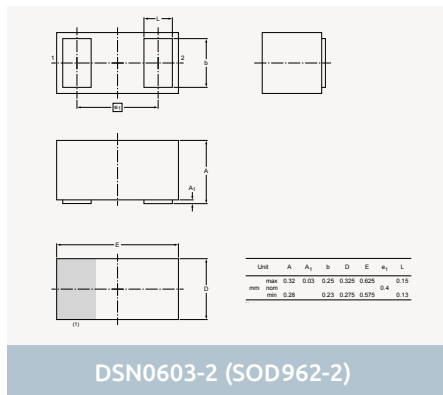
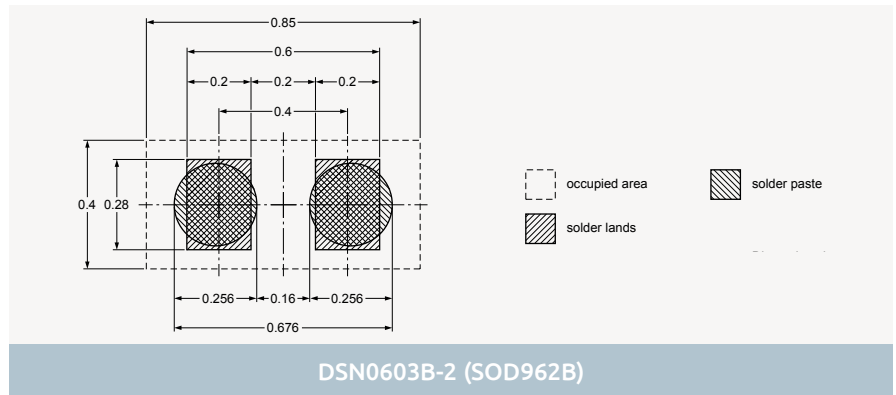
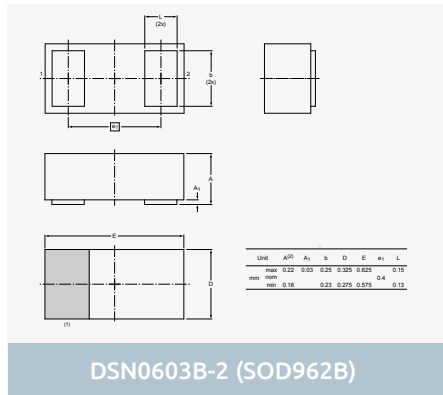
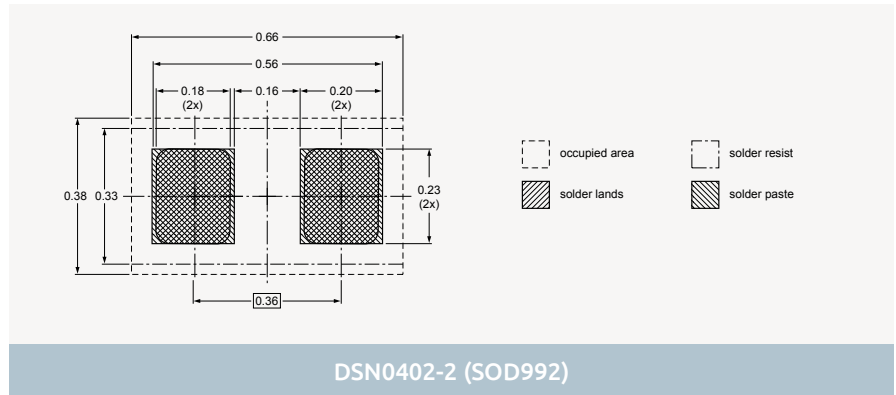
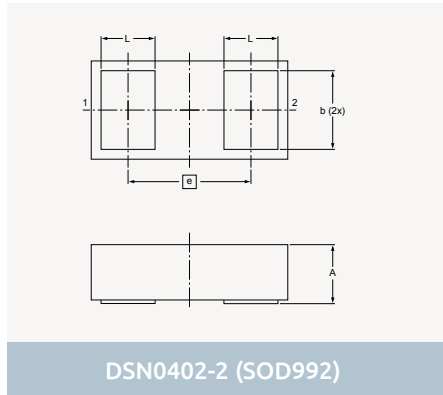
| 4 pin packages | Orientation in tape | Package | Packing 12NC ending        | Orientation in tape | Package | Packing 12NC ending |  |
|----------------|---------------------|---------|----------------------------|---------------------|---------|---------------------|--|
|                |                     |         | WL CSP4 (0808)             | 084                 |         |                     |  |
|                |                     |         | LFP AK56 (SOT669)          | 115                 |         |                     |  |
|                |                     |         | LFP AK56E (SOT1023)        | 115                 |         |                     |  |
|                |                     |         | LFP AK56-UL2595 (SOT1023A) | 115                 |         |                     |  |
|                |                     |         | LFP AK88 (SOT1235)         | 118                 |         |                     |  |
|                | Orientation in tape | Package | Packing 12NC ending        | Orientation in tape | Package | Packing 12NC ending |  |
|                |                     |         | SOT143B                    | 215, 235            |         |                     |  |
|                |                     |         | SOT223                     | 115, 135            |         |                     |  |
|                |                     |         | DFN1010-4 (SOT1194)        | 115                 |         |                     |  |

| 5 pin packages      | Orientation in tape | Package             | Packing 12NC ending | Orientation in tape | Package             | Packing 12NC ending |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                     |                     |                     | WLCSP5 (1208)       | 087                 |                     | SOT353              |
|                     |                     |                     |                     |                     |                     |                     |
|                     |                     |                     |                     |                     |                     |                     |
|                     |                     |                     |                     |                     |                     |                     |
|                     |                     |                     |                     |                     |                     |                     |
| Orientation in tape | Package             | Packing 12NC ending | Orientation in tape | Package             | Packing 12NC ending |                     |
|                     | SOT753              | 125                 |                     |                     |                     |                     |
|                     | X2SON5 (SOT1226)    | 125                 |                     |                     |                     |                     |
|                     | UMTS (SOT353-1)     | 125                 |                     |                     |                     |                     |
|                     | SOS (SOT753)        | 125                 |                     |                     |                     |                     |
|                     |                     |                     |                     |                     |                     |                     |
|                     |                     |                     |                     |                     |                     |                     |

| 6 pin packages      | Orientation in tape   | Package             | Packing 12NC ending | Orientation in tape   | Package             | Packing 12NC ending |
|---------------------|-----------------------|---------------------|---------------------|-----------------------|---------------------|---------------------|
|                     |                       | DFN1410-6 (SOT886)  | 115                 |                       | DFN1412-6 (SOT1268) | 147                 |
|                     | DFN1616-6 (SOT1189)   | 115                 |                     | DFN2020-6 (SOT1118)   | 115                 |                     |
|                     | DFN2020MD-6 (SOT1220) | 184                 |                     | DFN2020D-6 (SOT1118D) | 115                 |                     |
|                     | LFPK33 (SOT1210)      | 115                 |                     | DFN2020MD-6 (SOT1220) | 115                 |                     |
|                     | LFPK56D (SOT1205)     | 115                 |                     | SOT363                | 115, 135            |                     |
|                     | WLCSP6 (1510)         | 023                 |                     | SOT457                | 115, 135            |                     |
|                     | XSON6 (SOT1202)       | 125                 |                     | X2SON6 (SOT1255)      | 147                 |                     |
|                     | XSON6 (SOT886)        | 125                 |                     | DFN0606B-6            | 147                 |                     |
| Orientation in tape | Package               | Packing 12NC ending | Orientation in tape | Package               | Packing 12NC ending |                     |
|                     | DFN1010-6 (SOT891)    | 132                 |                     | DFN0606 (SOT8001)     | 147                 |                     |
|                     | DFN1010E-6 (SOT1202)  | 132                 |                     |                       |                     |                     |
|                     | DFN1410-6 (SOT886)    | 132                 |                     |                       |                     |                     |
|                     | DFN2020MD-6 (SOT1220) | 125                 |                     |                       |                     |                     |
|                     | SOT363                | 125, 165            |                     |                       |                     |                     |
|                     | SOT457                | 125, 165            |                     |                       |                     |                     |
|                     | XSON6 (SOT891)        | 125                 |                     |                       |                     |                     |
|                     | SC-88 (SOT363)        | 125                 |                     |                       |                     |                     |
|                     | SC-74 (SOT457)        | 125                 |                     |                       |                     |                     |



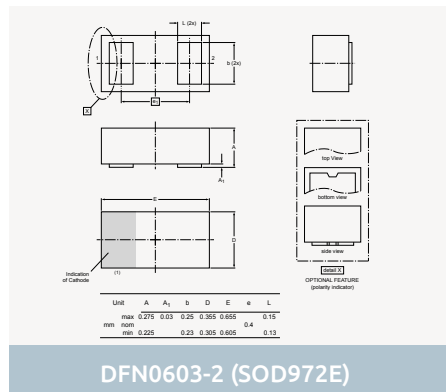
2-pin SMD packages



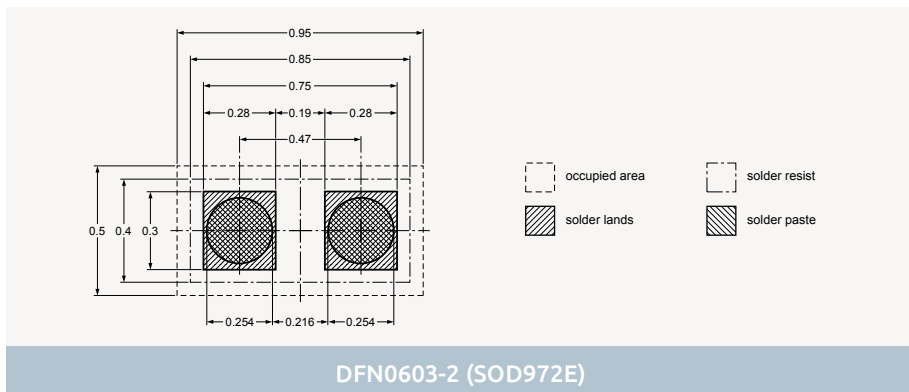
Dimensions in mm

Images are for reference only, for detailed drawings please visit [nexperia.com/packages](http://nexperia.com/packages)

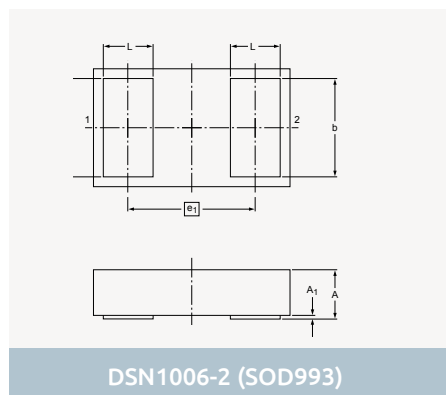
## 2-pin SMD packages



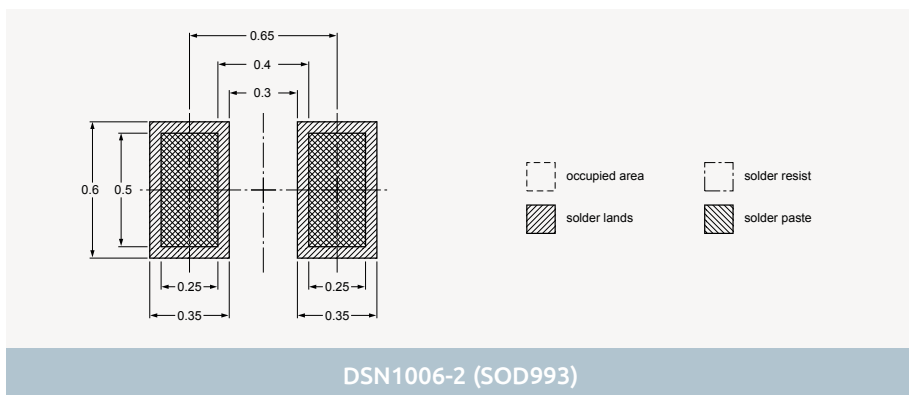
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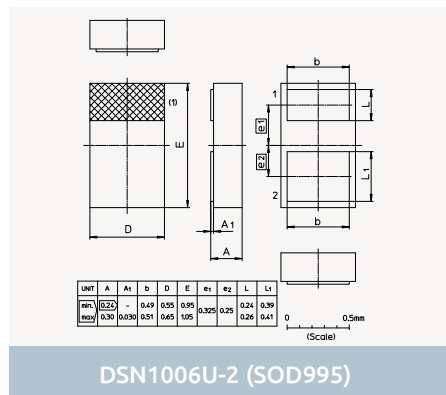
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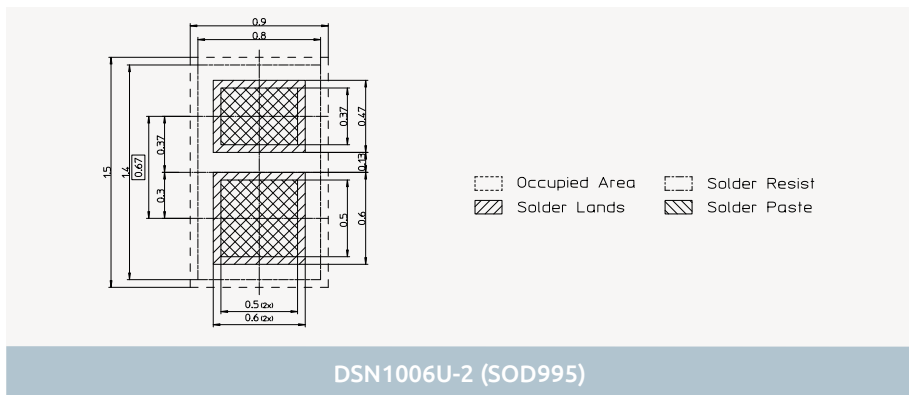
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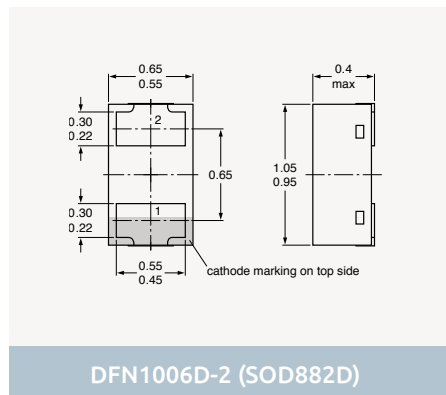
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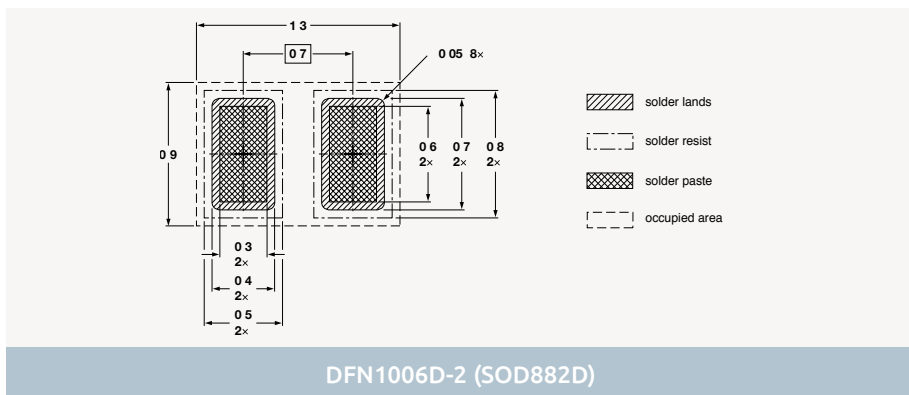
DSN1006U-2 (SOD995)



DSN1006U-2 (SOD995)



DFN1006D-2 (SOD882D)

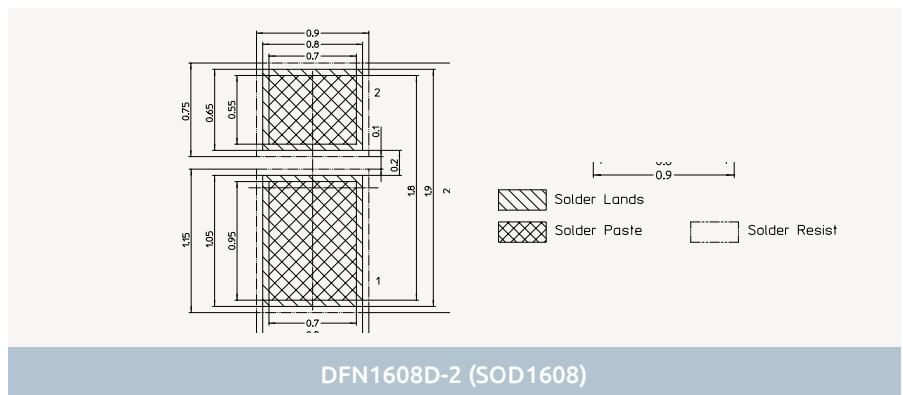
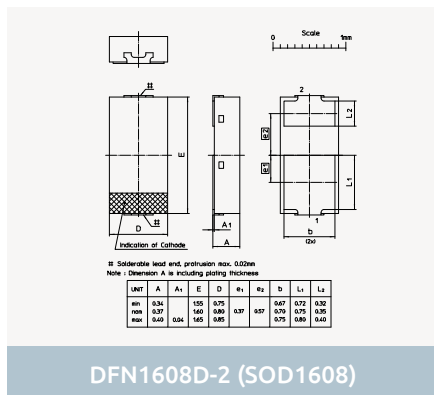
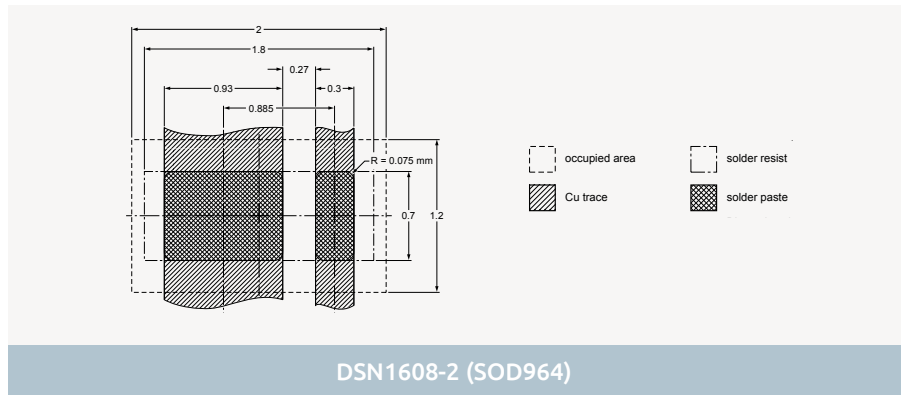
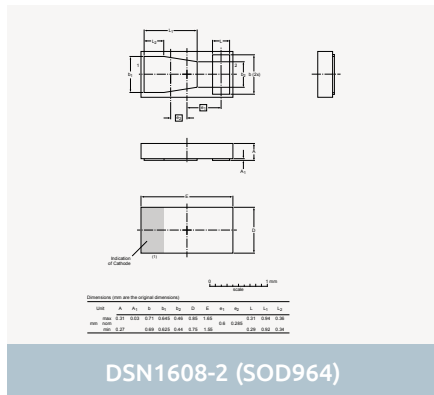
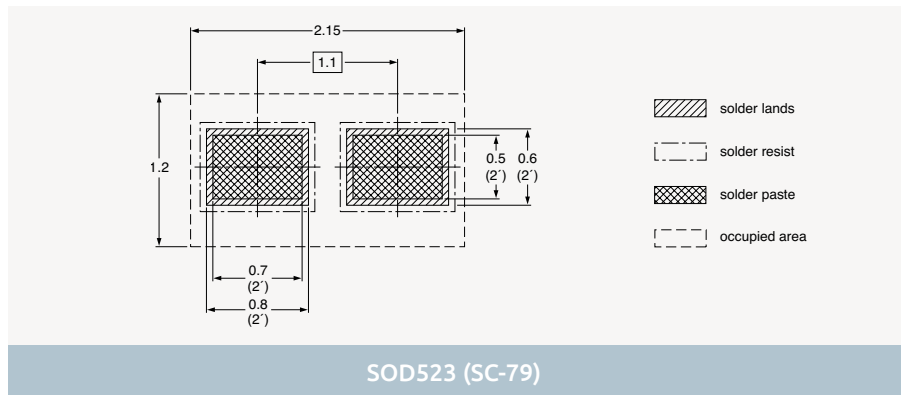
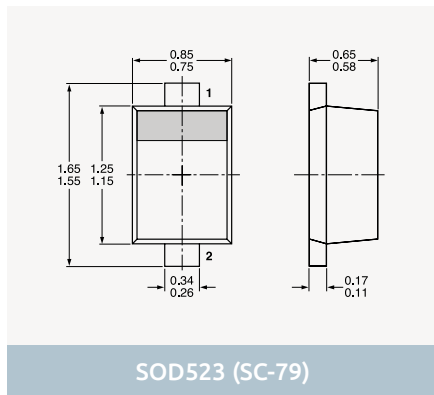
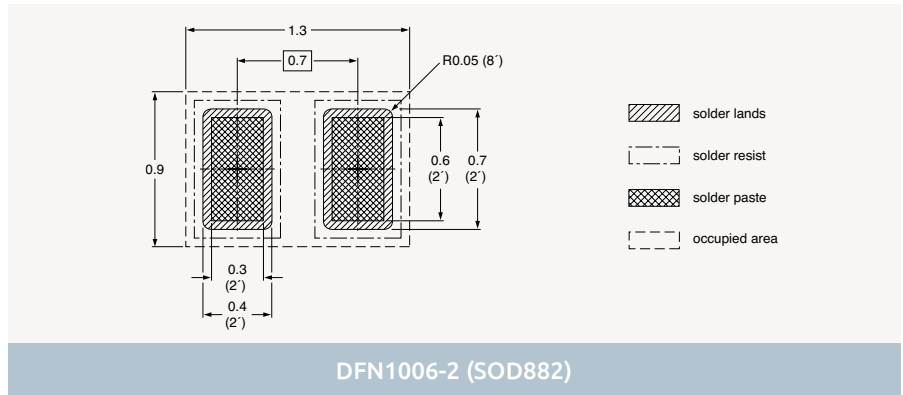
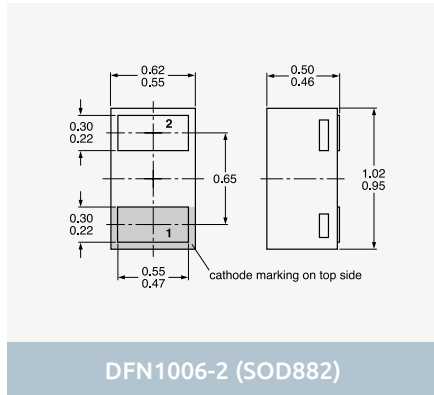


DFN1006D-2 (SOD882D)

Dimensions in mm



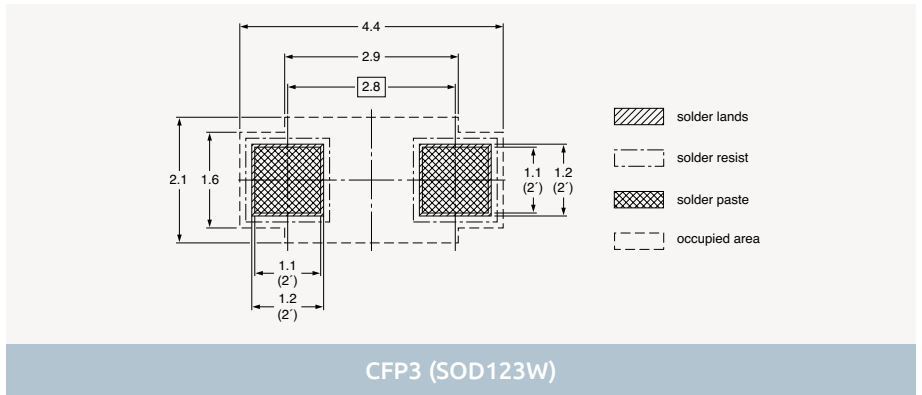
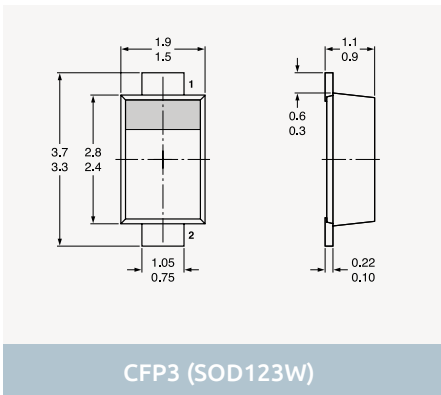
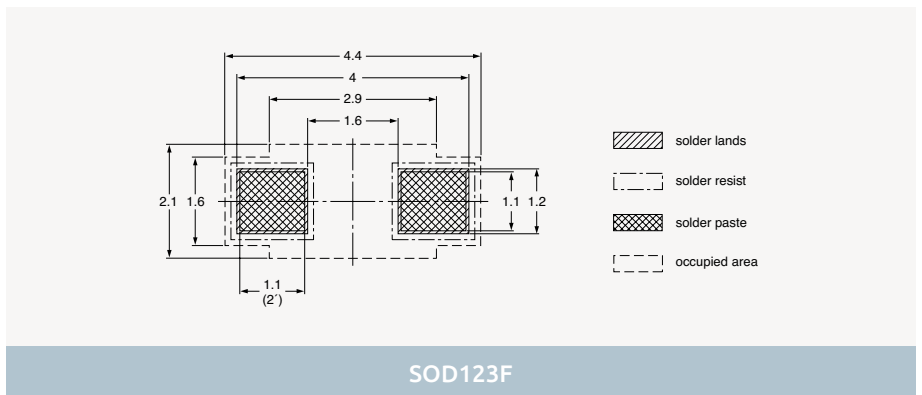
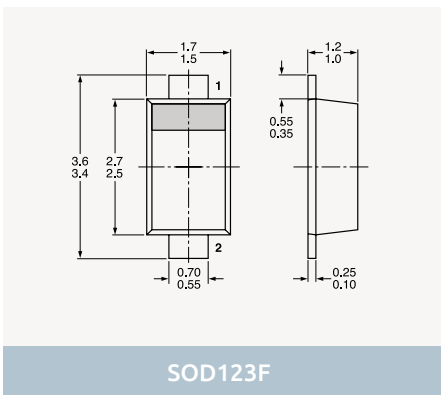
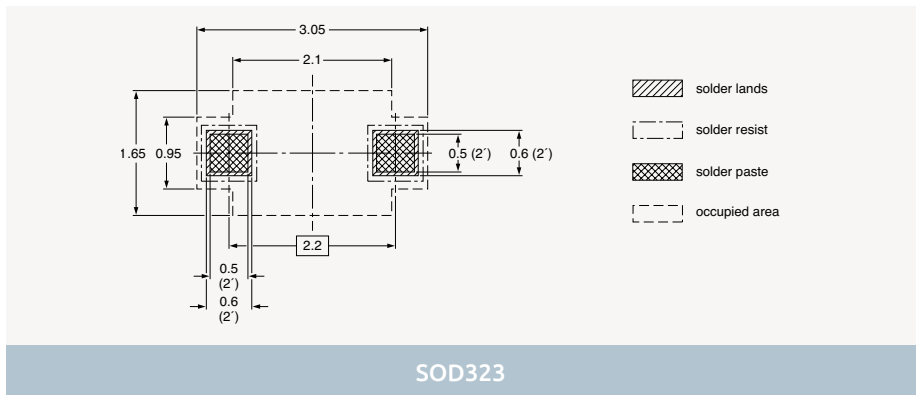
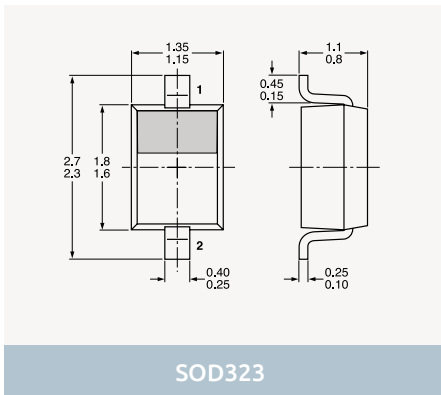
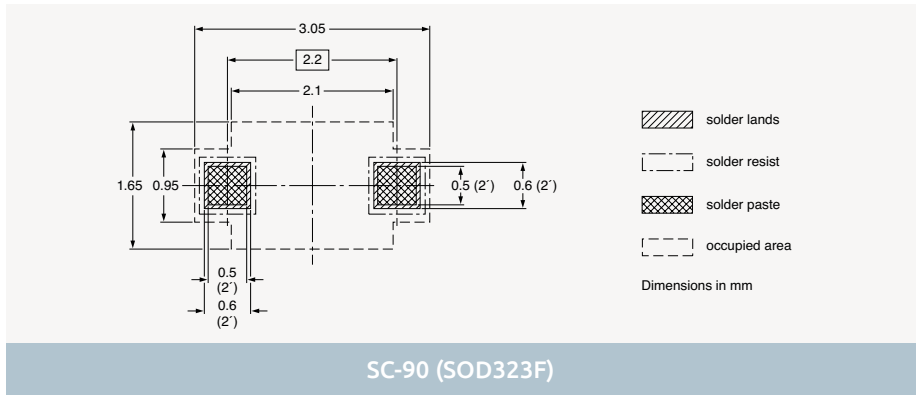
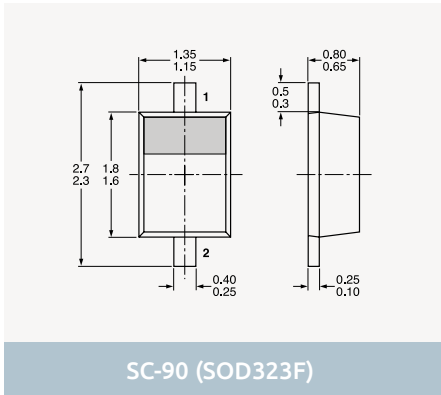
2-pin SMD packages



Dimensions in mm

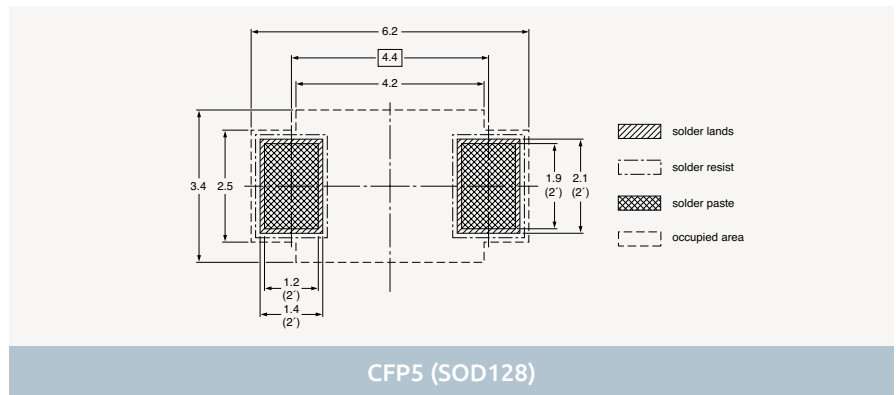
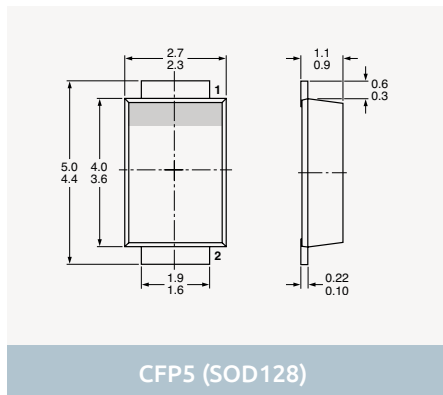
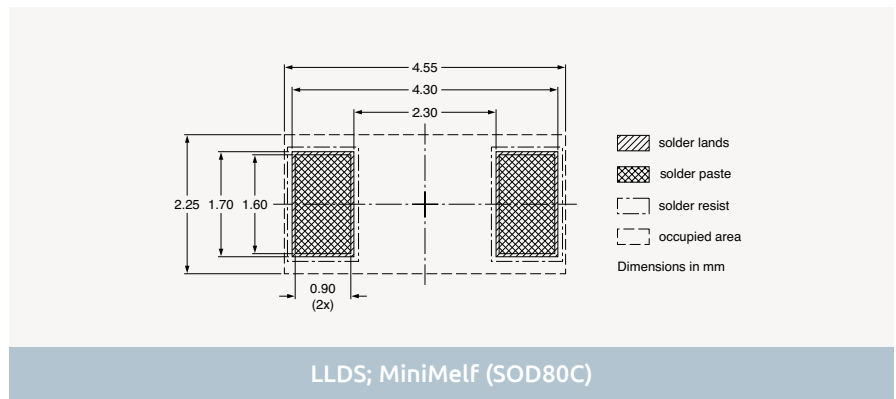
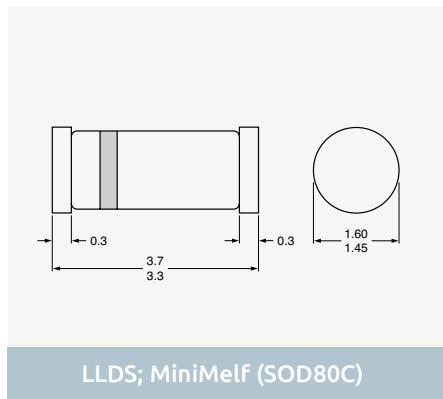
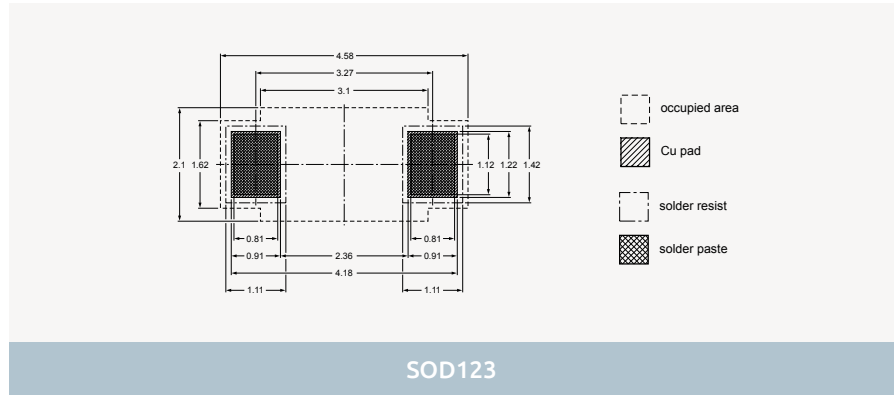
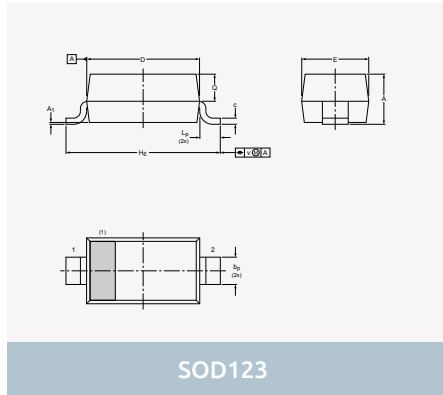
Images are for reference only, for detailed drawings please visit [nexperia.com/packages](http://nexperia.com/packages)

2-pin SMD packages

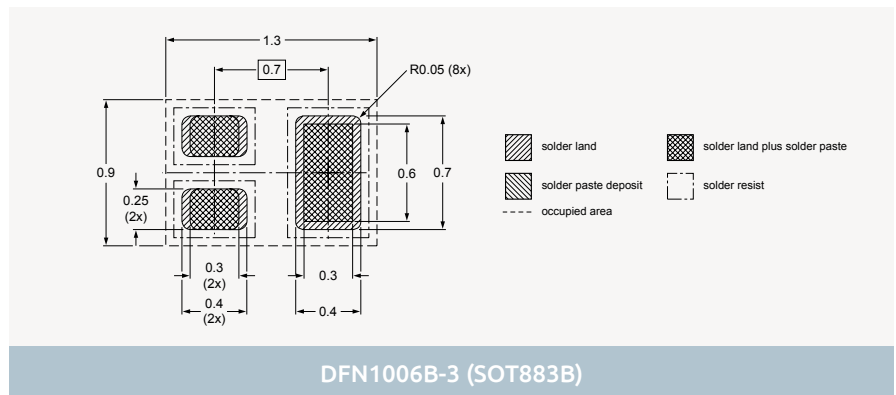
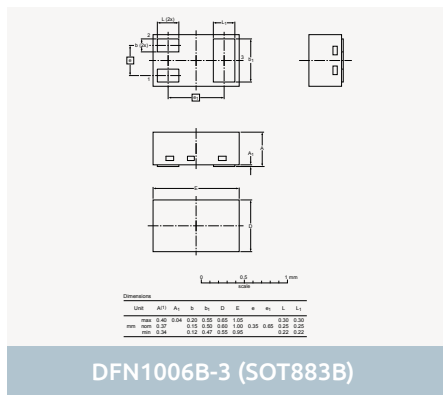


Dimensions in mm

## 2-pin SMD packages



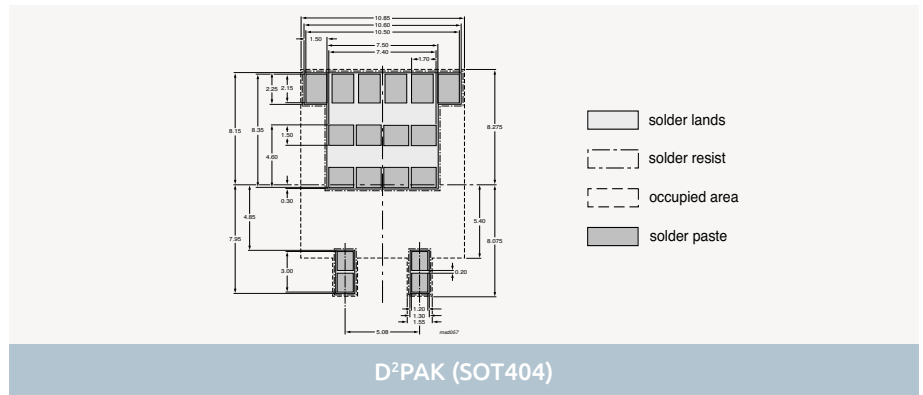
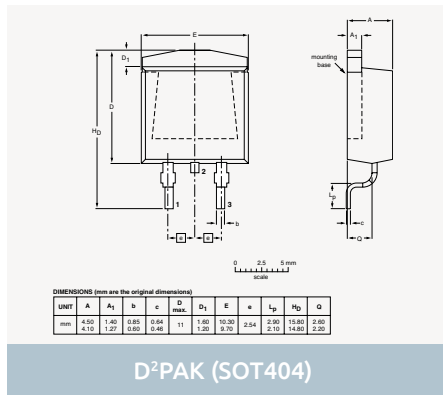
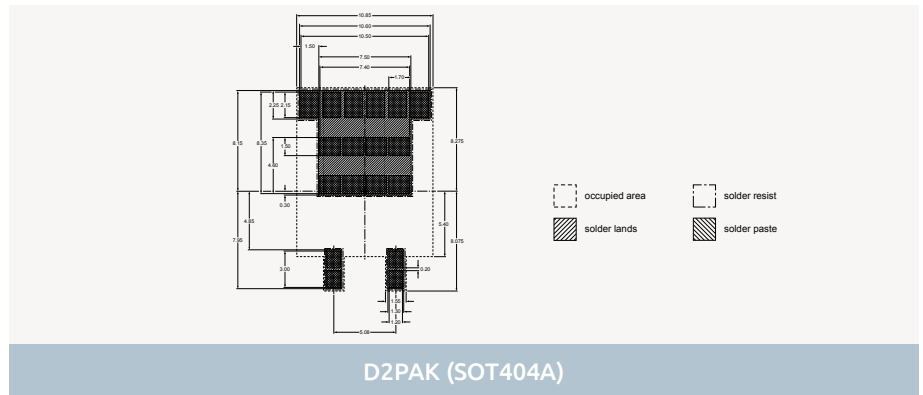
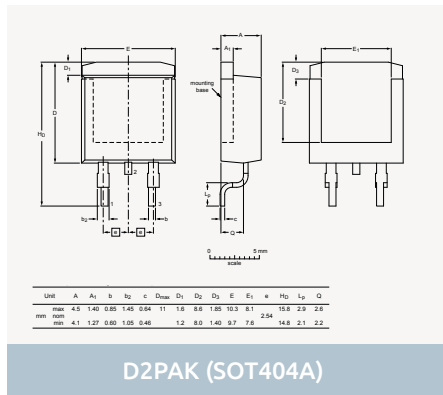
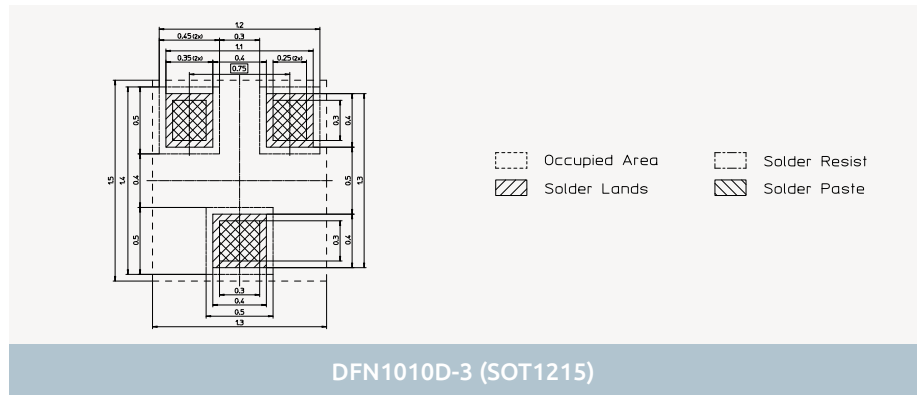
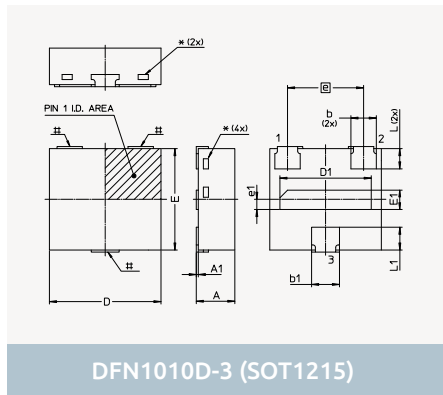
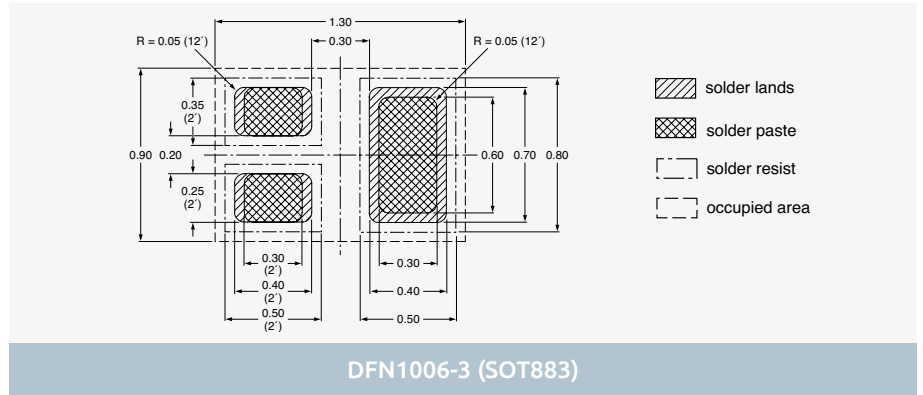
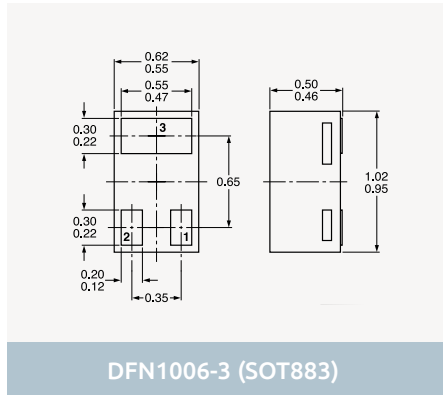
## 3-pin SMD packages



Dimensions in mm

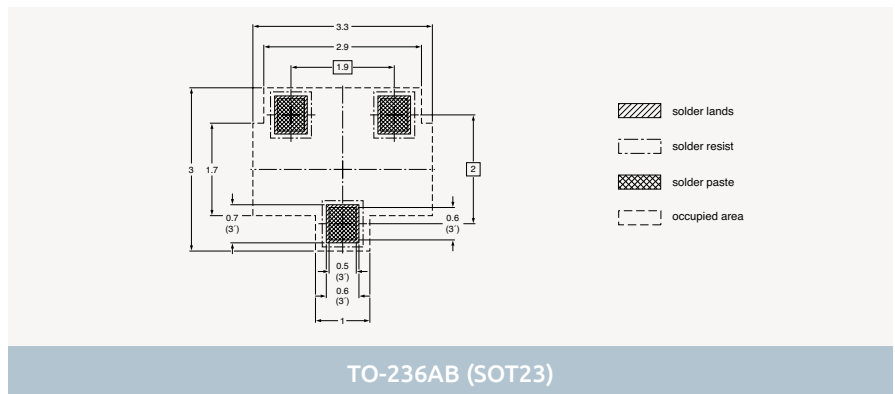
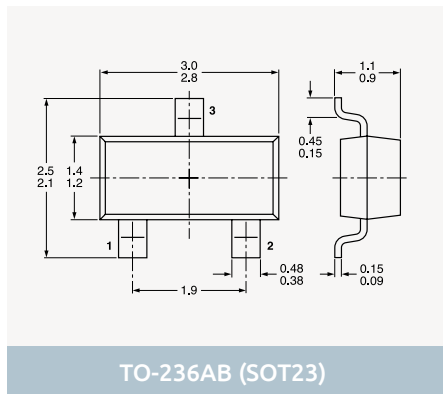
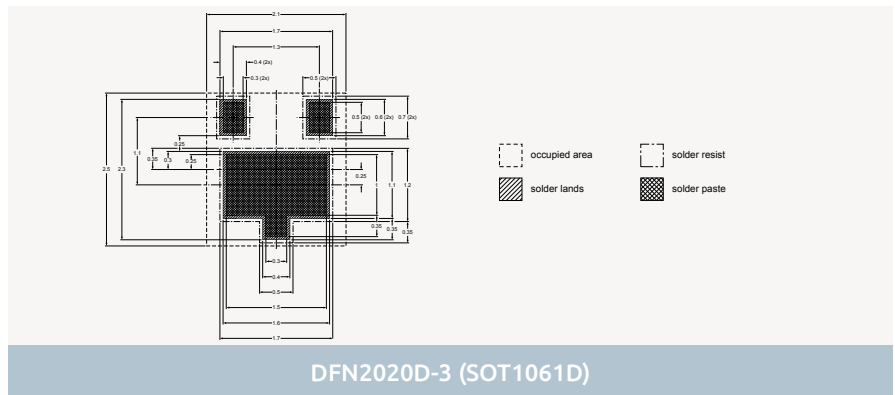
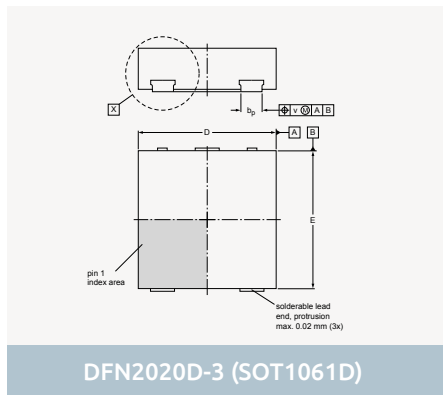
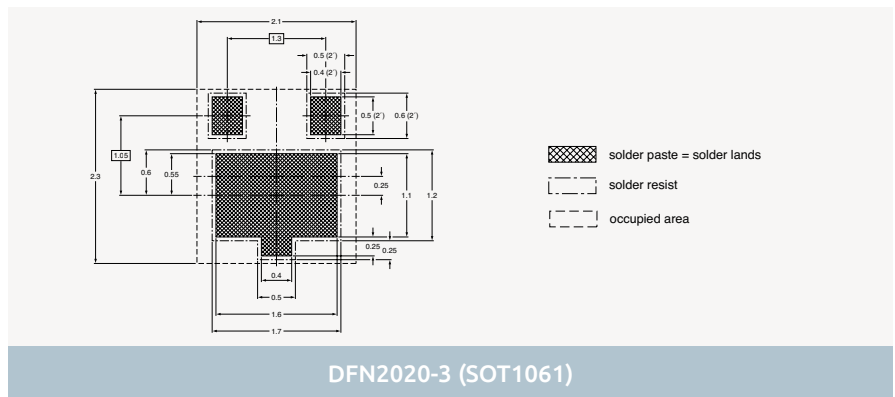
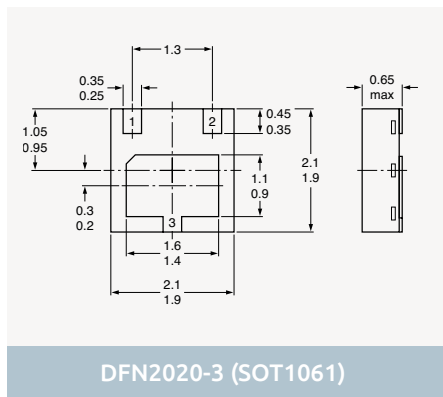
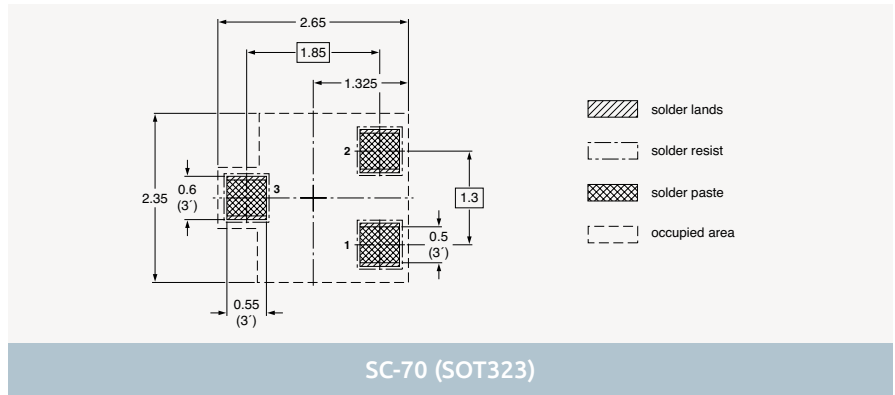
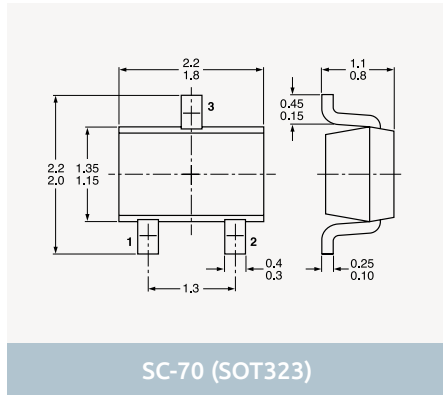
Images are for reference only, for detailed drawings please visit [nexperia.com/packages](http://nexperia.com/packages)

3-pin SMD packages



Dimensions in mm

3-pin SMD packages



Dimensions in mm

Images are for reference only, for detailed drawings please visit [nexperia.com/packages](http://nexperia.com/packages)



### 4-pin SMD packages

Dimensions

| UNIT | A    | A <sub>1</sub> | b    | b <sub>1</sub> | b <sub>2</sub> | c    | c <sub>2</sub> | D <sup>(1)</sup> | D <sup>(1)</sup> <sub>max</sub> | E <sup>(1)</sup> | E <sup>(1)</sup> <sub>1</sub> | e    | H    | L   | L <sub>1</sub> | L <sub>2</sub> | w    | y   | θ  |
|------|------|----------------|------|----------------|----------------|------|----------------|------------------|---------------------------------|------------------|-------------------------------|------|------|-----|----------------|----------------|------|-----|----|
| mm   | 1.10 | 0.15           | 0.50 | 0.41           | 0.50           | 0.25 | 0.30           | 4.70             | 4.41                            | 5.30             | 3.7                           | 1.27 | 0.2  | 1.3 | 0.85           | 1.3            | 0.25 | 0.1 | 8° |
| mm   | 0.95 | 0.00           | 0.35 | 0.35           | 0.15           | 0.24 | 4.45           | 4.05             | 3.1                             | 5.0              | 0.8                           | 0.95 | 0.25 | 0.1 | 0.7            |                |      |     |    |

LFPAK56E; Power-SO8 (SOT1023)

solder lands     solder paste 125 μm stencil  
 solder resist     occupied area

LFPAK56E; Power-SO8 (SOT1023)

Dimensions

| UNIT | A    | A <sub>1</sub> | A <sub>2</sub> | b    | b <sub>1</sub> | b <sub>2</sub> | c    | c <sub>2</sub> | D <sup>(1)</sup> | D <sup>(1)</sup> <sub>max</sub> | E <sup>(1)</sup> | E <sup>(1)</sup> <sub>1</sub> | e    | H    | L   | L <sub>1</sub> | L <sub>2</sub> | w  | y | θ |
|------|------|----------------|----------------|------|----------------|----------------|------|----------------|------------------|---------------------------------|------------------|-------------------------------|------|------|-----|----------------|----------------|----|---|---|
| mm   | 1.10 | 0.15           | 0.20           | 0.41 | 0.25           | 0.30           | 4.70 | 3.9            | 5.30             | 3.7                             | 1.27             | 0.2                           | 1.3  | 0.85 | 1.3 | 0.25           | 0.1            | 8° |   |   |
| mm   | 0.95 | 0.00           | 0.10           | 0.10 | 0.15           | 0.24           | 4.45 | 3.5            | 4.95             | 3.1                             | 5.0              | 0.8                           | 0.95 | 0.25 | 0.1 | 0.7            |                |    |   |   |

LFPAK56-UL2595 (SOT1023A)

occupied area     solder resist  
 solder lands     solder paste

LFPAK56-UL2595 (SOT1023A)

Dimensions

| UNIT | A    | A <sub>1</sub> | A <sub>2</sub> | A <sub>3</sub> | b    | b <sub>2</sub> | b <sub>3</sub> | b <sub>4</sub> | c    | c <sub>2</sub> | D <sup>(1)</sup> | D <sup>(1)</sup> <sub>max</sub> | E <sup>(1)</sup> | E <sup>(1)</sup> <sub>1</sub> | e    | H   | L    | L <sub>1</sub> | L <sub>2</sub> | w    | y   | θ  |
|------|------|----------------|----------------|----------------|------|----------------|----------------|----------------|------|----------------|------------------|---------------------------------|------------------|-------------------------------|------|-----|------|----------------|----------------|------|-----|----|
| mm   | 1.20 | 0.15           | 1.10           | 1.10           | 0.50 | 4.41           | 2.2            | 0.9            | 0.25 | 0.30           | 4.10             | 4.20                            | 5.0              | 3.3                           | 1.27 | 6.2 | 0.85 | 1.3            | 1.3            | 0.25 | 0.1 | 8° |
| mm   | 1.01 | 0.00           | 0.95           | 0.25           | 0.35 | 3.62           | 2.0            | 0.7            | 0.19 | 0.24           | 3.80             | 3.80                            | 4.8              | 3.1                           | 1.27 | 5.8 | 0.40 | 0.8            | 0.8            |      |     |    |

LFPAK56; Power-SO8 (SOT669)

solder lands     solder paste 125 μm stencil  
 solder resist     occupied area

DIMENSIONS (mm are the original dimensions)  

| UNIT | A    | A <sub>1</sub> | A <sub>2</sub> | A <sub>3</sub> | b    | b <sub>2</sub> | b <sub>3</sub> | b <sub>4</sub> | c    | c <sub>2</sub> | D <sup>(1)</sup> | D <sup>(1)</sup> <sub>max</sub> | E <sup>(1)</sup> | E <sup>(1)</sup> <sub>1</sub> | e    | H   | L    | L <sub>1</sub> | L <sub>2</sub> | w    | y   | θ  |
|------|------|----------------|----------------|----------------|------|----------------|----------------|----------------|------|----------------|------------------|---------------------------------|------------------|-------------------------------|------|-----|------|----------------|----------------|------|-----|----|
| mm   | 1.20 | 0.15           | 1.10           | 1.10           | 0.50 | 4.41           | 2.2            | 0.9            | 0.25 | 0.30           | 4.10             | 4.20                            | 5.0              | 3.3                           | 1.27 | 6.2 | 0.85 | 1.3            | 1.3            | 0.25 | 0.1 | 8° |
| mm   | 1.01 | 0.00           | 0.95           | 0.25           | 0.35 | 3.62           | 2.0            | 0.7            | 0.19 | 0.24           | 3.80             | 3.80                            | 4.8              | 3.1                           | 1.27 | 5.8 | 0.40 | 0.8            | 0.8            |      |     |    |

LFPAK56; Power-SO8 (SOT669)

Dimensions

| UNIT | A   | A <sub>1</sub> | A <sub>2</sub> | A <sub>3</sub> | b | b <sub>2</sub> | b <sub>3</sub> | b <sub>4</sub> | c   | c <sub>2</sub> | D <sup>(1)</sup> | D <sup>(1)</sup> <sub>max</sub> | E <sup>(1)</sup> | E <sup>(1)</sup> <sub>1</sub> | e | H | L | L <sub>1</sub> | L <sub>2</sub> | w | y | θ |
|------|-----|----------------|----------------|----------------|---|----------------|----------------|----------------|-----|----------------|------------------|---------------------------------|------------------|-------------------------------|---|---|---|----------------|----------------|---|---|---|
| mm   | 6.7 | 6.3            | 3.1            | 2.9            | 4 | 1.8            | 1.5            | 0.8            | 0.6 | 0.32           | 0.22             |                                 |                  |                               |   |   |   |                |                |   |   |   |

SC-73 (SOT223)

solder lands     solder resist  
 solder paste     occupied area

SC-73 (SOT223)

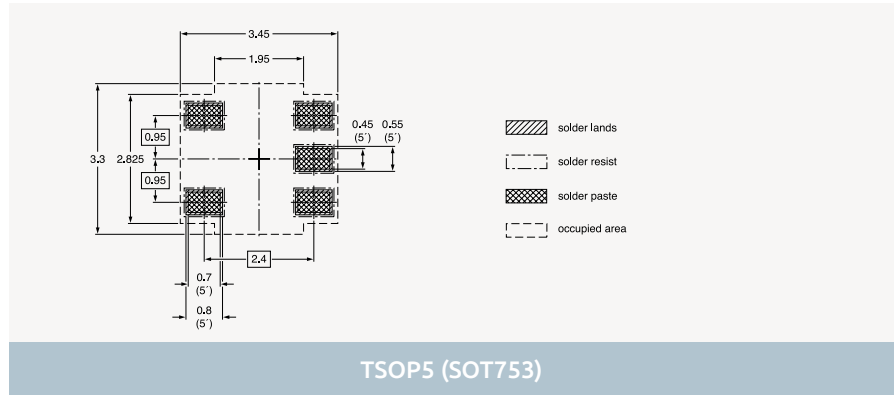
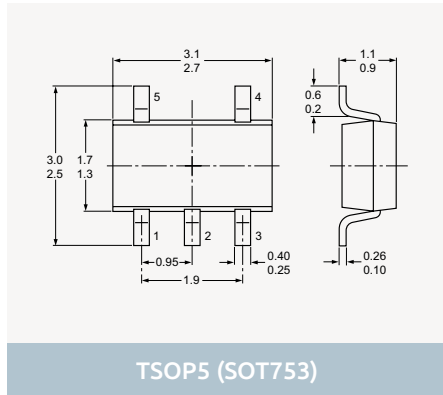
Dimensions in mm

Images are for reference only, for detailed drawings please visit [nexperia.com/packages](http://nexperia.com/packages)

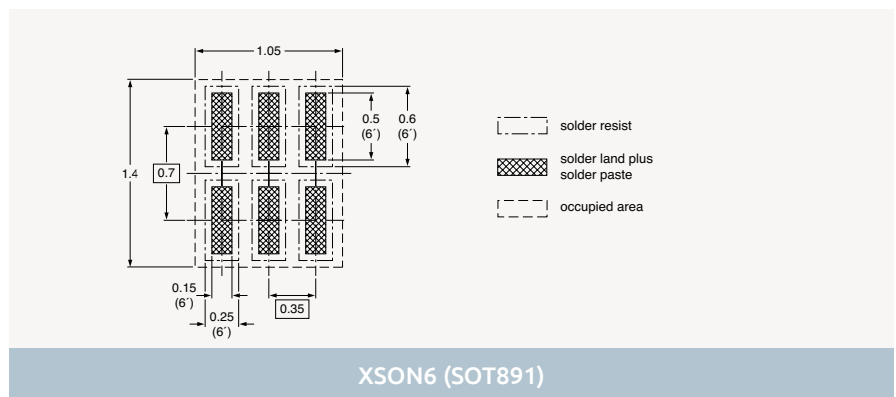
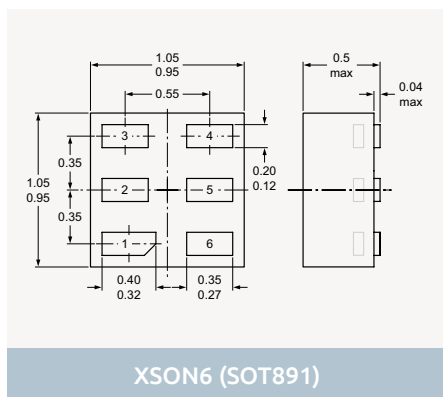
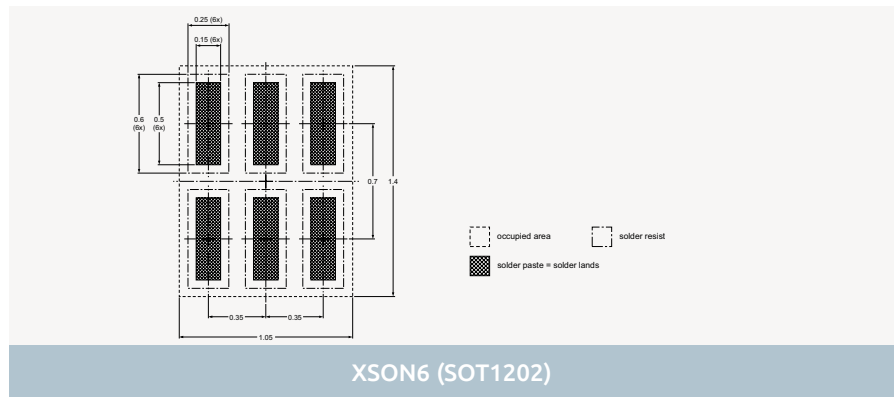
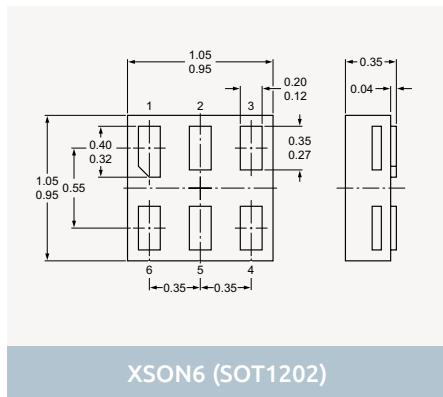
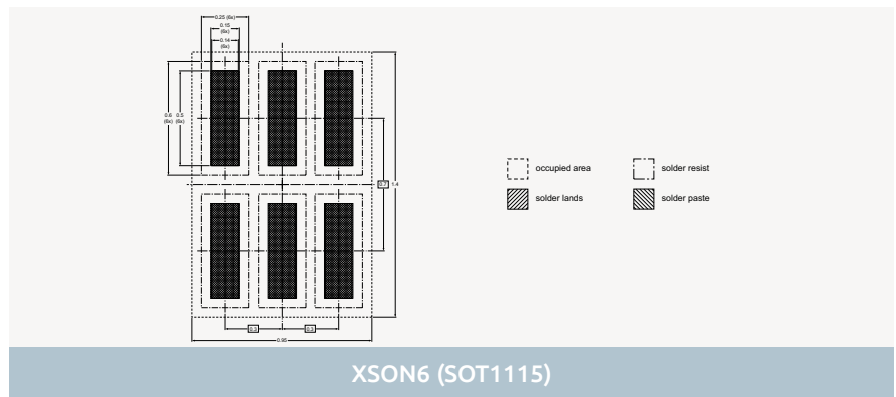
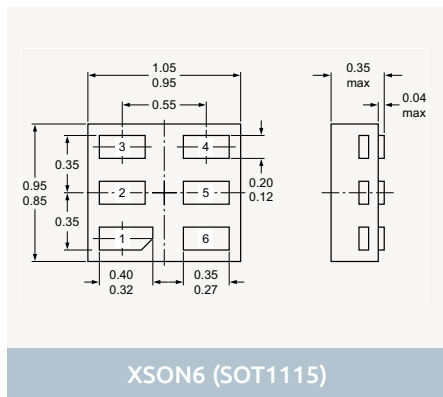




### 5-pin SMD packages



### 6-pin SMD packages

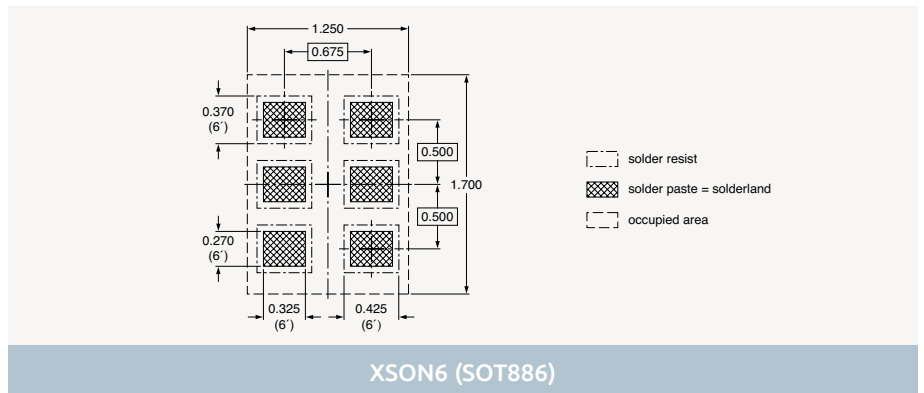
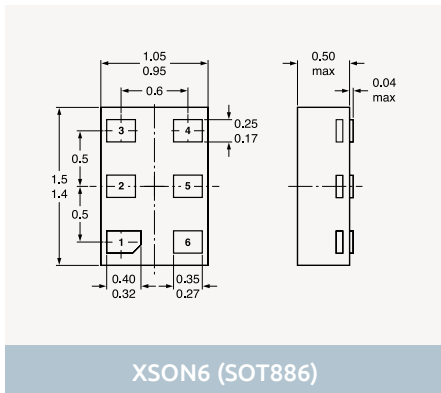
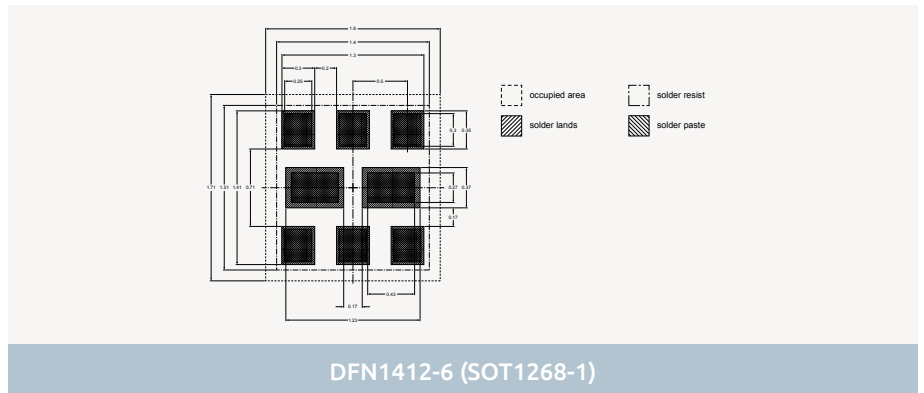
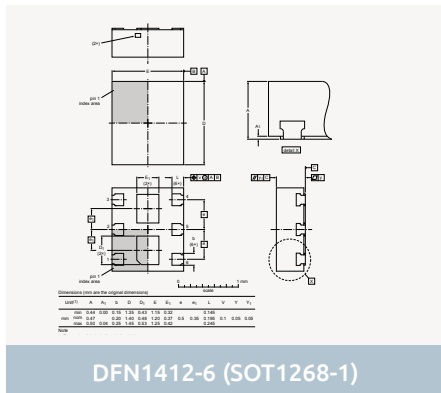
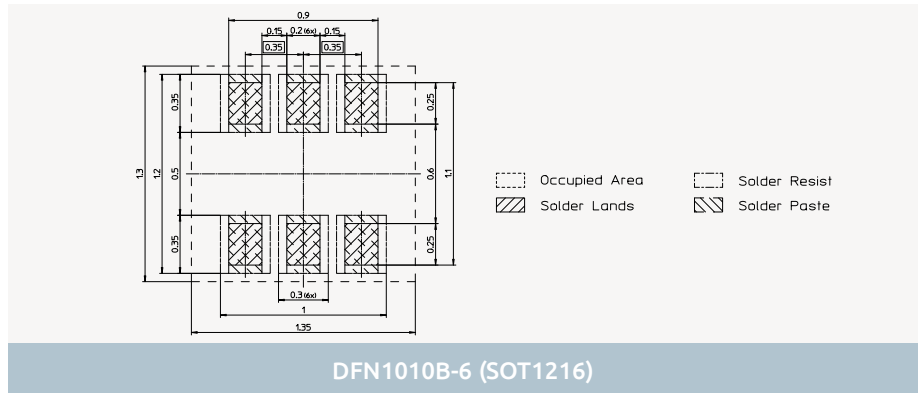
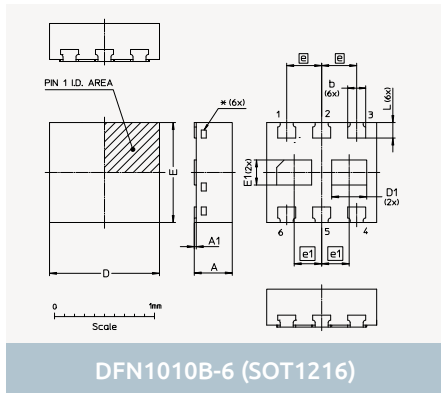
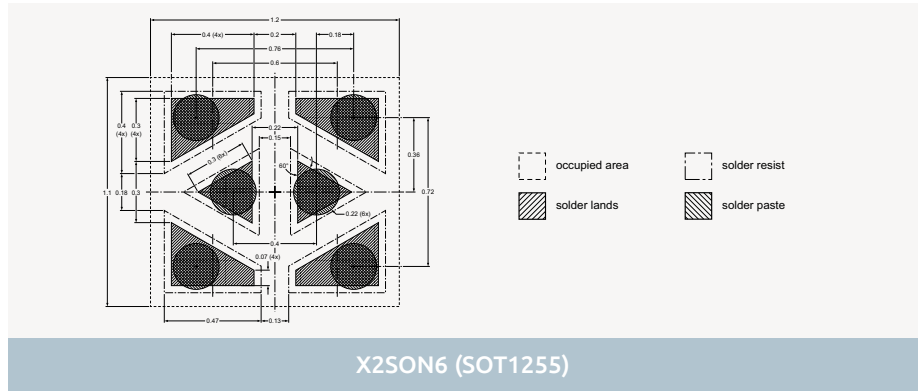
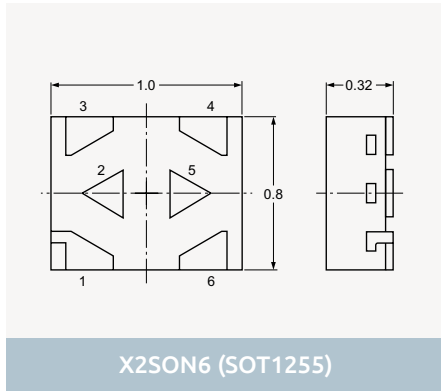


Dimensions in mm

Images are for reference only, for detailed drawings please visit [nexperia.com/packages](http://nexperia.com/packages)

# Minimized outline drawings and reflow soldering footprint

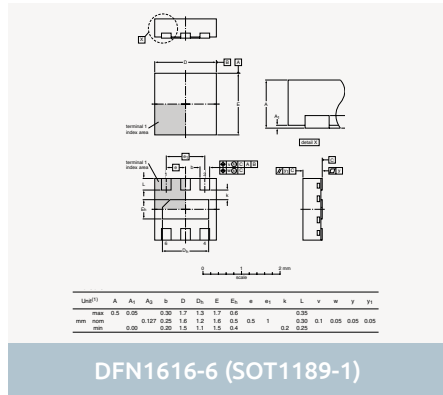
## 6-pin SMD packages



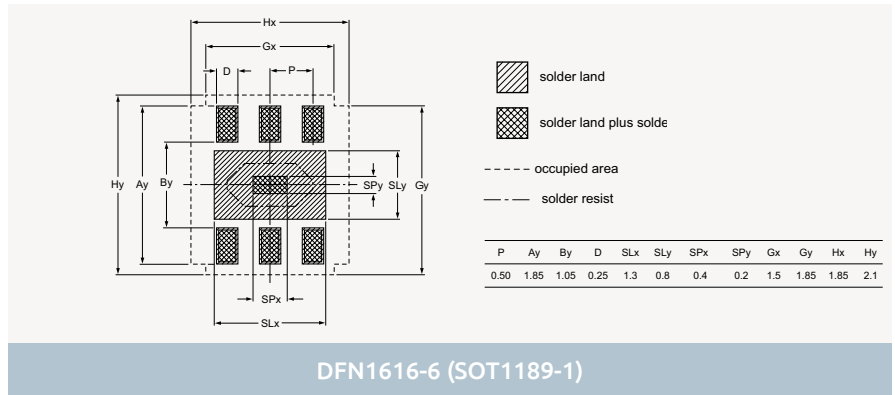
Dimensions in mm

Images are for reference only, for detailed drawings please visit [nexperia.com/packages](http://nexperia.com/packages)

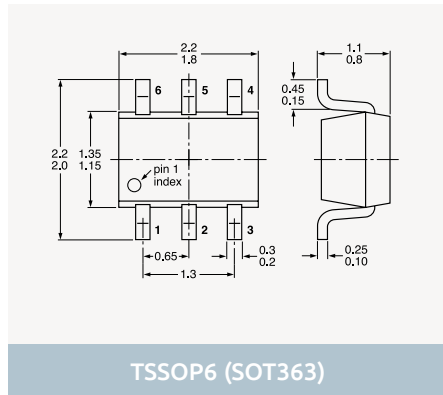
6-pin SMD packages



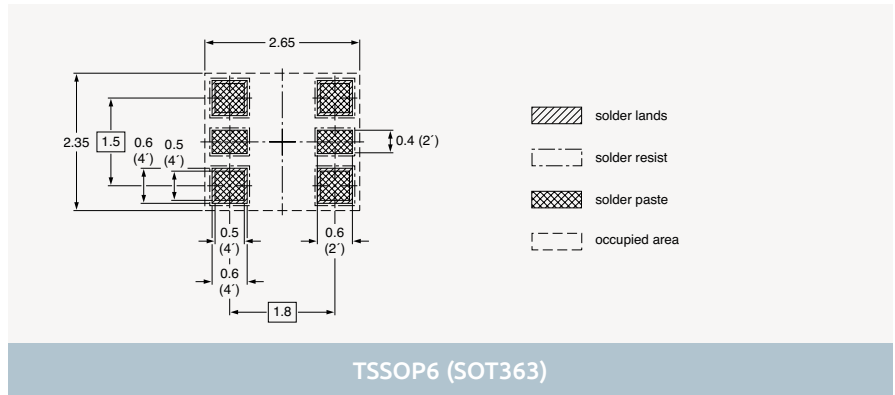
DFN1616-6 (SOT1189-1)



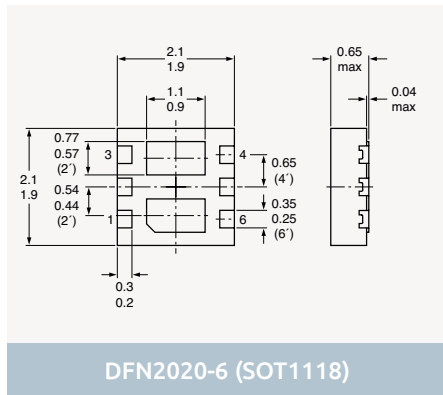
DFN1616-6 (SOT1189-1)



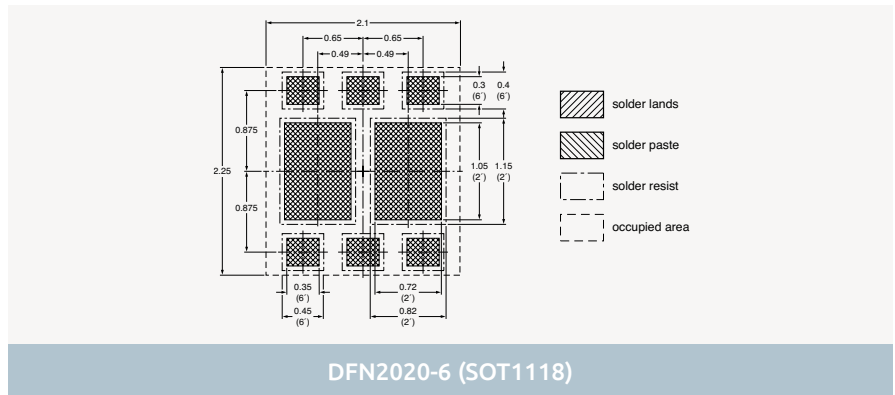
TSSOP6 (SOT363)



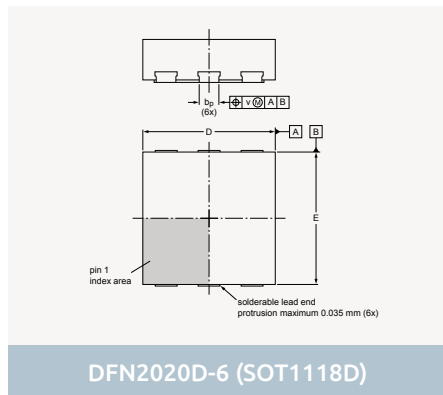
TSSOP6 (SOT363)



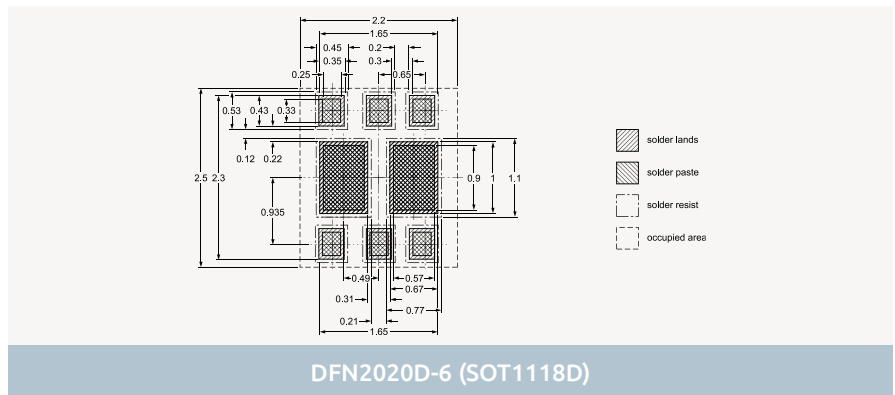
DFN2020-6 (SOT1118)



DFN2020-6 (SOT1118)



DFN2020D-6 (SOT1118D)



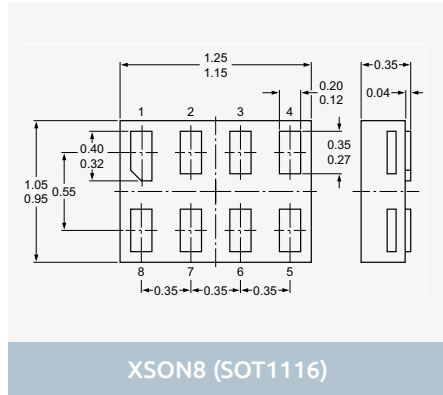
DFN2020D-6 (SOT1118D)

Dimensions in mm

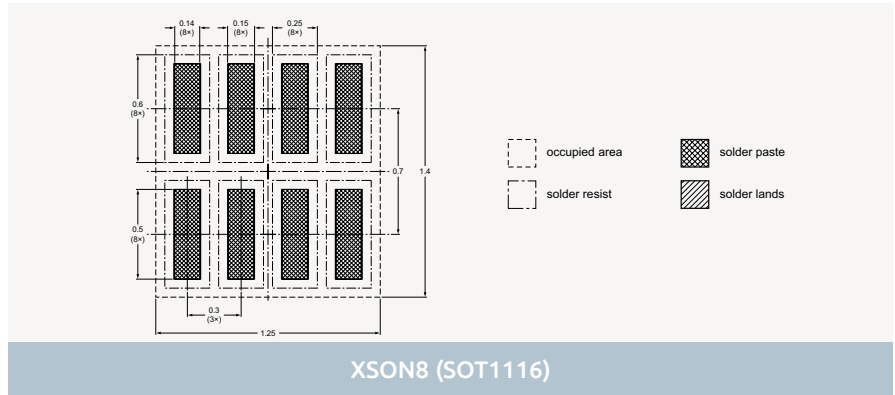
Images are for reference only, for detailed drawings please visit [nexperia.com/packages](http://nexperia.com/packages)



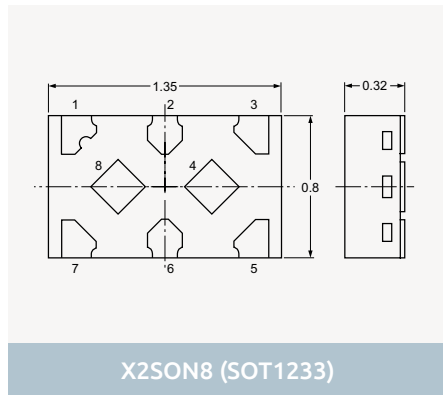
8-pin SMD packages



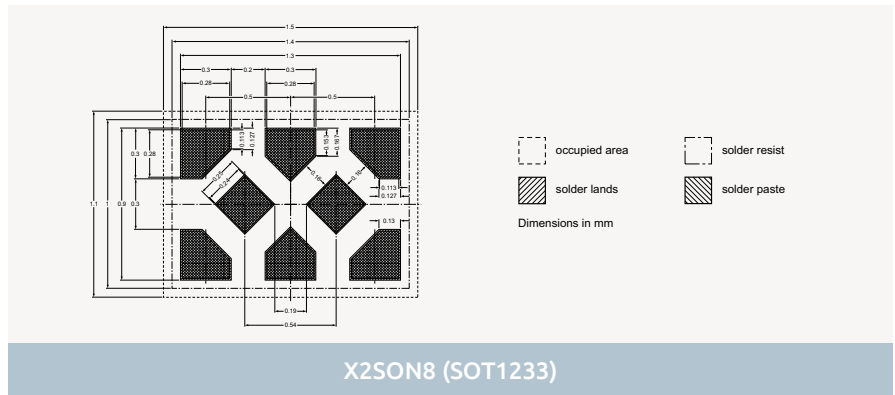
XSON8 (SOT1116)



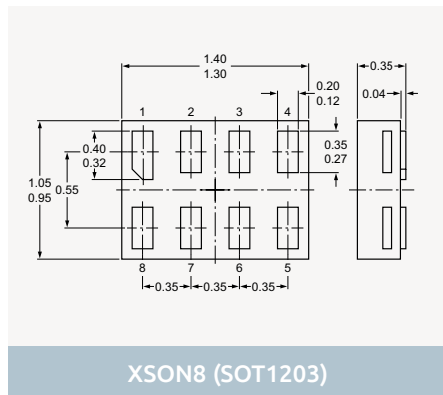
XSON8 (SOT1116)



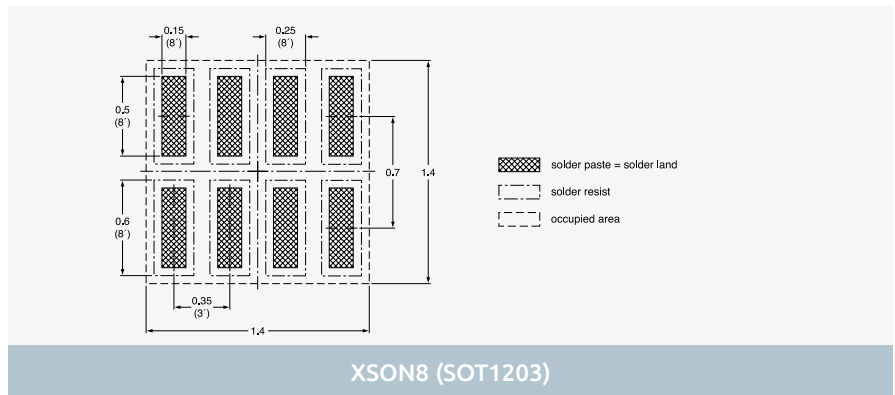
X2SON8 (SOT1233)



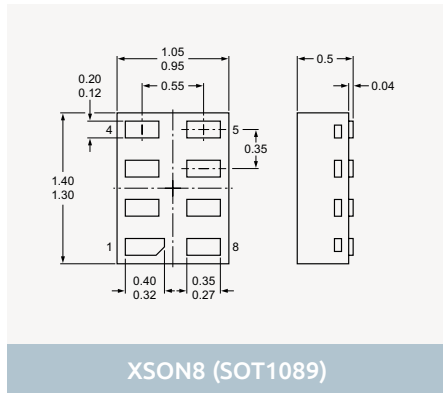
X2SON8 (SOT1233)



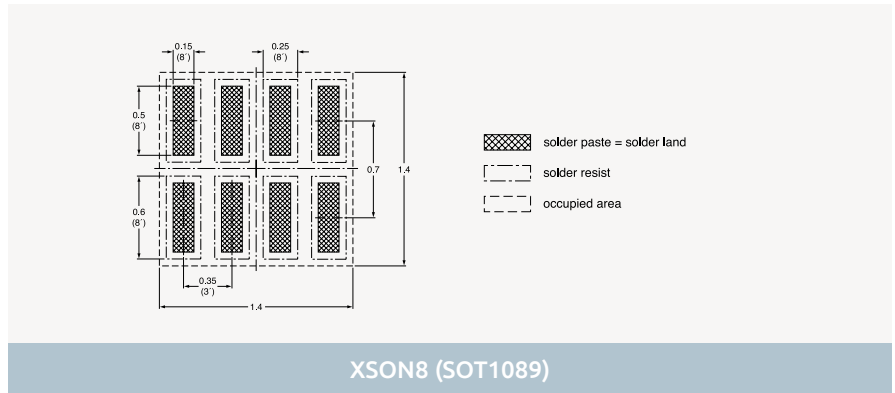
XSON8 (SOT1203)



XSON8 (SOT1203)



XSON8 (SOT1089)



XSON8 (SOT1089)

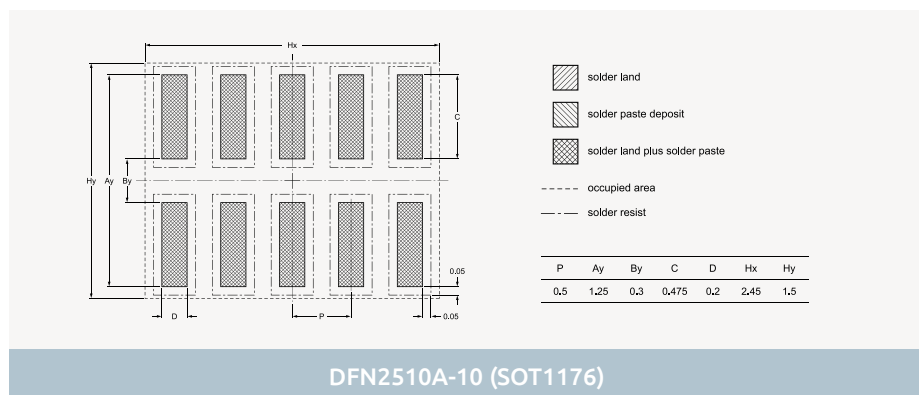
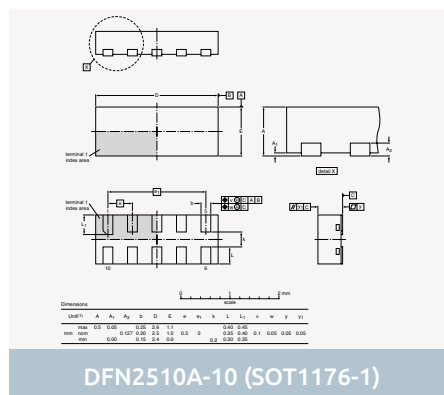
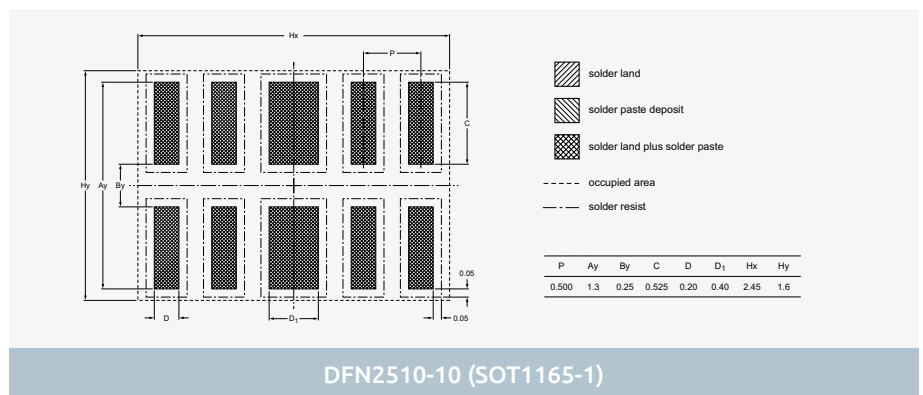
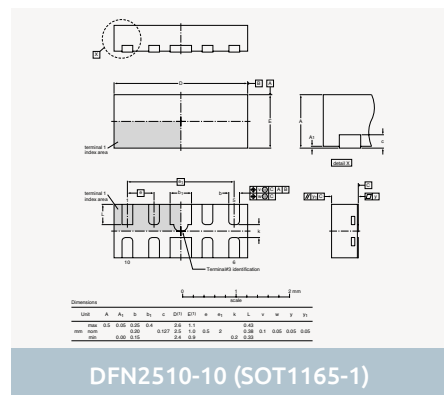
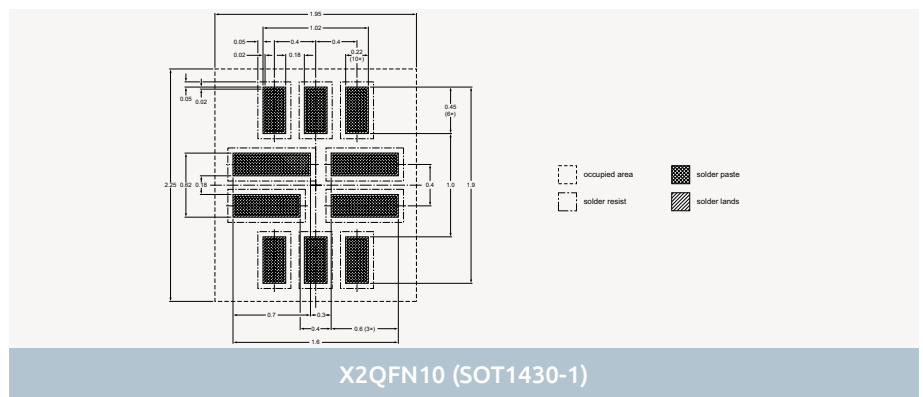
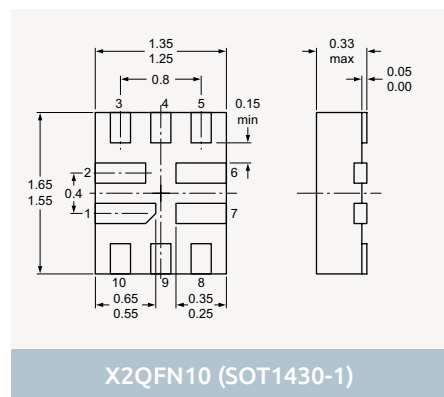
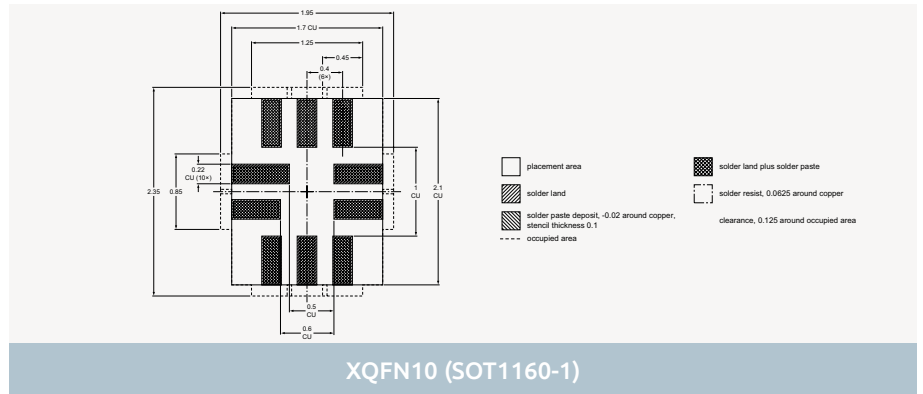
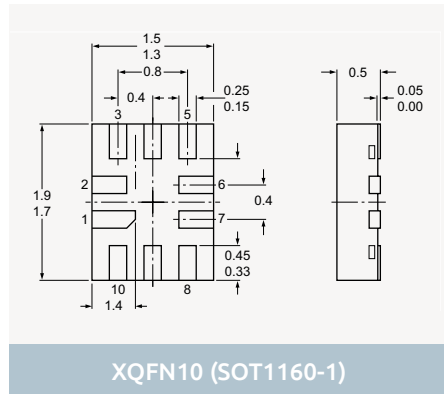
Dimensions in mm

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## 10-pin SMD packages



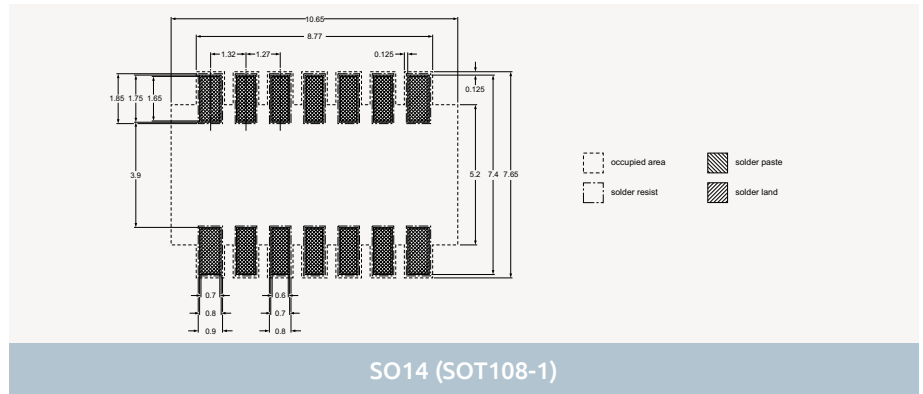
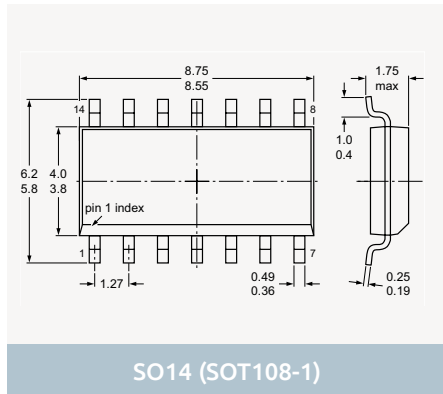
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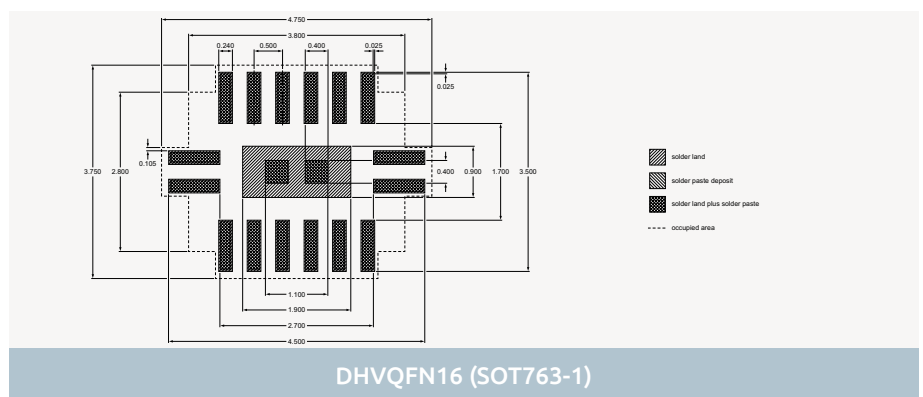
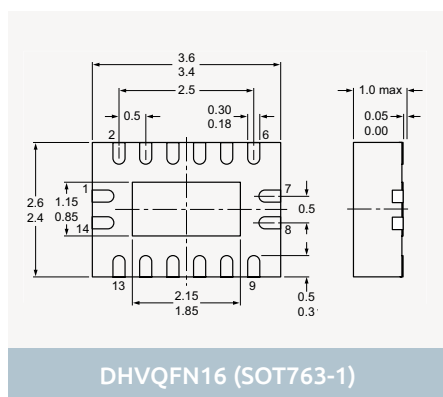
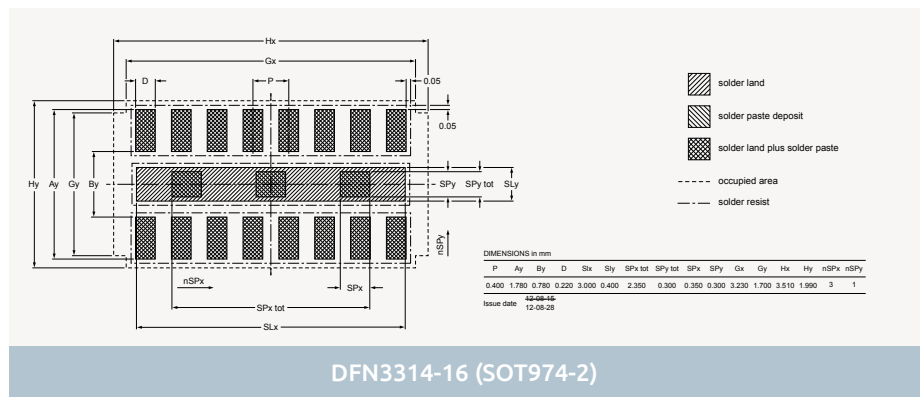
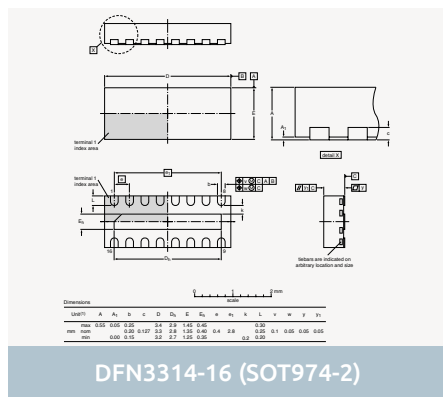
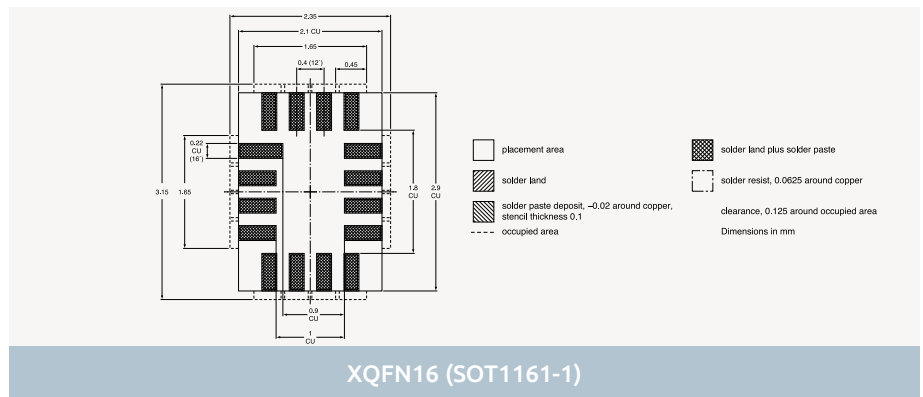
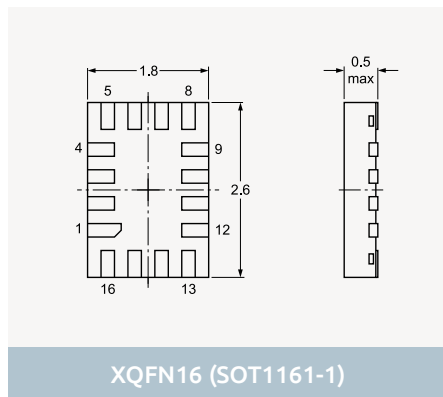


# Minimized outline drawings and reflow soldering footprint

## 14-pin SMD packages



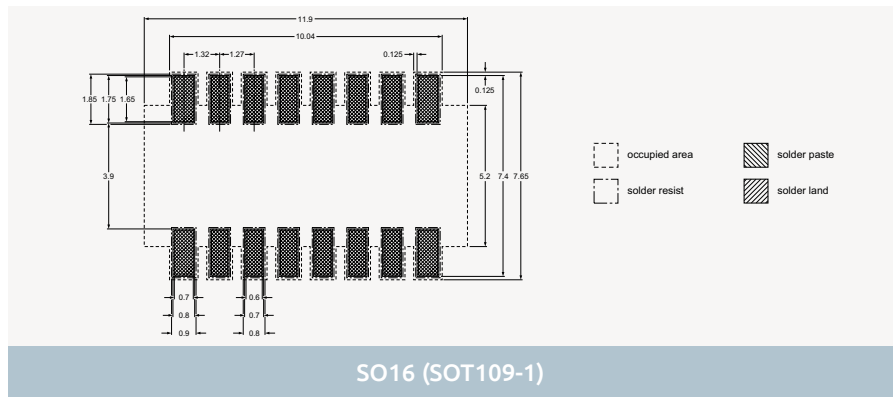
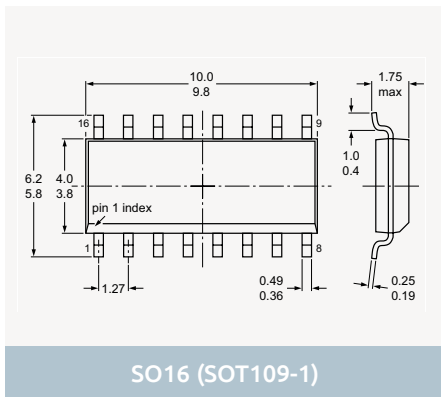
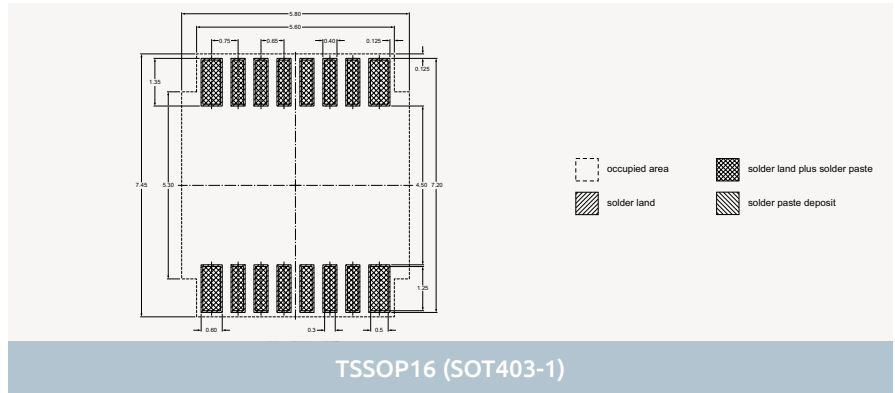
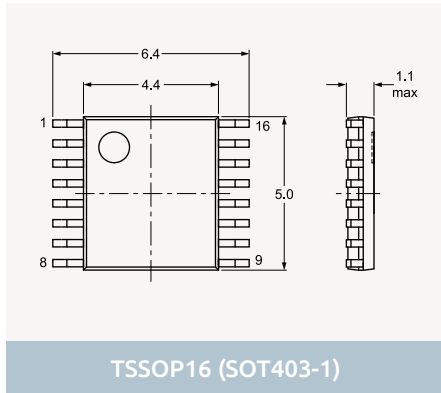
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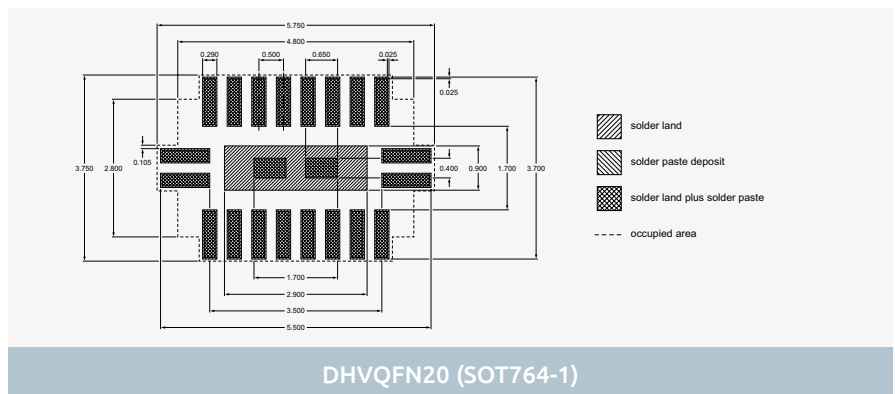
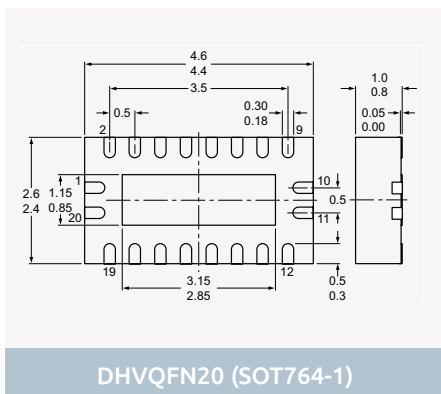
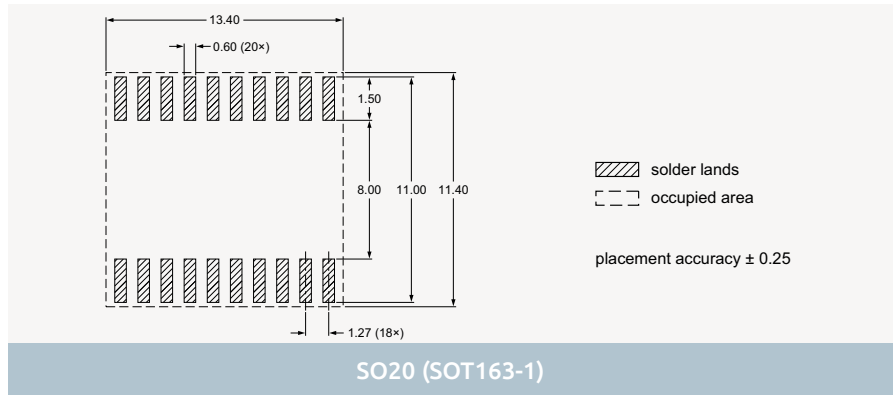
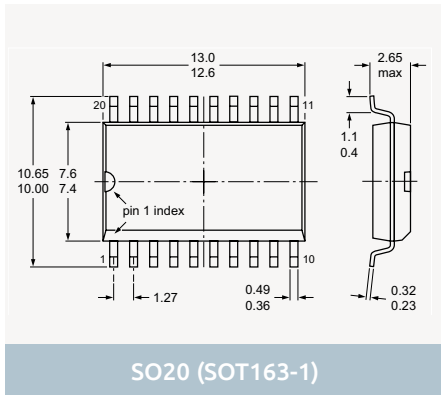
Dimensions in mm

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## 16-pin SMD packages



## 20-pin SMD packages

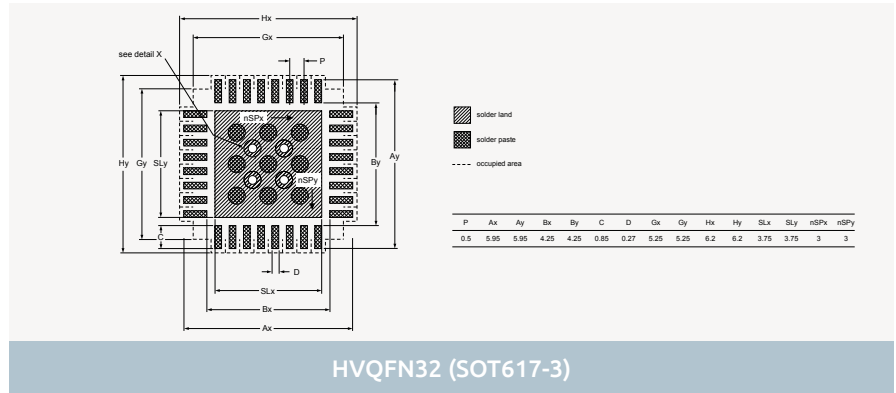
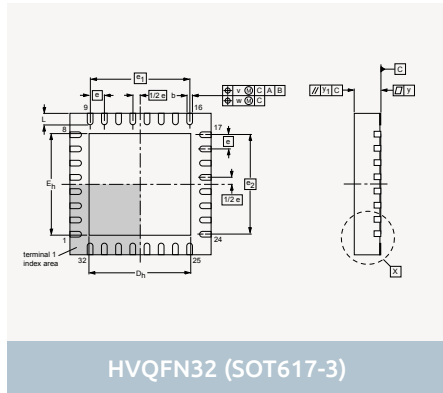


Dimensions in mm

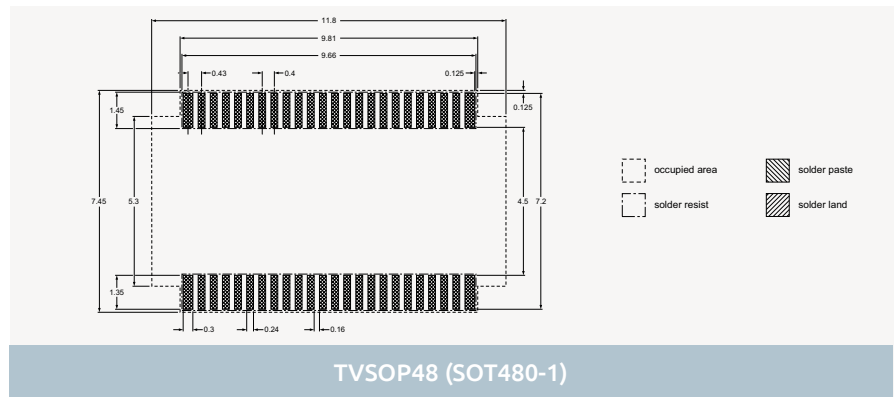
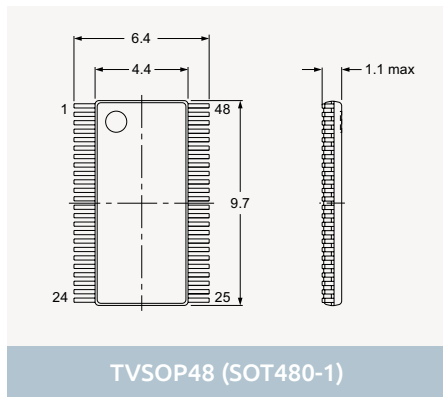
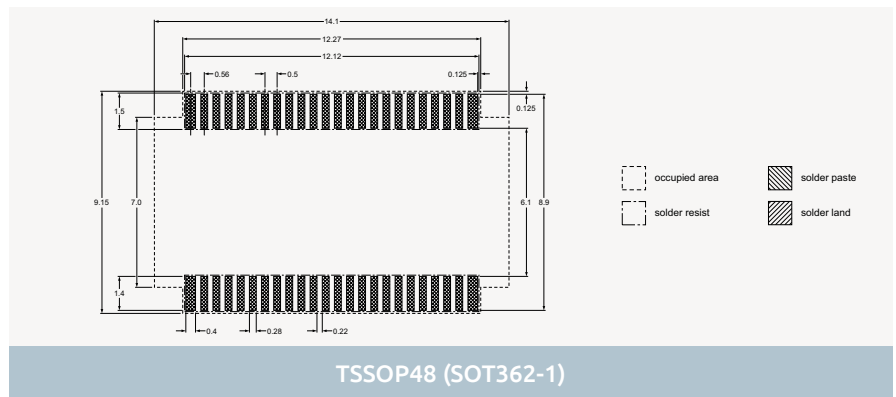
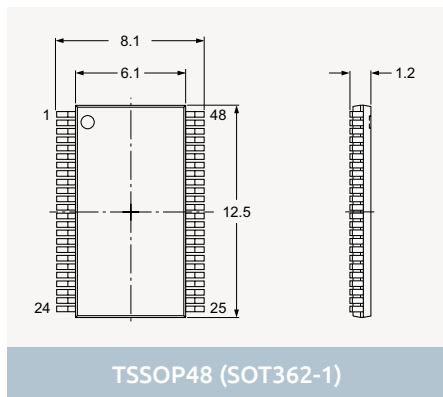
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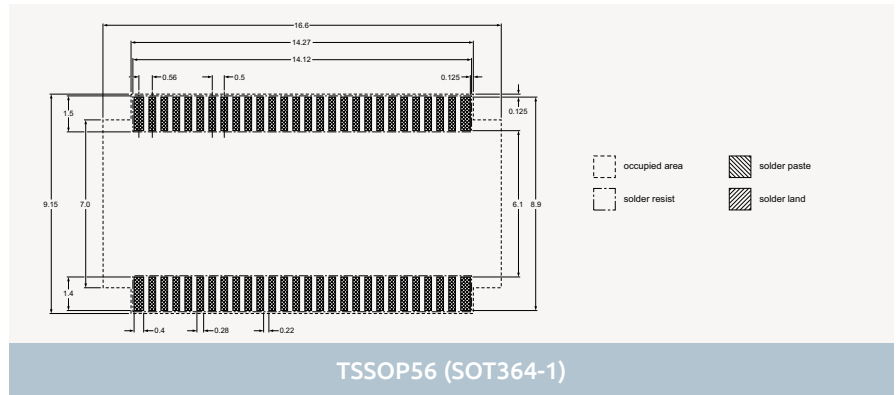
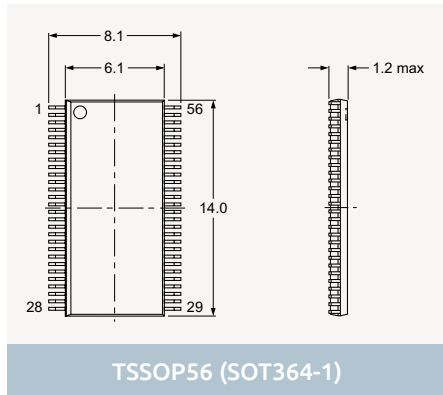
### 32-pin SMD packages



### 48-pin SMD packages



### 56-pin SMD packages



Dimensions in mm

Images are for reference only, for detailed drawings please visit [nexperia.com/packages](http://nexperia.com/packages)

# Index

| Type number    | Page Number | Type number     | Page Number | Type number     | Page Number | Type number      | Page Number | Type number      | Page Number |
|----------------|-------------|-----------------|-------------|-----------------|-------------|------------------|-------------|------------------|-------------|
| 1N47xxA series | 36          | 2PD602ASL       | 14          | 74AHC1G17-Q100  | 124         | 74AHC74-Q100     | 113         | 74AHCT244        | 131         |
| 1PS10SB82      | 43          | 74ABT00         | 158         | 74AHC1G32       | 161         | 74AHC86          | 158         | 74AHCT244-Q100   | 109         |
| 1PS300         | 38          | 74ABT04         | 131         | 74AHC1G32-Q100  | 127         | 74AHC86-Q100     | 115         | 74AHCT244A       | 131         |
| 1PS301         | 38          | 74ABT08         | 156         | 74AHC1G4210     | 154         | 74AHC9541A       | 131         | 74AHCT245        | 141         |
| 1PS302         | 38          | 74ABT125        | 131         | 74AHC1G4212     | 154         | 74AHCT00         | 158         | 74AHCT245-Q100   | 122         |
| 1PS705B20      | 47          | 74ABT126        | 131         | 74AHC1G4214     | 154         | 74AHCT00-Q100    | 115         | 74AHCT245A       | 141         |
| 1PS705B82      | 43          | 74ABT162244     | 131         | 74AHC1G66       | 145         | 74AHCT02         | 160         | 74AHCT257        | 148         |
| 1PS705B84      | 43          | 74ABT162245A    | 141         | 74AHC1G66-Q100  | 123         | 74AHCT02-Q100    | 115         | 74AHCT257-Q100   | 113         |
| 1PS705B85      | 43          | 74ABT16240A     | 131         | 74AHC1G79       | 152         | 74AHCT04         | 131         | 74AHCT273        | 152         |
| 1PS705B86      | 43          | 74ABT16244A     | 131         | 74AHC1G79-Q100  | 126         | 74AHCT04-Q100    | 109         | 74AHCT273-Q100   | 113         |
| 1PS745B23      | 47          | 74ABT16245B     | 141         | 74AHC1G86       | 158         | 74AHCT04A        | 131         | 74AHCT2G00       | 159         |
| 1PS765B17      | 43          | 74ABT20         | 158         | 74AHC1G86-Q100  | 127         | 74AHCT07A        | 131         | 74AHCT2G00-Q100  | 127         |
| 1PS795B17      | 43          | 74ABT244        | 131         | 74AHC1GU04      | 131         | 74AHCT08         | 156         | 74AHCT2G08       | 156         |
| 1PS885B82      | 43          | 74ABT245        | 141         | 74AHC1GU04-Q100 | 124         | 74AHCT08-Q100    | 115         | 74AHCT2G08-Q100  | 127         |
| 2N7002BK       | 85          | 74ABT32         | 161         | 74AHC240-Q100   | 109         | 74AHCT123A       | 155         | 74AHCT2G125      | 131         |
| 2N7002BKMB     | 85          | 74ABTH162245A   | 141         | 74AHC244        | 131         | 74AHCT123A-Q100  | 118         | 74AHCT2G125-Q100 | 124         |
| 2N7002BKMS     | 94          | 74AHC00         | 158         | 74AHC244-Q100   | 109         | 74AHCT125        | 131         | 74AHCT2G126      | 132         |
| 2N7002BKNS     | 85          | 74AHC00-Q100    | 115         | 74AHC245        | 131         | 74AHCT125-Q100   | 109         | 74AHCT2G126-Q100 | 124         |
| 2N7002BKOW     | 85          | 74AHC02         | 160         | 74AHC245-Q100   | 122         | 74AHCT126        | 131         | 74AHCT2G241      | 132         |
| 2N7002CK       | 85          | 74AHC02-Q100    | 115         | 74AHC257        | 113         | 74AHCT126-Q100   | 109         | 74AHCT2G241-Q100 | 124         |
| 2N700BKMB      | 94          | 74AHC04         | 131         | 74AHC257-Q100   | 148         | 74AHCT132        | 138         | 74AHCT2G32       | 161         |
| 2PA1576Q       | 14          | 74AHC04-Q100    | 109         | 74AHC273        | 152         | 74AHCT132-Q100   | 109         | 74AHCT2G32-Q100  | 127         |
| 2PA1576R       | 14          | 74AHC08         | 156         | 74AHC273-Q100   | 113         | 74AHCT138        | 147         | 74AHCT30         | 159         |
| 2PA1576S       | 14          | 74AHC08-Q100    | 115         | 74AHC2G00       | 158         | 74AHCT138-Q100   | 112         | 74AHCT30-Q100    | 115         |
| 2PA1774QM      | 14          | 74AHC123A       | 155         | 74AHC2G00-Q100  | 127         | 74AHCT139        | 147         | 74AHCT32         | 161         |
| 2PA1774QMB     | 14          | 74AHC123A-Q100  | 118         | 74AHC2G08       | 156         | 74AHCT139-Q100   | 112         | 74AHCT32-Q100    | 115         |
| 2PA1774RM      | 14          | 74AHC125        | 131         | 74AHC2G08-Q100  | 127         | 74AHCT14         | 131, 138    | 74AHCT374        | 152         |
| 2PA1774RMB     | 14          | 74AHC125-Q100   | 109         | 74AHC2G125      | 131         | 74AHCT14-Q100    | 119         | 74AHCT374-Q100   | 113         |
| 2PA1774SM      | 14          | 74AHC126        | 131         | 74AHC2G125-Q100 | 124         | 74AHCT14A        | 131         | 74AHCT377        | 152         |
| 2PA1774SMB     | 14          | 74AHC126-Q100   | 109         | 74AHC2G126      | 131         | 74AHCT157        | 148         | 74AHCT377-Q100   | 113         |
| 2PB1219AQ      | 14          | 74AHC132        | 138, 158    | 74AHC2G126-Q100 | 124         | 74AHCT157-Q100   | 113         | 74AHCT3G04       | 132         |
| 2PB1219AR      | 14          | 74AHC132-Q100   | 119         | 74AHC2G241      | 131         | 74AHCT164        | 148         | 74AHCT3G04-Q100  | 124         |
| 2PB1219AS      | 14          | 74AHC138        | 147         | 74AHC2G241-Q100 | 124         | 74AHCT164-Q100   | 120         | 74AHCT3G14       | 132, 138    |
| 2PB709ARL      | 14          | 74AHC138-Q100   | 112         | 74AHC2G32       | 161         | 74AHCT17A        | 131, 138    | 74AHCT3G14-Q100  | 129         |
| 2PB709ART      | 14          | 74AHC139        | 147         | 74AHC2G32-Q100  | 127         | 74AHCT1G00       | 127         | 74AHCT541        | 132         |
| 2PB709ARW      | 14          | 74AHC139-Q100   | 112         | 74AHC30         | 159         | 74AHCT1G00-Q100  | 159         | 74AHCT541-Q100   | 109         |
| 2PB709ASL      | 14          | 74AHC14         | 131, 138    | 74AHC30-Q100    | 115         | 74AHCT1G02       | 160         | 74AHCT541A       | 132         |
| 2PB709ASW      | 14          | 74AHC14-Q100    | 119         | 74AHC32         | 161         | 74AHCT1G02-Q100  | 127         | 74AHCT573        | 150         |
| 2PB709BRL      | 14          | 74AHC157        | 148         | 74AHC32-Q100    | 115         | 74AHCT1G04       | 131         | 74AHCT573-Q100   | 117         |
| 2PB709BSL      | 14          | 74AHC157-Q100   | 113         | 74AHC373        | 150         | 74AHCT1G04-Q100  | 124         | 74AHCT574        | 152         |
| 2PB710ARL      | 14          | 74AHC164        | 148         | 74AHC374        | 152         | 74AHCT1G08       | 156         | 74AHCT594        | 148         |
| 2PB710ASL      | 14          | 74AHC164-Q100   | 120         | 74AHC374-Q100   | 113         | 74AHCT1G08-Q100  | 127         | 74AHCT594-Q100   | 120         |
| 2PC4081Q       | 14          | 74AHC1G00       | 158         | 74AHC377        | 152         | 74AHCT1G125      | 131         | 74AHCT595        | 148         |
| 2PC4081R       | 14          | 74AHC1G00-Q100  | 127         | 74AHC377-Q100   | 113         | 74AHCT1G125-Q100 | 124         | 74AHCT595-Q100   | 120         |
| 2PC4081S       | 14          | 74AHC1G02       | 160         | 74AHC3G04       | 131         | 74AHCT1G126      | 131         | 74AHCT74         | 152         |
| 2PC4617QM      | 14          | 74AHC1G02-Q100  | 127         | 74AHC3G04-Q100  | 124         | 74AHCT1G126-Q100 | 124         | 74AHCT74-Q100    | 113         |
| 2PC4617QMB     | 14          | 74AHC1G04       | 131         | 74AHC3G14       | 131, 138    | 74AHCT1G14       | 131, 138    | 74AHCT86         | 158         |
| 2PC4617RM      | 14          | 74AHC1G04-Q100  | 124         | 74AHC3G14-Q100  | 129         | 74AHCT1G14-Q100  | 129         | 74AHCT86-Q100    | 115         |
| 2PC4617RMB     | 14          | 74AHC1G07-Q100  | 124         | 74AHC3GU04      | 131         | 74AHCT1G17       | 131, 138    | 74AHCU04         | 132         |
| 2PD1820AR      | 14          | 74AHC1G08       | 158         | 74AHC3GU04-Q100 | 124         | 74AHCT1G17-Q100  | 124         | 74AHCU04-Q100    | 109         |
| 2PD1820AS      | 14          | 74AHC1G08-Q100  | 127         | 74AHC541        | 131         | 74AHCT1G32       | 161         | 74AHCV07A        | 132, 138    |
| 2PD601ARL      | 14          | 74AHC1G09       | 156         | 74AHC541-Q100   | 109         | 74AHCT1G32-Q100  | 124         | 74AHCV14A        | 132, 138    |
| 2PD601ART      | 14          | 74AHC1G09-Q100  | 127         | 74AHC573        | 150         | 74AHCT1G66       | 145         | 74AHCV17A        | 132, 138    |
| 2PD601ARW      | 14          | 74AHC1G125      | 131         | 74AHC573-Q100   | 117         | 74AHCT1G66-Q100  | 123         | 74AHCV244A       | 132, 138    |
| 2PD601ASL      | 14          | 74AHC1G125-Q100 | 124         | 74AHC574        | 150         | 74AHCT1G79       | 152         | 74AHCV245A       | 132, 138    |
| 2PD601ASW      | 14          | 74AHC1G126      | 131         | 74AHC594        | 148         | 74AHCT1G79-Q100  | 126         | 74AHCV541A       | 132, 138    |
| 2PD601BRL      | 14          | 74AHC1G126-Q100 | 124         | 74AHC594-Q100   | 120         | 74AHCT1G86       | 158         | 74ALVC00         | 159         |
| 2PD601BSL      | 14          | 74AHC1G14       | 131, 138    | 74AHC595        | 148         | 74AHCT1G86-Q100  | 127         | 74ALVC00-Q100    | 115         |
| 2PD602AQL      | 14          | 74AHC1G14-Q100  | 129         | 74AHC595-Q100   | 120         | 74AHCT240        | 109         | 74ALVC02         | 160         |
| 2PD602ARL      | 14          | 74AHC1G17       | 131, 138    | 74AHC74         | 152         | 74AHCT240-Q100   | 131         | 74ALVC04         | 132         |

| Type number       | Page Number | Type number     | Page Number  | Type number      | Page Number  | Type number      | Page Number  | Type number       | Page Number |
|-------------------|-------------|-----------------|--------------|------------------|--------------|------------------|--------------|-------------------|-------------|
| 74ALVC08          | 156         | 74AUP1G02-Q100  | 127          | 74AUP1T57        | 142, 157     | 74AVC1T1004      | 11, 133, 143 | 74AXP2T3407       | 143         |
| 74ALVC125         | 132         | 74AUP1G04       | 132          | 74AUP1T58        | 142, 157     | 74AVC1T1022      | 143          | 74CB3Q3253        | 146         |
| 74ALVC125-Q100    | 109         | 74AUP1G04-Q100  | 124          | 74AUP1T86        | 11, 142, 158 | 74AVC1T45        | 143          | 74CB3Q3257        | 146         |
| 74ALVC14          | 132, 138    | 74AUP1G06       | 132          | 74AUP1T87        | 11, 142, 158 | 74AVC1T45-Q100   | 130          | 74CBTLV16211      | 146         |
| 74ALVC162334A     | 150         | 74AUP1G06-Q100  | 124          | 74AUP1T97        | 142, 157     | 74AVC1T8128      | 11, 143      | 74CBTLV1G125      | 146         |
| 74ALVC16244       | 132         | 74AUP1G07       | 132          | 74AUP1T98        | 142, 157     | 74AVC1T8832      | 11, 143      | 74CBTLV3125       | 146         |
| 74ALVC16245       | 141         | 74AUP1G08       | 156          | 74AUP1T98-Q100   | 130          | 74AVC20T245      | 143          | 74CBTLV3125-Q100  | 112         |
| 74ALVC162834A     | 150         | 74AUP1G08-Q100  | 127          | 74AUP1Z04        | 157          | 74AVC20T245-Q100 | 118          | 74CBTLV3126       | 146         |
| 74ALVC162835A     | 150         | 74AUP1G0832     | 157          | 74AUP1Z125       | 157          | 74AVC2T245       | 143          | 74CBTLV3126-Q100  | 112         |
| 74ALVC162836A     | 150         | 74AUP1G09       | 156          | 74AUP2G00        | 159          | 74AVC2T45        | 143          | 74CBTLV3244       | 146         |
| 74ALVC164245      | 142         | 74AUP1G11       | 156          | 74AUP2G02        | 160          | 74AVC2T45-Q100   | 130          | 74CBTLV3245       | 146         |
| 74ALVC164245-Q100 | 118         | 74AUP1G125      | 132          | 74AUP2G04        | 132          | 74AVC32T245      | 143          | 74CBTLV3245-Q100  | 112         |
| 74ALVC16834A      | 150         | 74AUP1G125-Q100 | 124          | 74AUP2G04-Q100   | 124          | 74AVC4T245       | 143          | 74CBTLV3253       | 146         |
| 74ALVC16835A      | 150         | 74AUP1G126      | 132          | 74AUP2G06        | 132          | 74AVC4T245-Q100  | 118          | 74CBTLV3253-Q100  | 112         |
| 74ALVC16836A      | 150         | 74AUP1G132      | 138, 159     | 74AUP2G0604      | 157          | 74AVC4T3144      | 11, 133, 143 | 74CBTLV3257       | 146         |
| 74ALVC244         | 132         | 74AUP1G14       | 132, 138     | 74AUP2G07        | 132          | 74AVC4T774       | 11, 141, 143 | 74CBTLV3257-Q100  | 112         |
| 74ALVC245         | 141         | 74AUP1G157      | 148          | 74AUP2G08        | 156          | 74AVC4TD245      | 143          | 74CBTLV3306       | 146         |
| 74ALVC32          | 161         | 74AUP1G158      | 148          | 74AUP2G125       | 133          | 74AVC8T245       | 118          | 74CBTLV3384       | 146         |
| 74ALVC32-Q100     | 132         | 74AUP1G16       | 132          | 74AUP2G126       | 133          | 74AVC8T245-Q100  | 143          | 74CBTLV3861       | 146         |
| 74ALVC373         | 150         | 74AUP1G17       | 138          | 74AUP2G132       | 139, 159     | 74AVCH16244      | 133          | 74CBTLVD3244      | 146         |
| 74ALVC374         | 152         | 74AUP1G175      | 152          | 74AUP2G14        | 133, 139     | 74AVCH16245      | 141          | 74CBTLVD3245      | 146         |
| 74ALVCS41         | 132         | 74AUP1G175-Q100 | 126          | 74AUP2G157       | 148          | 74AVCH16T245     | 143          | 74CBTLVD3245-Q100 | 112         |
| 74ALVCS41-Q100    | 109         | 74AUP1G18       | 147          | 74AUP2G16        | 133          | 74AVCH1T45       | 143          | 74CBTLVD3384      | 146         |
| 74ALVCS73         | 150         | 74AUP1G19       | 147          | 74AUP2G17        | 133, 139     | 74AVCH1T45-Q100  | 130          | 74CBTLVD3861      | 146         |
| 74ALVCS74         | 152         | 74AUP1G240      | 132          | 74AUP2G240       | 133          | 74AVCH20T245     | 143          | 74HC00            | 159         |
| 74ALVC74          | 152         | 74AUP1G32       | 161          | 74AUP2G241       | 133          | 74AVCH2T45       | 143          | 74HC00-Q100       | 116         |
| 74ALVCH162244     | 132         | 74AUP1G32-Q100  | 127          | 74AUP2G32        | 161          | 74AVCH4T245      | 143          | 74HC02            | 160         |
| 74ALVCH162245     | 141         | 74AUP1G3208     | 158          | 74AUP2G34        | 133          | 74AVCH4T245-Q100 | 118          | 74HC02-Q100       | 116         |
| 74ALVCH16244      | 132         | 74AUP1G332      | 161          | 74AUP2G3404      | 157          | 74AVCH8T245      | 143          | 74HC03            | 159         |
| 74ALVCH16245      | 141         | 74AUP1G34       | 132          | 74AUP2G3407      | 157          | 74AXP1G00        | 159          | 74HC03-Q100       | 116         |
| 74ALVCH162601     | 141         | 74AUP1G34-Q100  | 124          | 74AUP2G38        | 159          | 74AXP1G02        | 160          | 74HC04            | 133         |
| 74ALVCH162827     | 132         | 74AUP1G373      | 150          | 74AUP2G57        | 157          | 74AXP1G04        | 133          | 74HC04-Q100       | 109         |
| 74ALVCH16373      | 150         | 74AUP1G373-Q100 | 128          | 74AUP2G58        | 139, 157     | 74AXP1G06        | 133          | 74HC05            | 133         |
| 74ALVCH16374      | 152         | 74AUP1G374      | 150          | 74AUP2G79        | 152          | 74AXP1G07        | 133          | 74HC05-Q100       | 109         |
| 74ALVCH16500      | 150         | 74AUP1G374-Q100 | 128          | 74AUP2G79-Q100   | 126          | 74AXP1G08        | 156          | 74HC08            | 156         |
| 74ALVCH16501      | 141         | 74AUP1G38       | 158          | 74AUP2G80        | 152          | 74AXP1G09        | 156          | 74HC08-Q100       | 116         |
| 74ALVCH16543      | 141         | 74AUP1G386      | 158          | 74AUP2G86        | 158          | 74AXP1G10        | 159          | 74HC10            | 159         |
| 74ALVCH16600      | 141         | 74AUP1G57       | 139, 157     | 74AUP2G97        | 139, 157     | 74AXP1G11        | 156          | 74HC10-Q100       | 116         |
| 74ALVCH16601      | 141         | 74AUP1G58       | 139, 157     | 74AUP2G98        | 139, 157     | 74AXP1G125       | 133          | 74HC107           | 152         |
| 74ALVCH16646      | 141         | 74AUP1G74       | 152          | 74AUP2GU04       | 133          | 74AXP1G14        | 133, 139     | 74HC107-Q100      | 111         |
| 74ALVCH16652      | 141         | 74AUP1G74-Q100  | 126          | 74AUP2GU04-Q100  | 124          | 74AXP1G157       | 148          | 74HC109           | 152         |
| 74ALVCH16821      | 152         | 74AUP1G79       | 152          | 74AUP2T1326      | 143, 157     | 74AXP1G17        | 133, 139     | 74HC109-Q100      | 114         |
| 74ALVCH16823      | 152         | 74AUP1G80       | 152          | 74AUP3G04        | 133          | 74AXP1G32        | 161          | 74HC11            | 116         |
| 74ALVCH16825      | 132         | 74AUP1G86       | 158          | 74AUP3G0434      | 157          | 74AXP1G57        | 139, 157     | 74HC11-Q100       | 156         |
| 74ALVCH16827      | 152         | 74AUP1G86-Q100  | 127          | 74AUP3G14        | 133, 139     | 74AXP1G58        | 139, 157     | 74HC112           | 152         |
| 74ALVCH16841      | 150         | 74AUP1G885      | 157          | 74AUP3G16        | 133          | 74AXP1G86        | 158          | 74HC123           | 155         |
| 74ALVCH16843      | 150         | 74AUP1G97       | 139, 157     | 74AUP3G17        | 133, 137     | 74AXP1G97        | 139, 157     | 74HC123-Q100      | 118         |
| 74ALVCH16952      | 141         | 74AUP1G98       | 139, 157     | 74AUP3G3404      | 157          | 74AXP1G98        | 139, 157     | 74HC125           | 133         |
| 74ALVCH32973      | 150         | 74AUP1GU04      | 132          | 74AVC16244       | 141          | 74AXP1T125       | 143          | 74HC125-Q100      | 109         |
| 74ALVT162245      | 141         | 74AUP1T00       | 11, 142, 159 | 74AVC16245       | 141          | 74AXP1T14        | 139, 143     | 74HC126           | 133         |
| 74ALVT16244       | 132         | 74AUP1T02       | 11, 142, 160 | 74AVC16245-Q100  | 122          | 74AXP1T32        | 143          | 74HC126-Q100      | 109         |
| 74ALVT162821      | 152         | 74AUP1T04       | 11, 132, 142 | 74AVC16334A      | 150          | 74AXP1T34        | 143          | 74HC132           | 139, 159    |
| 74ALVT162823      | 152         | 74AUP1T08       | 11, 142, 156 | 74AVC16373       | 150          | 74AXP1T57        | 139, 143     | 74HC132-Q100      | 119         |
| 74ALVT162827      | 132         | 74AUP1T14       | 11, 132, 142 | 74AVC16374       | 152          | 74AXP1T57-Q100   | 130          | 74HC137           | 147         |
| 74ALVT16373       | 150         | 74AUP1T17       | 11, 132, 142 | 74AVC16374-Q100  | 113          | 74AXP2G14        | 139          | 74HC138           | 147         |
| 74ALVT16821       | 152         | 74AUP1T32       | 11, 142, 161 | 74AVC16834A      | 150          | 74AXP2G17        | 133, 139     | 74HC138-Q100      | 112         |
| 74ALVT16823       | 152         | 74AUP1T34       | 142          | 74AVC16835A      | 150          | 74AXP2G34        | 133          | 74HC139           | 147         |
| 74ALVT16827       | 132         | 74AUP1T34-Q100  | 130          | 74AVC16836A      | 150          | 74AXP2G3404      | 133          | 74HC139-Q100      | 112         |
| 74AUP1G00         | 159         | 74AUP1T45       | 142          | 74AVC16T245      | 143          | 74AXP2T08        | 143          | 74HC14            | 133, 139    |
| 74AUP1G02         | 160         | 74AUP1T50       | 11, 132, 142 | 74AVC16T245-Q100 | 118          | 74AXP2T08-Q100   | 130          | 74HC14-Q100       | 119         |

# Index

| Type number    | Page Number | Type number    | Page Number | Type number    | Page Number | Type number   | Page Number | Type number     | Page Number |
|----------------|-------------|----------------|-------------|----------------|-------------|---------------|-------------|-----------------|-------------|
| 74HC151        | 148         | 74HC245-Q100   | 122         | 74HC3G14       | 134         | 74HC573       | 150         | 74HCT151        | 148         |
| 74HC151-Q100   | 113         | 74HC251        | 148         | 74HC3G14-Q100  | 129         | 74HC573-Q100  | 117         | 74HCT151-Q100   | 113         |
| 74HC153        | 148         | 74HC251-Q100   | 113         | 74HC3G16       | 134         | 74HC574       | 153         | 74HCT153        | 148         |
| 74HC153-Q100   | 113         | 74HC253        | 148         | 74HC3G34       | 134         | 74HC574-Q100  | 114         | 74HCT153-Q100   | 113         |
| 74HC154        | 147         | 74HC253-Q100   | 113         | 74HC3G34-Q100  | 125         | 74HC590       | 154         | 74HCT154        | 147         |
| 74HC157        | 148         | 74HC257        | 148         | 74HC3GU04      | 134         | 74HC594       | 149         | 74HCT157        | 148         |
| 74HC157-Q100   | 113         | 74HC257-Q100   | 113         | 74HC3GU04-Q100 | 124         | 74HC594-Q100  | 120         | 74HCT157-Q100   | 113         |
| 74HC158        | 148         | 74HC259        | 150         | 74HC4002       | 160         | 74HC595       | 149         | 74HCT161        | 154         |
| 74HC160        | 154         | 74HC259-Q100   | 117         | 74HC4002-Q100  | 116         | 74HC595-Q100  | 120         | 74HCT163        | 154         |
| 74HC161        | 154         | 74HC27         | 160         | 74HC40103      | 154         | 74HC597       | 149         | 74HCT163-Q100   | 111         |
| 74HC161-Q100   | 111         | 74HC27-Q100    | 116         | 74HC40105      | 154         | 74HC597-Q100  | 120         | 74HCT164        | 149         |
| 74HC163-Q100   | 111         | 74HC273        | 152         | 74HC4016       | 145         | 74HC6323      | 154         | 74HCT164-Q100   | 120         |
| 74HC164        | 149         | 74HC273-Q100   | 114         | 74HC4017       | 154         | 74HC688       | 162         | 74HCT165        | 149         |
| 74HC164-Q100   | 120         | 74HC280        | 162         | 74HC4017-Q100  | 111         | 74HC7014      | 134, 139    | 74HCT165-Q100   | 120         |
| 74HC165        | 149         | 74HC2G00       | 159         | 74HC4020       | 154         | 74HC7014-Q100 | 119         | 74HCT166        | 149         |
| 74HC165-Q100   | 120         | 74HC2G00-Q100  | 127         | 74HC4020-Q100  | 111         | 74HC73        | 153         | 74HCT166-Q100   | 120         |
| 74HC166        | 149         | 74HC2G02       | 160         | 74HC4024       | 154         | 74HC74        | 153         | 74HCT173        | 153         |
| 74HC166-Q100   | 120         | 74HC2G02-Q100  | 127         | 74HC4024-Q100  | 111         | 74HC74-Q100   | 114         | 74HCT174        | 153         |
| 74HC173        | 152         | 74HC2G04       | 133         | 74HC4040       | 154         | 74HC75        | 150         | 74HCT174-Q100   | 114         |
| 74HC174        | 152         | 74HC2G04-Q100  | 125         | 74HC4040-Q100  | 111         | 74HC7540      | 134, 139    | 74HCT175        | 153         |
| 74HC174-Q100   | 114         | 74HC2G08       | 156         | 74HC4046A      | 155         | 74HC7541      | 134, 139    | 74HCT175-Q100   | 114         |
| 74HC175        | 152         | 74HC2G08-Q100  | 127         | 74HC4049       | 143         | 74HC7541-Q100 | 119         | 74HCT193        | 154         |
| 74HC175-Q100   | 114         | 74HC2G125      | 133         | 74HC4050       | 143         | 74HC85        | 162         | 74HCT193-Q100   | 111         |
| 74HC191        | 154         | 74HC2G125-Q100 | 125         | 74HC4050-Q100  | 118         | 74HC86        | 158         | 74HCT1G00       | 159         |
| 74HC193        | 154         | 74HC2G14       | 133, 139    | 74HC4051       | 145         | 74HC86-Q100   | 116         | 74HCT1G00-Q100  | 127         |
| 74HC193-Q100   | 111         | 74HC2G14-Q100  | 129         | 74HC4051-Q100  | 108         | 74HC9114      | 134, 139    | 74HCT1G02       | 160         |
| 74HC1G00       | 159         | 74HC2G17       | 134, 139    | 74HC4052       | 145         | 74HC9115      | 134, 139    | 74HCT1G02-Q100  | 127         |
| 74HC1G00-Q100  | 127         | 74HC2G17-Q100  | 129         | 74HC4052-Q100  | 108         | 74HCT00       | 159         | 74HCT1G04       | 134         |
| 74HC1G02       | 160         | 74HC2G32       | 161         | 74HC4053       | 145         | 74HCT00-Q100  | 116         | 74HCT1G04-Q100  | 124         |
| 74HC1G02-Q100  | 127         | 74HC2G32-Q100  | 128         | 74HC4053-Q100  | 108         | 74HCT02       | 160         | 74HCT1G08       | 156         |
| 74HC1G04       | 133         | 74HC2G34       | 134         | 74HC4060       | 154         | 74HCT02-Q100  | 116         | 74HCT1G08-Q100  | 127         |
| 74HC1G04-Q100  | 124         | 74HC2G34-Q100  | 125         | 74HC4060-Q100  | 111         | 74HCT03       | 159         | 74HCT1G125      | 134         |
| 74HC1G08       | 156         | 74HC2G66       | 145         | 74HC4066       | 145         | 74HCT03-Q100  | 116         | 74HCT1G125-Q100 | 124         |
| 74HC1G08-Q100  | 127         | 74HC2G66-Q100  | 133         | 74HC4066-Q100  | 108         | 74HCT04       | 134         | 74HCT1G126      | 134         |
| 74HC1G125      | 133         | 74HC2G86       | 158         | 74HC4067       | 145         | 74HCT04-Q100  | 134         | 74HCT1G14       | 134, 140    |
| 74HC1G125-Q100 | 124         | 74HC2G86-Q100  | 128         | 74HC4067-Q100  | 108         | 74HCT08       | 156         | 74HCT1G14-Q100  | 129         |
| 74HC1G126      | 133         | 74HC2GU04      | 134         | 74HC4075       | 161         | 74HCT08-Q100  | 116         | 74HCT1G32       | 161         |
| 74HC1G14       | 133, 139    | 74HC2GU04-Q100 | 124         | 74HC4075-Q100  | 116         | 74HCT10       | 159         | 74HCT1G32-Q100  | 127         |
| 74HC1G14-Q100  | 129         | 74HC30         | 159         | 74HC4094       | 149         | 74HCT10-Q100  | 116         | 74HCT1G66       | 145         |
| 74HC1G32       | 161         | 74HC30-Q100    | 116         | 74HC4094-Q100  | 120         | 74HCT107      | 153         | 74HCT1G66-Q100  | 123         |
| 74HC1G32-Q100  | 127         | 74HC32         | 161         | 74HC42         | 147         | 74HCT107-Q100 | 114         | 74HCT1G86       | 158         |
| 74HC1G66       | 145         | 74HC32-Q100    | 116         | 74HC423        | 155         | 74HCT109      | 153         | 74HCT1G86-Q100  | 128         |
| 74HC1G66-Q100  | 123         | 74HC365        | 134         | 74HC4316       | 145         | 74HCT109-Q100 | 114         | 74HCT20         | 159         |
| 74HC1G86       | 158         | 74HC365-Q100   | 109         | 74HC4351       | 145         | 74HCT11       | 156         | 74HCT20-Q100    | 116         |
| 74HC1G86-Q100  | 127         | 74HC366        | 134         | 74HC4511       | 147         | 74HCT11-Q100  | 116         | 74HCT221        | 155         |
| 74HC1GU04      | 133         | 74HC366-Q100   | 109         | 74HC4514       | 147         | 74HCT112      | 153         | 74HCT238        | 147         |
| 74HC1GU04-Q100 | 124         | 74HC368        | 134         | 74HC4515       | 147         | 74HCT123      | 155         | 74HCT238-Q100   | 112         |
| 74HC20         | 159         | 74HC373        | 150         | 74HC4520       | 154         | 74HCT123-Q100 | 118         | 74HCT240        | 134         |
| 74HC20-Q100    | 116         | 74HC373-Q100   | 117         | 74HC4520-Q100  | 111         | 74HCT125      | 134         | 74HCT240-Q100   | 109         |
| 74HC21         | 156         | 74HC374        | 153         | 74HC4538       | 155         | 74HCT125-Q100 | 109         | 74HCT241        | 134         |
| 74HC237        | 147         | 74HC377        | 153         | 74HC4538-Q100  | 118         | 74HCT126      | 134         | 74HCT244        | 134         |
| 74HC237-Q100   | 112         | 74HC377-Q100   | 114         | 74HC4851       | 145         | 74HCT126-Q100 | 109         | 74HCT244-Q100   | 109         |
| 74HC238        | 147         | 74HC390        | 154         | 74HC4851-Q100  | 108         | 74HCT132      | 139, 159    | 74HCT245        | 141         |
| 74HC238-Q100   | 112         | 74HC393        | 154         | 74HC4852       | 145         | 74HCT132-Q100 | 119         | 74HCT245-Q100   | 122         |
| 74HC240        | 133         | 74HC393-Q100   | 111         | 74HC4852-Q100  | 108         | 74HCT138      | 147         | 74HCT251        | 148         |
| 74HC240-Q100   | 109         | 74HC3G04       | 134         | 74HC540        | 134         | 74HCT138-Q100 | 112         | 74HCT251-Q100   | 113         |
| 74HC241        | 133         | 74HC3G04-Q100  | 125         | 74HC540-Q100   | 109         | 74HCT139      | 147         | 74HCT253        | 148         |
| 74HC244        | 133         | 74HC3G06       | 134         | 74HC541        | 134         | 74HCT139-Q100 | 112         | 74HCT253-Q100   | 113         |
| 74HC244-Q100   | 109         | 74HC3G07       | 134         | 74HC541-Q100   | 109         | 74HCT14       | 134, 139    | 74HCT257        | 148         |
| 74HC245        | 141         | 74HC3G07-Q100  | 125         | 74HC5555       | 154         | 74HCT14-Q100  | 119         | 74HCT257-Q100   | 113         |



| Type number     | Page Number | Type number    | Page Number | Type number   | Page Number  | Type number       | Page Number | Type number      | Page Number |
|-----------------|-------------|----------------|-------------|---------------|--------------|-------------------|-------------|------------------|-------------|
| 74HCT259        | 150         | 74HCT4020      | 154         | 74HCU04       | 135          | 74LVC00A          | 159         | 74LVC1G123       | 155         |
| 74HCT259-Q100   | 117         | 74HCT4020-Q100 | 111         | 74HCU04-Q100  | 110          | 74LVC00A-Q100     | 116         | 74LVC1G123-Q100  | 129         |
| 74HCT27         | 160         | 74HCT4040      | 154         | 74LV00        | 159          | 74LVC02A          | 160         | 74LVC1G125       | 135         |
| 74HCT27-Q100    | 116         | 74HCT4040-Q100 | 111         | 74LV02        | 160          | 74LVC02A-Q100     | 116         | 74LVC1G125-Q100  | 125         |
| 74HCT273        | 153         | 74HCT4046A     | 155         | 74LV03        | 159          | 74LVC04A          | 135         | 74LVC1G126       | 136         |
| 74HCT273-Q100   | 114         | 74HCT4051      | 145         | 74LV04        | 135          | 74LVC04A-Q100     | 110         | 74LVC1G126-Q100  | 125         |
| 74HCT280        | 162         | 74HCT4051-Q100 | 108         | 74LV04AT      | 135          | 74LVC06A          | 135         | 74LVC1G14        | 136, 140    |
| 74HCT2G00       | 159         | 74HCT4052      | 145         | 74LV05A       | 135          | 74LVC06A-Q100     | 110         | 74LVC1G14-Q100   | 129         |
| 74HCT2G00-Q100  | 127         | 74HCT4052-Q100 | 108         | 74LV07A       | 135          | 74LVC07A          | 135         | 74LVC1G157       | 148         |
| 74HCT2G02       | 160         | 74HCT4053      | 145         | 74LV07AT      | 135          | 74LVC07A-Q100     | 110         | 74LVC1G157-Q100  | 126         |
| 74HCT2G02-Q100  | 127         | 74HCT4053-Q100 | 108         | 74LV08        | 156          | 74LVC08           | 156         | 74LVC1G16        | 136         |
| 74HCT2G04       | 134         | 74HCT4060      | 154         | 74LV08-Q100   | 116          | 74LVC08A-Q100     | 116         | 74LVC1G17        | 136, 140    |
| 74HCT2G04-Q100  | 125         | 74HCT4060-Q100 | 111         | 74LV123       | 155          | 74LVC10A          | 159         | 74LVC1G17-Q100   | 129         |
| 74HCT2G08       | 156         | 74HCT4066      | 145         | 74LV132       | 140, 159     | 74LVC11           | 156         | 74LVC1G175       | 153         |
| 74HCT2G08-Q100  | 128         | 74HCT4066-Q100 | 108         | 74LV132-Q100  | 119          | 74LVC11-Q100      | 116         | 74LVC1G175-Q100  | 126         |
| 74HCT2G125      | 134         | 74HCT4067      | 145         | 74LV138       | 147          | 74LVC125A         | 135         | 74LVC1G18        | 147         |
| 74HCT2G125-Q100 | 125         | 74HCT4067-Q100 | 108         | 74LV14        | 135, 140     | 74LVC125A-Q100    | 110         | 74LVC1G18-Q100   | 126         |
| 74HCT2G14       | 134, 140    | 74HCT4075      | 161         | 74LV14A       | 135, 140     | 74LVC126A         | 135         | 74LVC1G19        | 147         |
| 74HCT2G14-Q100  | 129         | 74HCT4075-Q100 | 116         | 74LV164       | 149          | 74LVC126A-Q100    | 110         | 74LVC1G19-Q100   | 126         |
| 74HCT2G17       | 134, 140    | 74HCT4094      | 149         | 74LV164-Q100  | 120          | 74LVC132A         | 140, 159    | 74LVC1G27        | 160         |
| 74HCT2G17-Q100  | 129         | 74HCT4094-Q100 | 120         | 74LV165       | 149          | 74LVC132A-Q100    | 119         | 74LVC1G3157      | 145         |
| 74HCT2G32       | 161         | 74HCT423       | 155         | 74LV165-Q100  | 120          | 74LVC138A         | 147         | 74LVC1G3157-Q100 | 123         |
| 74HCT2G32-Q100  | 128         | 74HCT4316      | 145         | 74LV165A      | 149          | 74LVC138A-Q100    | 112         | 74LVC1G32        | 161         |
| 74HCT2G34       | 134         | 74HCT4351      | 145         | 74LV165A-Q100 | 121          | 74LVC139          | 147         | 74LVC1G32-Q100   | 128         |
| 74HCT2G34-Q100  | 125         | 74HCT4511      | 147         | 74LV17A       | 135          | 74LVC14A          | 135, 140    | 74LVC1G332       | 161         |
| 74HCT2G66       | 145         | 74HCT4514      | 147         | 74LV1T00      | 11, 143, 159 | 74LVC14A-Q100     | 119         | 74LVC1G332-Q100  | 128         |
| 74HCT2G66-Q100  | 123         | 74HCT4520      | 154         | 74LV1T02      | 11, 143, 160 | 74LVC157A         | 148         | 74LVC1G34        | 136         |
| 74HCT2G86       | 158         | 74HCT4520-Q100 | 111         | 74LV1T04      | 11, 135, 143 | 74LVC157A-Q100    | 113         | 74LVC1G34-Q100   | 125         |
| 74HCT2G86-Q100  | 128         | 74HCT4538      | 155         | 74LV1T08      | 11, 144, 156 | 74LVC161          | 155         | 74LVC1G38        | 159         |
| 74HCT30         | 159         | 74HCT4538-Q100 | 118         | 74LV1T125     | 11, 135, 144 | 74LVC162244A      | 135         | 74LVC1G38-Q100   | 128         |
| 74HCT30-Q100    | 116         | 74HCT4851      | 145         | 74LV1T126     | 11, 135, 144 | 74LVC162245A      | 141         | 74LVC1G384       | 145         |
| 74HCT32         | 161         | 74HCT4851-Q100 | 108         | 74LV1T32      | 11, 144, 161 | 74LVC162245A-Q100 | 122         | 74LVC1G384-Q100  | 123         |
| 74HCT32-Q100    | 116         | 74HCT4852      | 145         | 74LV1T34      | 11, 135, 144 | 74LVC162373A      | 150         | 74LVC1G386       | 158         |
| 74HCT365        | 134         | 74HCT4852-Q100 | 108         | 74LV1T86      | 11, 144, 158 | 74LVC16240A       | 135         | 74LVC1G53        | 145         |
| 74HCT365-Q100   | 109         | 74HCT540       | 135         | 74LV1T87      | 11, 144, 158 | 74LVC16240A-Q100  | 110         | 74LVC1G53-Q100   | 123         |
| 74HCT366        | 134         | 74HCT540-Q100  | 109         | 74LV244       | 135          | 74LVC16241A       | 135         | 74LVC1G57        | 140, 157    |
| 74HCT366-Q100   | 109         | 74HCT541       | 135         | 74LV244-Q100  | 110          | 74LVC16241A       | 135         | 74LVC1G57-Q100   | 128         |
| 74HCT367        | 134         | 74HCT541-Q100  | 110         | 74LV244A      | 135          | 74LVC16244A       | 135         | 74LVC1G58        | 140, 157    |
| 74HCT368        | 134         | 74HCT573       | 150         | 74LV244AT     | 135          | 74LVC16244A-Q100  | 110         | 74LVC1G58-Q100   | 128         |
| 74HCT373        | 150         | 74HCT573-Q100  | 117         | 74LV245       | 141          | 74LVC16245A       | 141         | 74LVC1G66        | 145         |
| 74HCT373-Q100   | 117         | 74HCT574       | 153         | 74LV245A      | 141          | 74LVC163          | 155         | 74LVC1G66-Q100   | 123         |
| 74HCT374        | 153         | 74HCT574-Q100  | 117         | 74LV245AT     | 141          | 74LVC16373A       | 150         | 74LVC1G74        | 153         |
| 74HCT377        | 153         | 74HCT594       | 149         | 74LV365       | 135          | 74LVC16373A-Q100  | 117         | 74LVC1G74-Q100   | 126         |
| 74HCT377-Q100   | 114         | 74HCT594-Q100  | 120         | 74LV393       | 154          | 74LVC16374A       | 153         | 74LVC1G79        | 153         |
| 74HCT390        | 154         | 74HCT595       | 149         | 74LV393-Q100  | 111          | 74LVC16374A-Q100  | 115         | 74LVC1G79-Q100   | 126         |
| 74HCT393        | 154         | 74HCT595-Q100  | 120         | 74LV4020      | 154          | 74LVC1G00         | 159         | 74LVC1G80        | 153         |
| 74HCT393-Q100   | 111         | 74HCT597       | 149         | 74LV4051      | 145          | 74LVC1G00-Q100    | 128         | 74LVC1G80-Q100   | 126         |
| 74HCT3G04       | 134         | 74HCT597-Q100  | 120         | 74LV4052      | 145          | 74LVC1G02         | 160         | 74LVC1G86        | 158         |
| 74HCT3G04-Q100  | 125         | 74HCT6323      | 154         | 74LV4052-Q100 | 108          | 74LVC1G02-Q100    | 128         | 74LVC1G86-Q100   | 128         |
| 74HCT3G06       | 134         | 74HCT688       | 162         | 74LV4053      | 145          | 74LVC1G04         | 135         | 74LVC1G86-Q100   | 128         |
| 74HCT3G07       | 135         | 74HCT74        | 153         | 74LV4053-Q100 | 108          | 74LVC1G04-Q100    | 125         | 74LVC1G97        | 140, 157    |
| 74HCT3G07-Q100  | 125         | 74HCT74-Q100   | 114         | 74LV4060      | 154          | 74LVC1G06         | 135         | 74LVC1G98        | 140, 157    |
| 74HCT3G14       | 135, 140    | 74HCT7540      | 135, 140    | 74LV4060-Q100 | 121          | 74LVC1G06-Q100    | 125         | 74LVC1G99        | 140, 157    |
| 74HCT3G14-Q100  | 129         | 74HCT7541      | 135, 140    | 74LV4066      | 145          | 74LVC1G07         | 135         | 74LVC1GU04       | 136         |
| 74HCT3G16       | 135         | 74HCT7541-Q100 | 119         | 74LV4094      | 149          | 74LVC1G07-Q100    | 125         | 74LVC1GU04-Q100  | 125         |
| 74HCT3G34       | 135         | 74HCT85        | 162         | 74LV540A      | 135          | 74LVC1G08         | 156         | 74LVC1GX04       | 157         |
| 74HCT3G34-Q100  | 125         | 74HCT86        | 158         | 74LV541A      | 135          | 74LVC1G08-Q100    | 128         | 74LVC1GX04-Q100  | 128         |
| 74HCT4002       | 160         | 74HCT86-Q100   | 116         | 74LV541AT     | 135          | 74LVC1G10         | 159         | 74LVC1T45        | 144         |
| 74HCT4017       | 154         | 74HCT9046A     | 155         | 74LV74        | 153          | 74LVC1G10-Q100    | 128         | 74LVC1T45-Q100   | 130         |
| 74HCT4017-Q100  | 111         | 74HCT9114      | 135, 140    | 74LV74-Q100   | 114          | 74LVC1G11         | 156         | 74LVC2244A       | 136         |
|                 |             |                |             |               |              | 74LVC1G11-Q100    | 128         | 74LVC2245A       | 141         |

# Index

| Type number     | Page Number | Type number       | Page Number | Type number     | Page Number | Type number    | Page Number | Type number | Page Number |
|-----------------|-------------|-------------------|-------------|-----------------|-------------|----------------|-------------|-------------|-------------|
| 74LVC240A       | 136         | 74LVC3G04-Q100    | 125         | 74LVT08         | 156         | 74VHCT245      | 142         | BAS70       | 42          |
| 74LVC244A       | 136         | 74LVC3G06         | 136         | 74LVT125        | 136         | 74VHCT32       | 161         | BAS70-04    | 42          |
| 74LVC244A-Q100  | 110         | 74LVC3G07         | 136         | 74LVT126        | 136         | 74VHCT32-Q100  | 117         | BAS70-04W   | 43          |
| 74LVC245A       | 141         | 74LVC3G07-Q100    | 125         | 74LVT14         | 136, 140    | 74VHCT541      | 137         | BAS70-05    | 42          |
| 74LVC245A-Q100  | 122         | 74LVC3G14         | 136, 140    | 74LVT162240A    | 136         | 74VHCT541-Q100 | 110         | BAS70-05W   | 43          |
| 74LVC257A       | 148         | 74LVC3G16         | 136         | 74LVT162244B    | 136         | 74VHCT595-Q100 | 121         | BAS70-06    | 42          |
| 74LVC273        | 153         | 74LVC3G17         | 136         | 74LVT162245B    | 142         | BAL74          | 38          | BAS70-06W   | 43          |
| 74LVC273-Q100   | 114         | 74LVC3G17-Q100    | 129         | 74LVT162373     | 151         | BAL99          | 38          | BAS70-07    | 42          |
| 74LVC2G00       | 159         | 74LVC3G34         | 136, 140    | 74LVT162374     | 153         | BAS101         | 39          | BAS70H      | 43          |
| 74LVC2G00-Q100  | 128         | 74LVC3G34-Q100    | 125         | 74LVT16240A     | 136         | BAS101S        | 39          | BAS70W      | 43          |
| 74LVC2G02       | 160         | 74LVC3GU04        | 136         | 74LVT16244B     | 137         | BAS116         | 40          | BAS716      | 40          |
| 74LVC2G02-Q100  | 128         | 74LVC4066         | 145         | 74LVT16245B     | 142         | BAS116GW       | 40          | BAS85       | 42          |
| 74LVC2G04       | 136         | 74LVC4066-Q100    | 108         | 74LVT16373A     | 151         | BAS116H        | 40          | BAS86       | 42          |
| 74LVC2G04-Q100  | 125         | 74LVC4245         | 144         | 74LVT16374A     | 153         | BAS116L        | 40          | BAT120A     | 48          |
| 74LVC2G06       | 136         | 74LVC4245A        | 144         | 74LVT16543A     | 142         | BAS116QA       | 40          | BAT120C     | 48          |
| 74LVC2G06-Q100  | 125         | 74LVC4245A-Q100   | 118         | 74LVT2241       | 137         | BAS16          | 38          | BAT120S     | 48          |
| 74LVC2G07       | 136         | 74LVC4T3144-Q100  | 118         | 74LVT2244       | 137         | BAS16GW        | 38          | BAT160A     | 48          |
| 74LVC2G07-Q100  | 125         | 74LVC541A         | 136         | 74LVT2245       | 142         | BAS16H         | 38          | BAT160C     | 48          |
| 74LVC2G08       | 156         | 74LVC541A-Q100    | 110         | 74LVT240        | 137         | BAS16J         | 38          | BAT160S     | 48          |
| 74LVC2G08-Q100  | 128         | 74LVC573A         | 150         | 74LVT241        | 137         | BAS16L         | 38          | BAT165A     | 47          |
| 74LVC2G125      | 136         | 74LVC573A-Q100    | 115         | 74LVT244A       | 137         | BAS16LD        | 38          | BAT17       | 43          |
| 74LVC2G125-Q100 | 125         | 74LVC574A         | 153         | 74LVT244A-Q100  | 110         | BAS16QA        | 38          | BAT46GW     | 42          |
| 74LVC2G126      | 136         | 74LVC594A-Q100    | 121         | 74LVT244B       | 137         | BAS16VY        | 38          | BAT46WH     | 43          |
| 74LVC2G126-Q100 | 125         | 74LVC74A          | 114         | 74LVT245        | 142         | BAS16W         | 38          | BAT54       | 43          |
| 74LVC2G14       | 136, 140    | 74LVC74A-Q100     | 114         | 74LVT245B       | 142         | BAS20          | 39          | BAT54A      | 42          |
| 74LVC2G14-Q100  | 129         | 74LVC823A         | 153         | 74LVT573        | 151         | BAS21          | 39          | BAT54AW     | 43          |
| 74LVC2G16       | 136         | 74LVC823A-Q100    | 115         | 74LVT640        | 142         | BAS21AVD       | 39          | BAT54C      | 42          |
| 74LVC2G17       | 136, 140    | 74LVC827A         | 136         | 74LVTH125       | 137         | BAS21AW        | 39          | BAT54CW     | 43          |
| 74LVC2G17-Q100  | 129         | 74LVC86           | 158         | 74LVTH16244B    | 137         | BAS21GW        | 39          | BAT54GW     | 42          |
| 74LVC2G240      | 136         | 74LVC8T245        | 144         | 74LVTH16245B    | 142         | BAS21H         | 39          | BAT54H      | 43          |
| 74LVC2G240-Q100 | 125         | 74LVC8T245-Q100   | 118         | 74LVTH16374A    | 153         | BAS21J         | 39          | BAT54S      | 42          |
| 74LVC2G241      | 136         | 74LVC8T595        | 144, 149    | 74LVTH2245      | 142         | BAS21PG        | 39          | BAT54SW     | 43          |
| 74LVC2G241-Q100 | 125         | 74LVCH162244A     | 138         | 74LVTH244A      | 137         | BAS21SW        | 39          | BAT54W      | 43          |
| 74LVC2G3157     | 145         | 74LVCH162245A     | 141         | 74LVTH244A-Q100 | 110         | BAS21VD        | 39          | BAT720      | 47          |
| 74LVC2G32       | 161         | 74LVCH162373A     | 150         | 74LVTH244B      | 137         | BAS21W         | 39          | BAT721      | 42          |
| 74LVC2G32-Q100  | 128         | 74LVCH162374A     | 153         | 74LVTN16244B    | 137         | BAS28          | 38          | BAT721A     | 42          |
| 74LVC2G34       | 136         | 74LVCH16244A      | 153         | 74LVTN16245B    | 142         | BAS29          | 40          | BAT721C     | 42          |
| 74LVC2G34-Q100  | 128         | 74LVCH16244A-Q100 | 110         | 74VHC02         | 160         | BAS31          | 40          | BAT721S     | 42          |
| 74LVC2G38       | 159         | 74LVCH16245A      | 141         | 74VHC02-Q100    | 116         | BAS316         | 38          | BAT74       | 42          |
| 74LVC2G53       | 145         | 74LVCH16373A      | 150         | 74VHC08         | 156         | BAS321         | 39          | BAT754      | 42          |
| 74LVC2G66       | 145         | 74LVCH16373A-Q100 | 117         | 74VHC125        | 137         | BAS321J        | 39          | BAT754A     | 42          |
| 74LVC2G66-Q100  | 123         | 74LVCH16374A      | 153         | 74VHC126        | 137         | BAS32L         | 38          | BAT754C     | 42          |
| 74LVC2G74       | 153         | 74LVCH16374A-Q100 | 115         | 74VHC126-Q100   | 110         | BAS35          | 40          | BAT754S     | 42          |
| 74LVC2G74-Q100  | 126         | 74LVCH16541A      | 136         | 74VHC14         | 137, 140    | BAS40          | 42          | BAT760      | 47          |
| 74LVC2G86       | 158         | 74LVCH1T45        | 144         | 74VHC244        | 137         | BAS40-04       | 42          | BAT85       | 42          |
| 74LVC2G86-Q100  | 128         | 74LVCH1T45-Q100   | 130         | 74VHC245        | 142         | BAS40-04W      | 43          | BAT854AW    | 43          |
| 74LVC2GU04      | 136         | 74LVCH244A        | 136         | 74VHC32         | 161         | BAS40-05       | 42          | BAT854CW    | 43          |
| 74LVC2GU04-Q100 | 125         | 74LVCH244A-Q100   | 110         | 74VHC32-Q100    | 117         | BAS40-05W      | 43          | BAT854SW    | 43          |
| 74LVC2T45       | 144         | 74LVCH245A        | 141         | 74VHC541        | 137         | BAS40-06       | 42          | BAT854W     | 43          |
| 74LVC2T45-Q100  | 130         | 74LVCH245A-Q100   | 122         | 74VHC541-Q100   | 110         | BAS40-06W      | 43          | BAT86       | 42          |
| 74LVC30A        | 159         | 74LVCH2T45        | 144         | 74VHC595-Q100   | 121         | BAS40-07       | 42          | BAV102      | 39          |
| 74LVC32245A     | 141         | 74LVCH2T45-Q100   | 130         | 74VHCT02        | 160         | BAS40H         | 43          | BAV103      | 39          |
| 74LVC32A        | 161         | 74LVCH8T245       | 144         | 74VHCT02-Q100   | 116         | BAS40W         | 43          | BAV170      | 40          |
| 74LVC32A-Q100   | 116         | 74LVCH8T245-Q100  | 118         | 74VHCT08        | 156         | BAS416         | 40          | BAV170M     | 40          |
| 74LVC373A       | 150         | 74LVCU04A         | 136         | 74VHCT08-Q100   | 117         | BAS45A         | 40          | BAV170QA    | 40          |
| 74LVC373A-Q100  | 117         | 74LVCU04A-Q100    | 110         | 74VHCT125       | 137         | BAS45AL        | 40          | BAV199      | 40          |
| 74LVC374A       | 153         | 74LVCV2G66        | 145         | 74VHCT126       | 137         | BAS516         | 38          | BAV199W     | 40          |
| 74LVC374A-Q100  | 114         | 74LVT02           | 160         | 74VHCT126-Q100  | 110         | BAS521         | 39          | BAV21QA     | 8, 39       |
| 74LVC377        | 153         | 74LVT04           | 136         | 74VHCT14        | 137, 140    | BAS521B        | 8, 39       | BAV23       | 39          |
| 74LVC3G04       | 136         | 74LVT04-Q100      | 110         | 74VHCT244       | 137         | BAS56          | 40          | BAV23A      | 39          |

| Type number | Page Number | Type number | Page Number | Type number | Page Number | Type number | Page Number | Type number | Page Number |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| BAV23C      | 39          | BC69-25PA   | 18          | BC847BPN    | 15          | BC860B      | 20          | BCV61C      | 21          |
| BAV23QA     | 39          | BC69PA      | 18          | BC847BQA    | 14          | BC860BW     | 20          | BCV62       | 20          |
| BAV23S      | 39          | BC69PAS     | 18          | BC847BS     | 15          | BC860C      | 20          | BCV62A      | 20          |
| BAV70       | 38          | BC807       | 14          | BC847BW     | 14          | BC860CW     | 20          | BCV62B      | 20          |
| BAV70M      | 38          | BC807-16    | 14          | BC847CM     | 14          | BC868       | 18          | BCV62C      | 20          |
| BAV70QA     | 38          | BC807-16H   | 17          | BC847CMB    | 14          | BC868-25    | 18          | BCV63       | 20          |
| BAV70S      | 38          | BC807-16W   | 14          | BC847CQA    | 14          | BC869       | 18          | BCV63B      | 20          |
| BAV70SRA    | 38          | BC807-25    | 14          | BC847CW     | 14          | BC869-16    | 18          | BCV64B      | 20          |
| BAV70W      | 38          | BC807-25H   | 17          | BC847DS     | 15          | BC869-25    | 18          | BCV65       | 22          |
| BAV74       | 38          | BC807-25QA  | 14          | BC847QAPN   | 15          | BCM53DS     | 21          | BCV71       | 14          |
| BAV756S     | 38          | BC807-25W   | 14          | BC847QAS    | 15          | BCM56DS     | 21          | BCV72       | 14          |
| BAV99       | 38          | BC807-40    | 14          | BC847RA     | 15          | BCM61B      | 21          | BCW29       | 14          |
| BAV99QA     | 38          | BC807-40H   | 17          | BC847RAPN   | 15          | BCM62B      | 21          | BCW30       | 14          |
| BAV99S      | 38          | BC807-40QA  | 14          | BC847W      | 15          | BCM846BS    | 21          | BCW31       | 14          |
| BAV99W      | 38          | BC807-40W   | 14          | BC848B      | 14          | BCM847BS    | 21          | BCW32       | 14          |
| BAW101      | 39          | BC807DS     | 15          | BC848W      | 14          | BCM847DS    | 21          | BCW33       | 14          |
| BAW101S     | 39          | BC807K-16   | 15          | BC849B      | 20          | BCM847QAS   | 21          | BCW60B      | 14          |
| BAW156      | 40          | BC807K-25   | 15          | BC849BW     | 20          | BCM856DS    | 21          | BCW60C      | 14          |
| BAW56       | 38          | BC807K-40   | 15          | BC849C      | 20          | BCM857DS    | 21          | BCW60D      | 14          |
| BAW56M      | 38          | BC807RA     | 15          | BC849CW     | 20          | BCM857QAS   | 21          | BCW61B      | 14          |
| BAW56QA     | 38          | BC807W      | 14          | BC850B      | 20          | BCP51       | 18          | BCW61C      | 14          |
| BAW56S      | 38          | BC816       | 14          | BC850BW     | 20          | BCP51-10    | 18          | BCW61D      | 14          |
| BAW56SRA    | 38          | BC816W      | 14          | BC850C      | 20          | BCP51-16    | 18          | BCW66F      | 14          |
| BAW56W      | 38          | BC817       | 14          | BC850CW     | 20          | BCP52       | 18          | BCW66G      | 14          |
| BC51-10PA   | 18          | BC817-25QA  | 14          | BC856       | 14          | BCP52-10    | 18          | BCW66H      | 14          |
| BC51-10PAS  | 18          | BC817-40QA  | 14          | BC856A      | 14          | BCP52-16    | 18          | BCW68F      | 14          |
| BC51-16PA   | 18          | BC817DPN    | 15          | BC856AW     | 14          | BCP53       | 17          | BCW68G      | 14          |
| BC51PA      | 18          | BC817DS     | 15          | BC856B      | 14          | BCP53-10    | 18          | BCW68H      | 14          |
| BC51PAS     | 18          | BC817K-16   | 16          | BC856BM     | 14          | BCP53-10H   | 17          | BCW69       | 14          |
| BC52-10PA   | 18          | BC817K-16H  | 16          | BC856BMB    | 14          | BCP53-16    | 18          | BCW70       | 14          |
| BC52-10PAS  | 18          | BC817K-25   | 15          | BC856BS     | 15          | BCP53-16H   | 17          | BCW71       | 14          |
| BC52-16PA   | 18          | BC817K-25H  | 16          | BC856BW     | 14          | BCP53H      | 17          | BCW72       | 14          |
| BC52PA      | 18          | BC817K-40   | 15          | BC856S      | 15          | BCP54       | 18          | BCW89       | 14          |
| BC52PAS     | 18          | BC817K-40H  | 16          | BC856W      | 14          | BCP54-10    | 18          | BCX17       | 14          |
| BC53-10PA   | 18          | BC817RA     | 15          | BC857       | 14          | BCP54-16    | 18          | BCX18       | 14          |
| BC53-10PAS  | 18          | BC817RAPN   | 15          | BC857A      | 14          | BCP55       | 18          | BCX19       | 14          |
| BC53-16PA   | 18          | BC817W      | 14          | BC857AM     | 14          | BCP55-10    | 18          | BCX51       | 18          |
| BC53PA      | 18          | BC825       | 14          | BC857AMB    | 14          | BCP55-16    | 18          | BCX51-10    | 18          |
| BC53PAS     | 18          | BC825W      | 14          | BC857AQA    | 14          | BCP56       | 18          | BCX51-16    | 18          |
| BC54-10PA   | 18          | BC840       | 14          | BC857AW     | 14          | BCP56-10    | 18          | BCX52       | 18          |
| BC54-10PAS  | 18          | BC840W      | 14          | BC857B      | 14          | BCP56-10H   | 17          | BCX52-10    | 18          |
| BC54-16PA   | 18          | BC846       | 14          | BC857BM     | 14          | BCP56-16    | 18          | BCX52-16    | 18          |
| BC54PA      | 18          | BC846A      | 14          | BC857BMB    | 14          | BCP56-16H   | 17          | BCX53       | 18          |
| BC54PAS     | 18          | BC846AW     | 14          | BC857BQA    | 14          | BCP56H      | 17          | BCX53-10    | 18          |
| BC55-10PA   | 18          | BC846B      | 14          | BC857BS     | 15          | BCP68       | 18          | BCX53-16    | 18          |
| BC55-10PAS  | 18          | BC846BM     | 14          | BC857BW     | 14          | BCP68-25    | 18          | BCX54       | 18          |
| BC55-16PA   | 18          | BC846BMB    | 14          | BC857C      | 14          | BCP69       | 18          | BCX54-10    | 18          |
| BC55PA      | 18          | BC846BPN    | 15          | BC857CM     | 14          | BCP69-16    | 18          | BCX54-16    | 18          |
| BC55PAS     | 18          | BC846BS     | 15          | BC857CMB    | 14          | BCP69-25    | 18          | BCX55       | 18          |
| BC56-10PA   | 18          | BC846DS     | 15          | BC857CQA    | 14          | BCV26       | 20          | BCX55-10    | 18          |
| BC56-10PAS  | 18          | BC846S      | 15          | BC857CW     | 14          | BCV27       | 20          | BCX55-16    | 18          |
| BC56-16PA   | 18          | BC846W      | 14          | BC857QAS    | 15          | BCV28       | 20          | BCX56       | 18          |
| BC569-16PAS | 18          | BC847       | 14          | BC857RA     | 15          | BCV29       | 20          | BCX56-10    | 18          |
| BC56PA      | 18          | BC847A      | 14          | BC857W      | 14          | BCV46       | 20          | BCX56-16    | 18          |
| BC56PAS     | 18          | BC847AM     | 14          | BC858B      | 14          | BCV47       | 20          | BCX70G      | 14          |
| BC68-25PA   | 18          | BC847AMB    | 14          | BC858W      | 14          | BCV48       | 20          | BCX70H      | 14          |
| BC68-25PAS  | 18          | BC847AQA    | 14          | BC859B      | 20          | BCV49       | 20          | BCX70J      | 14          |
| BC68PA      | 18          | BC847AW     | 14          | BC859BW     | 20          | BCV61       | 20          | BCX70K      | 14          |
| BC68PAS     | 18          | BC847BM     | 14          | BC859C      | 20          | BCV61A      | 21          | BCX71H      | 14          |
| BC69-16PA   | 18          | BC847BMB    | 14          | BC859CW     | 20          | BCV61B      | 21          | BCX71J      | 14          |

# Index

| Type number | Page Number | Type number     | Page Number | Type number   | Page Number | Type number   | Page Number | Type number      | Page Number |
|-------------|-------------|-----------------|-------------|---------------|-------------|---------------|-------------|------------------|-------------|
| BCX71K      | 14          | BST62           | 20          | BUK7E1R8-40E  | 75          | BUK7Y10-30B   | 74          | BUK965R8-100E    | 80          |
| BF550       | 22          | BUK6D120-40E    | 83          | BUK7E1R9-40E  | 75          | BUK7Y113-100E | 80          | BUK9660-100A     | 80          |
| BF570       | 22          | BUK6D120-60P    | 83          | BUK7E2R3-40E  | 75          | BUK7Y12-100E  | 80          | BUK966R5-60E     | 77          |
| BF620       | 22          | BUK6D125-60E    | 83          | BUK7E2R6-60E  | 77          | BUK7Y12-40E   | 75          | BUK9675-100A     | 80          |
| BF621       | 18          | BUK6D210-60E    | 83          | BUK7E3R1-40E  | 75          | BUK7Y14-80E   | 79          | BUK9675-55A      | 77          |
| BF622       | 18          | BUK6D23-40E     | 83          | BUK7E3R5-60E  | 77          | BUK7Y15-100E  | 80          | BUK969R0-60E     | 77          |
| BF623       | 18          | BUK6D230-80E    | 83          | BUK7E4R6-60E  | 77          | BUK7Y15-60E   | 78          | BUK969R3-100E    | 80          |
| BF720       | 18          | BUK6D335-100E   | 83          | BUK7E5R2-100E | 80          | BUK7Y153-100E | 80          | BUK98150-55A/CU  | 78          |
| BF722       | 18          | BUK6D43-40P     | 83          | BUK7E8R3-40E  | 75          | BUK7Y19-100E  | 80          | BUK98180-100A/CU | 81          |
| BF723       | 18          | BUK6D56-60E     | 83          | BUK7J1R0-40H  | 75          | BUK7Y1R4-40H  | 75          | BUK9832-55A/CU   | 78          |
| BF820       | 18          | BUK6D88-60E     | 83          | BUK7J1R4-40H  | 75          | BUK7Y1R7-40H  | 75          | BUK9875-100A/CU  | 81          |
| BF820W      | 18          | BUK6D98-80E     | 83          | BUK7K12-60E   | 78          | BUK7Y20-30B   | 74          | BUK9880-55A/CU   | 78          |
| BF821       | 18          | BUK6Y12-30P     | 81          | BUK7K13-60E   | 78          | BUK7Y21-40E   | 75          | BUK9D23-40E      | 83          |
| BF822       | 18          | BUK6Y15-40P     | 81          | BUK7K134-100E | 81          | BUK7Y22-100E  | 80          | BUK9J0R9-40H     | 75          |
| BF823       | 18          | BUK6Y20-30P     | 81          | BUK7K15-80E   | 79          | BUK7Y25-60E   | 78          | BUK9K12-60E      | 78          |
| BF824       | 22          | BUK6Y25-40P     | 81          | BUK7K17-60E   | 78          | BUK7Y25-80E   | 79          | BUK9K13-60E      | 78          |
| BF824W      | 22          | BUK6Y32-60P     | 81          | BUK7K17-80E   | 79          | BUK7Y29-40E   | 75          | BUK9K134-100E    | 81          |
| BF840       | 22          | BUK6Y57-60P     | 81          | BUK7K18-40E   | 76          | BUK7Y2R0-40H  | 75          | BUK9K17-60E      | 78          |
| BFS19       | 22          | BUK751R8-40E    | 75          | BUK7K23-80E   | 79          | BUK7Y2R5-40H  | 75          | BUK9K18-40E      | 76          |
| BFS20       | 22          | BUK752R3-40E    | 75          | BUK7K25-40E   | 76          | BUK7Y38-100E  | 80          | BUK9K20-80E      | 79          |
| BFS20W      | 22          | BUK753R1-40E    | 75          | BUK7K29-100E  | 81          | BUK7Y3R0-40H  | 75          | BUK9K22-80E      | 79          |
| BSH111BK    | 99          | BUK753R8-80E    | 79          | BUK7K32-100E  | 81          | BUK7Y3R5-40E  | 75          | BUK9K25-40E      | 76          |
| BSH205G2    | 83, 101     | BUK755R4-100E   | 80          | BUK7K35-60E   | 78          | BUK7Y3R5-40H  | 75          | BUK9K29-100E     | 81          |
| BSN20BK     | 99          | BUK758R3-40E    | 75          | BUK7K45-100E  | 81          | BUK7Y41-80E   | 79          | BUK9K30-80E      | 79          |
| BSP19       | 18          | BUK7610-55AL    | 77          | BUK7K52-60E   | 78          | BUK7Y43-60E   | 78          | BUK9K32-100E     | 81          |
| BSP31       | 18          | BUK7613-100E    | 80          | BUK7K5R1-30E  | 74          | BUK7Y4R4-40E  | 75          | BUK9K35-60E      | 78          |
| BSP32       | 18          | BUK7613-60E     | 77          | BUK7K5R6-30E  | 74          | BUK7Y4R8-60E  | 78          | BUK9K45-100E     | 81          |
| BSP41       | 18          | BUK7613-75B     | 79          | BUK7K6R2-40E  | 76          | BUK7Y59-60E   | 78          | BUK9K52-60E      | 78          |
| BSP43       | 18          | BUK761R6-40E    | 75          | BUK7K6R8-40E  | 76          | BUK7Y65-100E  | 80          | BUK9K5R1-30E     | 74          |
| BSP50       | 20          | BUK761R7-40E    | 75          | BUK7K89-100E  | 81          | BUK7Y6R0-60E  | 78          | BUK9K5R6-30E     | 74          |
| BSP51       | 20          | BUK7620-55A     | 77          | BUK7K8R7-40E  | 76          | BUK7Y72-80E   | 79          | BUK9K6R2-40E     | 76          |
| BSP52       | 20          | BUK7623-75A     | 79          | BUK7M10-40E   | 76          | BUK7Y7R2-60E  | 78          | BUK9K6R8-40E     | 76          |
| BSP60       | 20          | BUK762R0-40E    | 75          | BUK7M11-40H   | 76          | BUK7Y7R6-40E  | 75          | BUK9K89-100E     | 81          |
| BSP61       | 20          | BUK762R4-60E    | 77          | BUK7M12-40E   | 76          | BUK7Y7R8-80E  | 79          | BUK9K8R7-40E     | 76          |
| BSP62       | 20          | BUK762R6-40E    | 75          | BUK7M12-60E   | 78          | BUK7Y8R7-60E  | 78          | BUK9M10-30E      | 74          |
| BSR14       | 16          | BUK762R6-60E    | 77          | BUK7M15-40H   | 76          | BUK7Y98-80E   | 79          | BUK9M11-40E      | 76          |
| BSR16       | 16          | BUK762R7-30B    | 74          | BUK7M15-60E   | 78          | BUK7Y9R9-80E  | 79          | BUK9M11-40H      | 76          |
| BSR19A      | 18          | BUK762R9-40E    | 75          | BUK7M17-80E   | 79          | BUK953R5-60E  | 77          | BUK9M12-60E      | 78          |
| BSR30       | 18          | BUK7631-100E    | 80          | BUK7M19-60E   | 78          | BUK954R8-60E  | 77          | BUK9M120-100E    | 81          |
| BSR33       | 18          | BUK7635-55A     | 77          | BUK7M20-40H   | 76          | BUK9611-80E   | 79          | BUK9M14-40E      | 76          |
| BSR41       | 18          | BUK763R1-60E    | 77          | BUK7M21-40E   | 76          | BUK9614-60E   | 77          | BUK9M15-40H      | 76          |
| BSR43       | 18          | BUK763R4-30B    | 74          | BUK7M22-80E   | 79          | BUK9615-100E  | 80          | BUK9M15-60E      | 78          |
| BSS138AKA   | 85          | BUK763R8-80E    | 79          | BUK7M27-80E   | 79          | BUK9616-75B   | 79          | BUK9M156-100E    | 81          |
| BSS138BK    | 85          | BUK763R9-60E    | 77          | BUK7M33-60E   | 78          | BUK96180-100A | 80          | BUK9M17-30E      | 74          |
| BSS138BKs   | 85          | BUK764R0-40E    | 75          | BUK7M3R3-40H  | 76          | BUK961R6-40E  | 75          | BUK9M19-60E      | 78          |
| BSS138BKw   | 85          | BUK764R2-80E    | 79          | BUK7M42-60E   | 78          | BUK9620-55A   | 77          | BUK9M20-40H      | 76          |
| BSS138P     | 85          | BUK764R4-60E    | 77          | BUK7M45-40E   | 76          | BUK9624-55A   | 77          | BUK9M23-80E      | 79          |
| BSS138PS    | 85          | BUK765R0-100E   | 80          | BUK7M4R3-40H  | 76          | BUK9628-55A   | 77          | BUK9M24-40E      | 76          |
| BSS138PW    | 85          | BUK765R3-40E    | 75          | BUK7M5R0-40H  | 76          | BUK962R5-60E  | 77          | BUK9M24-60E      | 78          |
| BSS63       | 14, 18      | BUK7660-100A    | 80          | BUK7M67-60E   | 78          | BUK962R6-40E  | 75          | BUK9M28-80E      | 79          |
| BSS84AK     | 85, 94, 101 | BUK766R0-60E    | 77          | BUK7M6R0-40H  | 76          | BUK962R8-60E  | 77          | BUK9M34-100E     | 81          |
| BSS84AKM    | 85, 94, 101 | BUK7675-100A    | 80          | BUK7M6R3-40E  | 76          | BUK9635-55A   | 77          | BUK9M35-80E      | 79          |
| BSS84AKMB   | 94, 101     | BUK7675-55A     | 77          | BUK7M6R7-40H  | 76          | BUK9637-100E  | 80          | BUK9M3R3-40H     | 76          |
| BSS84AKS    | 85, 103     | BUK768R1-100E   | 80          | BUK7M8R0-40E  | 76          | BUK963R1-40E  | 75          | BUK9M42-60E      | 78          |
| BSS84AKW    | 85, 101     | BUK768R1-40E    | 75          | BUK7M8R5-40H  | 76          | BUK963R3-60E  | 77          | BUK9M43-100E     | 81          |
| BST39       | 18          | BUK768R3-60E    | 77          | BUK7M9R5-40H  | 76          | BUK964R1-40E  | 75          | BUK9M4R3-40H     | 76          |
| BST50       | 20          | BUK769R6-80E    | 79          | BUK7M9R9-60E  | 78          | BUK964R2-60E  | 77          | BUK9M52-40E      | 76          |
| BST51       | 20          | BUK78150-55A/CU | 78          | BUK7S0R7-40H  | 75          | BUK964R2-80E  | 79          | BUK9M53-60E      | 78          |
| BST52       | 20          | BUK7880-55A/CU  | 78          | BUK7S0R9-40H  | 75          | BUK964R7-80E  | 79          | BUK9M5R0-40H     | 76          |
| BST60       | 20          | BUK7D25-40E     | 83          | BUK7S1R0-40H  | 75          | BUK964R8-60E  | 77          | BUK9M5R2-30E     | 74          |
| BST61       | 20          | BUK7E13-60E     | 77          | BUK7Y07-30B   | 74          | BUK965R4-40E  | 75          | BUK9M6R0-40H     | 76          |

| Type number   | Page Number | Type number    | Page Number | Type number      | Page Number | Type number     | Page Number | Type number | Page Number |
|---------------|-------------|----------------|-------------|------------------|-------------|-----------------|-------------|-------------|-------------|
| BUK9M6R6-30E  | 74          | BZX79 series   | 36          | HEF4052B-Q100    | 108         | MMBZ15VAL       | 67          | NZH series  | 36          |
| BUK9M6R7-40H  | 76          | BZX84 series   | 36          | HEF4053B         | 145         | MMBZ15VDL       | 67          | NZX series  | 36, 37      |
| BUK9M7R2-40E  | 76          | BZX84J series  | 36          | HEF4053B-Q100    | 108         | MMBZ16VAL       | 67          | PBHV2160Z   | 29          |
| BUK9M8S-60E   | 78          | BZX884 series  | 36          | HEF4060B         | 155         | MMBZ16VTAL      | 67          | PBHV3160Z   | 29          |
| BUK9M8R5-40H  | 76          | CBT16210       | 146         | HEF4060B-Q100    | 111         | MMBZ18VAL       | 67          | PBHV8115T   | 29          |
| BUK9M9R1-40E  | 76          | CBT3125        | 146         | HEF4066B         | 145         | MMBZ18VCL       | 67          | PBHV8115TLH | 29          |
| BUK9M9R5-40H  | 76          | CBT3244A       | 146         | HEF4066B-Q100    | 108         | MMBZ20VAL       | 67          | PBHV8115X   | 29          |
| BUK9Y07-30B   | 74          | CBT3245A       | 146         | HEF4067B         | 145         | MMBZ20VCL       | 67          | PBHV8115Z   | 29          |
| BUK9Y107-80E  | 79          | CBT3245A-Q100  | 112         | HEF4067B-Q100    | 108         | MMBZ27VAL       | 67          | PBHV8118T   | 29          |
| BUK9Y11-30B   | 74          | CBT3251        | 146         | HEF4069UB        | 137         | MMBZ27VCL       | 67          | PBHV8140Z   | 29          |
| BUK9Y11-80E   | 79          | CBT3253        | 146         | HEF4069UB-Q100   | 110         | MMBZ33VAL       | 67          | PBHV8215Z   | 29          |
| BUK9Y113-100E | 80          | CBT3253A       | 146         | HEF4070          | 158         | MMBZ33VCL       | 67          | PBHV8515QA  | 29          |
| BUK9Y12-100E  | 80          | CBT3257A       | 146         | HEF4070B-Q100    | 117         | MMBZ5V6AL       | 67          | PBHV8540T   | 29          |
| BUK9Y12-40E   | 75          | CBT3306        | 146         | HEF4071          | 161         | MMBZ6V2AL       | 67          | PBHV8540X   | 29          |
| BUK9Y14-80E   | 79          | CBT3306-Q100   | 123         | HEF4073B         | 156         | MMBZ6V8AL       | 67          | PBHV8540Z   | 29          |
| BUK9Y15-100E  | 80          | CBT3861        | 146         | HEF4077          | 158         | MMBZ9V1AL       | 67          | PBHV8560Z   | 29          |
| BUK9Y15-60E   | 78          | CBTD16210      | 146         | HEF4081B         | 156         | NCR401T         | 19          | PBHV9040T   | 29          |
| BUK9Y153-100E | 80          | CBTD3306       | 146         | HEF4081B-Q100    | 117         | NCR401U         | 19          | PBHV9040X   | 29          |
| BUK9Y19-100E  | 80          | CBTD3384       | 146         | HEF4082B         | 156         | NCR402T         | 19          | PBHV9040Z   | 29          |
| BUK9Y1R3-40H  | 75          | CBTD3861       | 146         | HEF4082B-Q100    | 117         | NCR402U         | 19          | PBHV9050T   | 29          |
| BUK9Y1R6-40H  | 75          | HEF4000        | 163         | HEF4093B         | 140, 159    | NCR405U         | 19          | PBHV9050Z   | 29          |
| BUK9Y1R9-40H  | 75          | HEF4001B       | 160         | HEF4094B-Q100    | 121         | NMB2227A        | 16          | PBHV9115T   | 29          |
| BUK9Y21-40E   | 75          | HEF4001B-Q100  | 117         | HEF4104B         | 144         | NPIC6C4894      | 149         | PBHV9115TLH | 29          |
| BUK9Y22-100E  | 80          | HEF4002B       | 160         | HEF4104B-Q100    | 118         | NPIC6C4894-Q100 | 121         | PBHV9115X   | 29          |
| BUK9Y22-30B   | 74          | HEF4007UB      | 157         | HEF4518B         | 155         | NPIC6C595       | 149         | PBHV9115Z   | 29          |
| BUK9Y25-60E   | 78          | HEF40098B      | 137         | HEF4520B         | 155         | NPIC6C595-Q100  | 121         | PBHV9215Z   | 29          |
| BUK9Y25-80E   | 79          | HEF40106B      | 140         | HEF4520B-Q100    | 111         | NPIC6C596       | 149         | PBHV9414Z   | 29          |
| BUK9Y29-40E   | 75          | HEF40106B-Q100 | 119         | HEF4521B         | 155         | NPIC6C596-Q100  | 121         | PBHV9515QA  | 29          |
| BUK9Y2R4-40H  | 75          | HEF4011B       | 159         | HEF4528B         | 155         | NPIC6C596A      | 149         | PBHV9540X   | 29          |
| BUK9Y2R8-40H  | 75          | HEF4011B-Q100  | 117         | HEF4528B-Q100    | 118         | NPIC6C596A-Q100 | 121         | PBHV9540Z   | 29          |
| BUK9Y38-100E  | 80          | HEF4013B       | 153         | HEF4538B         | 155         | NUP1301         | 53          | PBHV9560Z   | 29          |
| BUK9Y3R0-40E  | 75          | HEF4013B-Q100  | 115         | HEF4538B-Q100    | 118         | NUP1301QA       | 53          | PBLS1501Y   | 28          |
| BUK9Y3R5-40E  | 75          | HEF4014B-Q100  | 121         | HEF4541B         | 155         | NUP1301U        | 53          | PBLS1502Y   | 28          |
| BUK9Y41-80E   | 79          | HEF4016B       | 145         | HEF4541B-Q100    | 111         | NX138AK         | 99          | PBLS1503Y   | 28          |
| BUK9Y43-60E   | 78          | HEF40175B      | 153         | HEF4543B         | 147         | NX138AKS        | 103         | PBLS1504Y   | 28          |
| BUK9Y4R4-40E  | 75          | HEF4017B       | 155         | HEF4555B         | 147         | NX138BK         | 99          | PBLS2001D   | 28          |
| BUK9Y4R8-60E  | 78          | HEF4017B-Q100  | 111         | HEF4555B-Q100    | 112         | NX138BKS        | 103         | PBLS2002D   | 28          |
| BUK9Y59-60E   | 78          | HEF4020B       | 155         | HEF4794B         | 149         | NX138BKW        | 99          | PBLS2003D   | 28          |
| BUK9Y65-100E  | 80          | HEF4020B-Q100  | 111         | HEF4794B-Q100    | 121         | NX2301P         | 83, 101     | PBLS2004D   | 28          |
| BUK9Y6R0-60E  | 78          | HEF4021B-Q100  | 121         | HEF4894B         | 149         | NX3008CBKS      | 84, 102     | PBLS2021D   | 28          |
| BUK9Y72-80E   | 79          | HEF40244B      | 137         | HEF4894B-Q100    | 121         | NX3008NBK       | 85, 99      | PBLS2022D   | 28          |
| BUK9Y7R2-60E  | 78          | HEF4024B       | 155         | IP3319CX6        | 170         | NX3008NBKS      | 85, 103     | PBLS2023D   | 28          |
| BUK9Y7R6-40E  | 75          | HEF4027B       | 153         | IP4220CZ6        | 54, 64      | NX3008NBKW      | 85, 99      | PBLS2024D   | 28          |
| BUK9Y8R5-80E  | 79          | HEF4027B-Q100  | 115         | IP4251CZ16-8-TTL | 66          | NX3008PBK       | 85, 101     | PBLS4001D   | 28          |
| BUK9Y8R7-60E  | 78          | HEF4028B       | 147         | IP4252CZ16-8-TTL | 66          | NX3008PBKS      | 85, 103     | PBLS4001Y   | 28          |
| BZA408B       | 60          | HEF4030        | 158         | IP4252CZ8-4-TTL  | 66          | NX3008PBKW      | 85, 101     | PBLS4002D   | 28          |
| BZA420A       | 60          | HEF4030B-Q100  | 117         | IP4254CZ16-8-TTL | 66          | NX3020NAK       | 103         | PBLS4002Y   | 28          |
| BZA456A       | 60          | HEF40373B      | 151         | IP4254CZ8-4-TTL  | 66          | NX3020NAKS      | 103         | PBLS4003D   | 28          |
| BZAB56A       | 60          | HEF4040B       | 155         | IP4264CZ8-20-TTL | 66          | NX3020NAKW      | 99          | PBLS4003Y   | 28          |
| BZB100A       | 36          | HEF4040B-Q100  | 111         | IP4283CZ10-TBR   | 54, 63      | NX7002AK        | 99          | PBLS4004D   | 28          |
| BZB784 series | 36          | HEF4043B       | 151         | IP4292CZ10-TBR   | 54, 63      | NX7002AKS       | 103         | PBLS4004Y   | 28          |
| BZB84 series  | 36          | HEF4043B-Q100  | 117         | IP4294CZ10-TBR   | 54, 55, 63  | NX7002AKW       | 99          | PBLS4005D   | 28          |
| BZT52 series  | 36          | HEF4046B       | 155         | IP4786CZ32       | 66          | NX7002BK        | 99          | PBLS4005Y   | 28          |
| BZT52H series | 36          | HEF4047B       | 155         | IP4788CZ32       | 66          | NX7002BKH       | 11, 94      | PBLS6001D   | 28          |
| BZV49 series  | 36          | HEF4049B       | 137         | IP4856CX25/C     | 66          | NX7002BKM       | 94, 99      | PBLS6002D   | 28          |
| BZV55 series  | 36          | HEF4049B-Q100  | 110         | MMBT2222A        | 16          | NX7002BKMB      | 94, 99      | PBLS6003D   | 28          |
| BZV85 series  | 36          | HEF4050B       | 137         | MMBT3904         | 16          | NX7002BKS       | 103         | PBLS6004D   | 28          |
| BZV90 series  | 36          | HEF4050B-Q100  | 110         | MMBT3906         | 16          | NX7002BKW       | 99          | PBLS6005D   | 28          |
| BZX100A       | 36          | HEF4051B       | 145         | MMBZ10VAL        | 67          | NX7002BKXB      | 95, 103     | PBLS6021D   | 28          |
| BZX384 series | 36          | HEF4051B-Q100  | 108         | MMBZ12VAL        | 67          | NXP3875G        | 14          | PBLS6022D   | 28          |
| BZX585 series | 36          | HEF4052B       | 145         | MMBZ12VDL        | 67          | NXP3875Y        | 14          | PBLS6023D   | 28          |

# Index

| Type number | Page Number | Type number               | Page Number | Type number  | Page Number | Type number  | Page Number     | Type number | Page Number |
|-------------|-------------|---------------------------|-------------|--------------|-------------|--------------|-----------------|-------------|-------------|
| PBLS6024D   | 28          | PBSS4021SPN               | 27          | PBSS4350SS   | 27          | PBSS5540Z    | 25              | PDTA123ET   | 31          |
| PBRN113ET   | 29          | PBSS4032ND <sup>3)</sup>  | 23          | PBSS4350T    | 24          | PBSS5560PA   | 25              | PDTA123EU   | 31          |
| PBRN113ZT   | 29          | PBSS4032NT <sup>3)</sup>  | 24          | PBSS4350X    | 23          | PBSS5580PA   | 25              | PDTA123JM   | 31          |
| PBRN123ET   | 29          | PBSS4032NX <sup>3)</sup>  | 23          | PBSS4350Z    | 23          | PBSS5612PA   | 25              | PDTA123JMB  | 31          |
| PBRN123YT   | 29          | PBSS4032NZ <sup>3)</sup>  | 23          | PBSS4360PAS  | 23          | PBSS5620PA   | 25              | PDTA123JT   | 31          |
| PBRP113ET   | 29          | PBSS4032PD <sup>3)</sup>  | 25          | PBSS4360X    | 23          | PBSS5630PA   | 25              | PDTA123JU   | 31          |
| PBRP113ZT   | 29          | PBSS4032PT                | 26          | PBSS4360Z    | 23          | PBSS8110D    | 23              | PDTA123TM   | 31          |
| PBRP123ET   | 29          | PBSS4032PX <sup>3)</sup>  | 25          | PBSS4480X    | 23          | PBSS8110T    | 24              | PDTA123TMB  | 31          |
| PBRP123YT   | 29          | PBSS4032PZ <sup>3)</sup>  | 25          | PBSS4520X    | 23          | PBSS8110X    | 23              | PDTA123TT   | 31          |
| PBSM5240PF  | 30          | PBSS4032SN <sup>3)</sup>  | 27          | PBSS4540X    | 23          | PBSS8110Y    | 24              | PDTA123TU   | 31          |
| PBSM5240PFH | 30          | PBSS4032SP <sup>3)</sup>  | 27          | PBSS4540Z    | 23          | PBSS8110Z    | 23              | PDTA123XQA  | 31          |
| PBSS2515M   | 24          | PBSS4032SPN <sup>3)</sup> | 27          | PBSS4560PA   | 23          | PBSS8510PA   | 23              | PDTA123YM   | 31          |
| PBSS2515MB  | 24          | PBSS4041NT                | 24          | PBSS4580PA   | 23          | PBSS9110D    | 25              | PDTA123YMB  | 31          |
| PBSS2540M   | 24          | PBSS4041NX                | 23          | PBSS4612PA   | 23          | PBSS9110T    | 26              | PDTA123YT   | 31          |
| PBSS2540MB  | 24          | PBSS4041NZ                | 23          | PBSS4620PA   | 23          | PBSS9110X    | 25              | PDTA123YU   | 31          |
| PBSS301ND   | 23          | PBSS4041PT                | 26          | PBSS4630PA   | 23          | PBSS9110Y    | 26              | PDTA124EM   | 31          |
| PBSS301NX   | 23          | PBSS4041PX                | 25          | PBSS5112PAP  | 27          | PBSS9110Z    | 25              | PDTA124EMB  | 31          |
| PBSS301NZ   | 23          | PBSS4041PZ                | 25          | PBSS5120T    | 26          | PBSS9410PA   | 25              | PDTA124EQA  | 31          |
| PBSS301PD   | 25          | PBSS4041SN                | 27          | PBSS5130PAP  | 27          | PCMF1HDMI2S  | 65              | PDTA124ET   | 31          |
| PBSS301PX   | 25          | PBSS4041SP                | 27          | PBSS5130QA   | 26          | PCMF1USB3B/C | 55, 56, 61, 65  | PDTA124EU   | 31          |
| PBSS301PZ   | 25          | PBSS4041SPN               | 27          | PBSS5130T    | 26          | PCMF1USB3S   | 55, 56, 65, 170 | PDTA124TM   | 31          |
| PBSS302ND   | 23          | PBSS4112PAN               | 27          | PBSS5140T    | 26          | PCMF2HDMI2S  | 65              | PDTA124TMB  | 31          |
| PBSS302NX   | 23          | PBSS4112PANP              | 27          | PBSS5140U    | 26          | PCMF2USB3B/C | 56, 61, 65      | PDTA124TT   | 31          |
| PBSS302NZ   | 23          | PBSS4120T                 | 24          | PBSS5160DS   | 27          | PCMF2USB3S   | 56, 65, 170     | PDTA124TU   | 31          |
| PBSS302PD   | 25          | PBSS4130PAN               | 27          | PBSS5160PAP  | 27          | PCMF3HDMI2S  | 65              | PDTA124XM   | 31          |
| PBSS302PX   | 25          | PBSS4130PANP              | 27          | PBSS5160PAPS | 27          | PCMF3USB3B/C | 56, 61, 65      | PDTA124XMB  | 31          |
| PBSS302PZ   | 25          | PBSS4130QA                | 24          | PBSS5160QA   | 26          | PCMF3USB3S   | 56, 65, 170     | PDTA124XT   | 31          |
| PBSS303ND   | 23          | PBSS4130T                 | 24          | PBSS5160T    | 26          | PDI1284P11   | 137             | PDTA124XU   | 31          |
| PBSS303NX   | 23          | PBSS4140DPN               | 27          | PBSS5160U    | 26          | PDTA113EM    | 31              | PDTA143EM   | 31          |
| PBSS303NZ   | 24          | PBSS4140T                 | 24          | PBSS5220PAPS | 27          | PDTA113EMB   | 31              | PDTA143EMB  | 31          |
| PBSS303PD   | 25          | PBSS4160DPN               | 27          | PBSS5220T    | 26          | PDTA113ET    | 31              | PDTA143EQA  | 31          |
| PBSS303PX   | 25          | PBSS4160DS                | 27          | PBSS5230PAP  | 27          | PDTA113EU    | 31              | PDTA143ET   | 31          |
| PBSS303PZ   | 25          | PBSS4160PAN               | 27          | PBSS5230QA   | 26          | PDTA113ZM    | 31              | PDTA143EU   | 31          |
| PBSS304ND   | 23          | PBSS4160PANP              | 27          | PBSS5230T    | 26          | PDTA113ZM    | 31              | PDTA143TM   | 31          |
| PBSS304NX   | 23          | PBSS4160PANPS             | 27          | PBSS5240T    | 26          | PDTA113ZMB   | 31              | PDTA143TMB  | 31          |
| PBSS304NZ   | 23          | PBSS4160PANS              | 27          | PBSS5240X    | 25          | PDTA113ZT    | 31              | PDTA143TT   | 31          |
| PBSS304PD   | 25          | PBSS4160QA                | 24          | PBSS5240Y    | 26          | PDTA113ZU    | 31              | PDTA143TU   | 31          |
| PBSS304PX   | 25          | PBSS4160T                 | 24          | PBSS5250T    | 26          | PDTA114EM    | 31              | PDTA143XM   | 31          |
| PBSS304PZ   | 25          | PBSS4160X                 | 23          | PBSS5250TH   | 26          | PDTA114EMB   | 31              | PDTA143XMB  | 31          |
| PBSS305ND   | 23          | PBSS4220PANS              | 27          | PBSS5250X    | 25          | PDTA114EQA   | 31              | PDTA143XQA  | 31          |
| PBSS305NX   | 23          | PBSS4230PAN               | 27          | PBSS5260PAP  | 27          | PDTA114ET    | 31              | PDTA143XT   | 31          |
| PBSS305NZ   | 23          | PBSS4230PANP              | 27          | PBSS5260PAPS | 27          | PDTA114EU    | 31              | PDTA143XU   | 31          |
| PBSS305PD   | 25          | PBSS4230QA                | 24          | PBSS5260QA   | 26          | PDTA114TM    | 31              | PDTA143ZM   | 31          |
| PBSS305PX   | 25          | PBSS4230T                 | 24          | PBSS5320D    | 25          | PDTA114TMB   | 31              | PDTA143ZMB  | 31          |
| PBSS305PZ   | 25          | PBSS4240DPN               | 27          | PBSS5320T    | 26          | PDTA114TT    | 31              | PDTA143ZQA  | 31          |
| PBSS306NX   | 23          | PBSS4240T                 | 24          | PBSS5320X    | 25          | PDTA114TU    | 31              | PDTA143ZT   | 31          |
| PBSS306NZ   | 23          | PBSS4240X                 | 23          | PBSS5330PA   | 25          | PDTA114YM    | 31              | PDTA143ZU   | 31          |
| PBSS306PX   | 25          | PBSS4240Y                 | 24          | PBSS5330PAS  | 25          | PDTA114YMB   | 31              | PDTA144EM   | 31          |
| PBSS306PZ   | 25          | PBSS4250X                 | 23          | PBSS5330X    | 25          | PDTA114YQA   | 31              | PDTA144EMB  | 31          |
| PBSS3515M   | 26          | PBSS4260PAN               | 27          | PBSS5350D    | 25          | PDTA114YT    | 31              | PDTA144EQA  | 31          |
| PBSS3515MB  | 26          | PBSS4260PANP              | 27          | PBSS5350SS   | 27          | PDTA114YU    | 31              | PDTA144ET   | 31          |
| PBSS3540M   | 26          | PBSS4260PANPS             | 27          | PBSS5350T    | 26          | PDTA115EM    | 31              | PDTA144EU   | 31          |
| PBSS3540MB  | 26          | PBSS4260PANS              | 27          | PBSS5350TH   | 26          | PDTA115EMB   | 31              | PDTA144TM   | 31          |
| PBSS4021NT  | 24          | PBSS4260QA                | 24          | PBSS5350X    | 25          | PDTA115ET    | 31              | PDTA144TMB  | 31          |
| PBSS4021NX  | 23          | PBSS4320T                 | 24          | PBSS5350Z    | 25          | PDTA115EU    | 31              | PDTA144TT   | 31          |
| PBSS4021NZ  | 23          | PBSS4320X                 | 23          | PBSS5360PAS  | 25          | PDTA115TM    | 31              | PDTA144TU   | 31          |
| PBSS4021PT  | 26          | PBSS4330PA                | 23          | PBSS5360X    | 25          | PDTA115TMB   | 31              | PDTA144VM   | 31          |
| PBSS4021PX  | 25          | PBSS4330PAS               | 23          | PBSS5360Z    | 25          | PDTA115TT    | 31              | PDTA144VMB  | 31          |
| PBSS4021PZ  | 25          | PBSS4330X                 | 23          | PBSS5480X    | 25          | PDTA115TU    | 31              | PDTA144VT   | 31          |
| PBSS4021SN  | 27          | PBSS4350D                 | 23          | PBSS5520X    | 25          | PDTA123EM    | 31              | PDTA144VU   | 31          |
| PBSS4021SP  | 27          | PBSS4350SPN               | 27          | PBSS5540X    | 25          | PDTA123EMB   | 31              | PDTA144WM   | 31          |

| Type number | Page Number | Type number | Page Number | Type number   | Page Number     | Type number   | Page Number   | Type number   | Page Number   |
|-------------|-------------|-------------|-------------|---------------|-----------------|---------------|---------------|---------------|---------------|
| PDTA144WMB  | 31          | PDTC123YT   | 31          | PDTD123ET     | 32              | PESD24VS1ULD  | 57            | PESD3V3X4UHM  | 9, 54, 66     |
| PDTA144WT   | 31          | PDTC123YU   | 31          | PDTD123EU     | 32              | PESD24VS2UAT  | 59            | PESD3V3Y1BSF  | 9, 52, 55     |
| PDTA144WU   | 31          | PDTC124EM   | 31          | PDTD123TT     | 32              | PESD24VS2UT   | 59            | PESD3V3Z1BCSF | 9, 52, 55     |
| PDTB113ET   | 32          | PDTC124EMB  | 31          | PDTD123YQA    | 32              | PESD24VS4UD   | 60            | PESD3V3Z1BSF  | 52, 55, 56    |
| PDTB113EU   | 32          | PDTC124EQA  | 31          | PDTD123YT     | 32              | PESD24VS5UD   | 60            | PESD4V0W1BCSF | 9, 52, 56, 61 |
| PDTB113ZQA  | 32          | PDTC124ET   | 31          | PDTD123YU     | 32              | PESD24VU1UT   | 52            | PESD4V0Y1BSF  | 9, 52         |
| PDTB113ZT   | 32          | PDTC124EU   | 31          | PDTD143EQA    | 32              | PESD2CAN      | 62            | PESD4V0Z1BCSF | 9, 52, 56, 61 |
| PDTB114ET   | 32          | PDTC124TM   | 31          | PDTD143ET     | 32              | PESD2ETH-AD   | 62            | PESD4V0Z1BSF  | 9, 52, 56, 61 |
| PDTB114EQA  | 32          | PDTC124TMB  | 31          | PDTD143EU     | 32              | PESD2ETH-AX   | 62            | PESD5V0C1BSF  | 52, 55, 56    |
| PDTB114ET   | 32          | PDTC124TT   | 31          | PDTD143XQA    | 32              | PESD2ETH-D    | 62            | PESD5V0C1USF  | 52, 55, 56    |
| PDTB114EU   | 32          | PDTC124TU   | 31          | PDTD143XT     | 32              | PESD2ETH-X    | 62            | PESD5V0F1BL   | 52, 62        |
| PDTB123EQA  | 32          | PDTC124XM   | 31          | PDTD143XU     | 32              | PESD2IVN-U    | 62            | PESD5V0F1BLD  | 52, 62        |
| PDTB123ET   | 32          | PDTC124XMB  | 31          | PDZ-B series  | 36              | PESD2IVN24-T  | 62            | PESD5V0F1BRLD | 52            |
| PDTB123EU   | 32          | PDTC124XT   | 31          | PDZ-GW series | 36              | PESD2IVN24-U  | 62            | PESD5V0F1BRSF | 52            |
| PDTB123TT   | 32          | PDTC124XU   | 31          | PES2V0Y1BSF   | 56              | PESD2IVN27-T  | 62            | PESD5V0F1BSF  | 52            |
| PDTB123YQA  | 32          | PDTC143EM   | 31          | PES2V5Y1BSF   | 56              | PESD2IVN27-U  | 62            | PESD5V0F1BSH  | 52            |
| PDTB123YT   | 32          | PDTC143EMB  | 31          | PES3V3Y1BSF   | 56              | PESD2NFC-L    | 64            | PESD5V0F1USF  | 52            |
| PDTB123YU   | 32          | PDTC143EQA  | 31          | PES4V0Y1BSF   | 56              | PESD2NFC-SF   | 64            | PESD5V0H1BSF  | 52, 55, 56    |
| PDTB143EQA  | 32          | PDTC143ET   | 31          | PESD12VL1BA   | 58              | PESD2USB3B    | 9, 56, 61, 65 | PESD5V0L1BA   | 58            |
| PDTB143ET   | 32          | PDTC143EU   | 31          | PESD12VL2BT   | 59              | PESD2USB3S    | 56, 65, 170   | PESD5V0L1BSF  | 58            |
| PDTB143EU   | 32          | PDTC143TM   | 31          | PESD12VS1UA   | 57, 63          | PESD2V0Y1BSF  | 9, 52         | PESD5V0L1UA   | 57            |
| PDTB143XQA  | 32          | PDTC143TMB  | 31          | PESD12VS1UB   | 57              | PESD2V5Y1BSF  | 9, 52, 55     | PESD5V0L1UB   | 57            |
| PDTB143XT   | 32          | PDTC143TT   | 31          | PESD12VS1UJ   | 57, 63          | PESD30VF1BL   | 64            | PESD5V0L1UL   | 57            |
| PDTB143XU   | 32          | PDTC143TU   | 31          | PESD12VS1UL   | 57              | PESD36VS1UJ   | 57            | PESD5V0L1ULD  | 57            |
| PDTC114EM   | 31          | PDTC143XM   | 31          | PESD12VS1ULD  | 57              | PESD36VS1UL   | 57            | PESD5V0L1USF  | 57            |
| PDTC114EMB  | 31          | PDTC143XMB  | 31          | PESD12VS2UT   | 59              | PESD36VS2UT   | 59            | PESD5V0L2BT   | 59            |
| PDTC114EQA  | 31          | PDTC143XQA  | 31          | PESD12VU1UT   | 52              | PESD3USB3B    | 9, 56, 61, 65 | PESD5V0L2UM   | 59            |
| PDTC114ET   | 31          | PDTC143XT   | 31          | PESD12VV1BL   | 58, 61          | PESD3USB3S    | 56, 65, 170   | PESD5V0L2UMB  | 59            |
| PDTC114EU   | 31          | PDTC143XU   | 31          | PESD15VL1BA   | 58              | PESD3V3C1BSF  | 52, 55, 56    | PESD5V0L2UU   | 59            |
| PDTC114TM   | 31          | PDTC143ZM   | 31          | PESD15VL2BT   | 59              | PESD3V3L1BA   | 58            | PESD5V0L4UF   | 60            |
| PDTC114TMB  | 31          | PDTC143ZMB  | 31          | PESD15VS1UB   | 57              | PESD3V3L1UB   | 57            | PESD5V0L4UG   | 60            |
| PDTC114TT   | 31          | PDTC143ZQA  | 31          | PESD15VS1UL   | 57              | PESD3V3L1UL   | 57            | PESD5V0L5UF   | 60            |
| PDTC114TU   | 31          | PDTC143ZT   | 31          | PESD15VS1ULD  | 57              | PESD3V3L2BT   | 59            | PESD5V0L5UY   | 60            |
| PDTC114YM   | 31          | PDTC143ZU   | 31          | PESD15VS2UAT  | 59              | PESD3V3L2UM   | 59            | PESD5V0R1BSF  | 9, 52, 55, 56 |
| PDTC114YMB  | 31          | PDTC144EM   | 31          | PESD15VS2UT   | 59              | PESD3V3L4BHM  | 9, 60         | PESD5V0S1BA   | 58            |
| PDTC114YQA  | 31          | PDTC144EMB  | 31          | PESD15VU1UT   | 52              | PESD3V3L4UF   | 60            | PESD5V0S1BB   | 58            |
| PDTC114YT   | 31          | PDTC144EQA  | 31          | PESD16VV1BSF  | 9, 58           | PESD3V3L4UG   | 60            | PESD5V0S1BL   | 58, 61        |
| PDTC114YU   | 31          | PDTC144ET   | 31          | PESD16VX1UL   | 52              | PESD3V3LSUF   | 60            | PESD5V0S1BLD  | 58, 61        |
| PDTC115EM   | 31          | PDTC144EU   | 31          | PESD18VF1BL   | 52, 64          | PESD3V3LSUK   | 60            | PESD5V0S1BSF  | 58            |
| PDTC115EMB  | 31          | PDTC144TM   | 31          | PESD18VF1BSF  | 52, 64          | PESD3V3LSUY   | 60            | PESD5V0S1UA   | 57, 63        |
| PDTC115ET   | 31          | PDTC144TMB  | 31          | PESD18VV1BBSF | 9, 58           | PESD3V3S1BL   | 9, 58         | PESD5V0S1UB   | 57            |
| PDTC115EU   | 31          | PDTC144TT   | 31          | PESD1CAN      | 62              | PESD3V3S1UB   | 57            | PESD5V0S1UJ   | 57, 63        |
| PDTC115TM   | 31          | PDTC144TU   | 31          | PESD1CAN-U    | 62              | PESD3V3S1UL   | 57            | PESD5V0S1UL   | 57            |
| PDTC115TMB  | 31          | PDTC144VM   | 31          | PESD1FLEX     | 62              | PESD3V3S2UAT  | 59            | PESD5V0S1ULD  | 57            |
| PDTC115TT   | 31          | PDTC144VMB  | 31          | PESD1IVN-U    | 62              | PESD3V3S2UT   | 59            | PESD5V0S1USF  | 57            |
| PDTC115TU   | 31          | PDTC144VT   | 31          | PESD1IVN24-A  | 62              | PESD3V3S4UD   | 60            | PESD5V0S2BQA  | 59, 61, 63    |
| PDTC123EM   | 31          | PDTC144VU   | 31          | PESD1IVN27-A  | 62              | PESD3V3S4UF   | 60            | PESD5V0S2BT   | 59            |
| PDTC123EMB  | 31          | PDTC144WM   | 31          | PESD1IVN27-U  | 62              | PESD3V3S5UD   | 60            | PESD5V0S4UD   | 60            |
| PDTC123ET   | 31          | PDTC144WMB  | 31          | PESD1LIN      | 62              | PESD3V3T1BL   | 9, 58, 61     | PESD5V0S4UF   | 60            |
| PDTC123EU   | 31          | PDTC144WT   | 31          | PESD1LVDS     | 62              | PESD3V3T1BLD  | 9, 58         | PESD5V0S5UD   | 60            |
| PDTC123JM   | 31          | PDTC144WU   | 31          | PESD1NFC-L    | 64              | PESD3V3U1BCSF | 58            | PESD5V0U1BA   | 58            |
| PDTC123JMB  | 31          | PDTD113EQA  | 32          | PESD1NFC-SF   | 64              | PESD3V3U1UA   | 57            | PESD5V0U1BB   | 58            |
| PDTC123JT   | 31          | PDTD113ET   | 32          | PESD1USB3B    | 9, 56, 61, 65   | PESD3V3U1UB   | 57            | PESD5V0U1BL   | 58            |
| PDTC123JU   | 31          | PDTD113EU   | 32          | PESD1USB3S    | 55, 56, 65, 170 | PESD3V3U1UL   | 57            | PESD5V0U1BLD  | 58            |
| PDTC123TM   | 31          | PDTD113ZQA  | 32          | PESD24VF1BL   | 52, 64          | PESD3V3U1UT   | 52            | PESD5V0U1UA   | 57            |
| PDTC123TMB  | 31          | PDTD113ZT   | 32          | PESD24VF1BSF  | 52, 64          | PESD3V3V1BCSF | 58            | PESD5V0U1UB   | 57            |
| PDTC123TT   | 31          | PDTD113ZU   | 32          | PESD24VL1BA   | 58              | PESD3V3V1BL   | 9, 58         | PESD5V0U1UL   | 57            |
| PDTC123TU   | 31          | PDTD114EQA  | 32          | PESD24VL2BT   | 59              | PESD3V3W1BCSF | 52, 55, 56    | PESD5V0U1UT   | 52            |
| PDTC123XQA  | 31          | PDTD114ET   | 32          | PESD24VS1UA   | 57              | PESD3V3W1BSF  | 56            | PESD5V0U2BM   | 59            |
| PDTC123YM   | 31          | PDTD114EU   | 32          | PESD24VS1UB   | 57              | PESD3V3X1BCSF | 52            | PESD5V0U2BMB  | 59            |
| PDTC123YMB  | 31          | PDTD123EQA  | 32          | PESD24VS1UL   | 57              | PESD3V3X1BL   | 52            | PESD5V0U2BT   | 59            |



# Index

| Type number   | Page Number   | Type number     | Page Number | Type number     | Page Number     | Type number     | Page Number | Type number  | Page Number |
|---------------|---------------|-----------------|-------------|-----------------|-----------------|-----------------|-------------|--------------|-------------|
| PESD5V0U4BF   | 60            | PHPT60606PY     | 30          | PMBTA14         | 20              | PMEG10020AELR   | 46          | PMEG3002AESF | 44          |
| PESD5V0U5BF   | 60            | PHPT60610NY     | 30          | PMBTA42         | 18              | PMEG10020ELR    | 46          | PMEG3002EEF  | 8, 45       |
| PESD5V0V1BA   | 58            | PHPT60610PY     | 30          | PMBTA42DS       | 18              | PMEG10030ELP    | 46          | PMEG3002EJ   | 47          |
| PESD5V0V1BB   | 58            | PHPT61002NYC    | 30          | PMBTA44         | 18              | PMEG100V060ELPD | 46          | PMEG3002ESF  | 44          |
| PESD5V0V1BCSF | 58            | PHPT61002NYCLH  | 30          | PMBTA45         | 29              | PMEG100V080ELPD | 46          | PMEG3005AEA  | 47          |
| PESD5V0V1BDSF | 58            | PHPT61002PYC    | 30          | PMBTA56         | 14              | PMEG100V100ELPD | 47          | PMEG3005AESF | 44          |
| PESD5V0V1BL   | 58, 61        | PHPT61002PYCLH  | 30          | PMBTA64         | 20              | PMEG1020EA      | 47          | PMEG3005CT   | 48          |
| PESD5V0V1BLD  | 58, 61        | PHPT610030NK    | 30          | PMBTA92         | 18              | PMEG1020EH      | 47          | PMEG3005EB   | 47          |
| PESD5V0V1BSF  | 58            | PHPT610030PK    | 30          | PMC85XP         | 96              | PMEG1020EJ      | 47          | PMEG3005EEF  | 8, 45       |
| PESD5V0V2BM   | 59, 61, 63    | PHPT610035NK    | 21, 30      | PMCM4401UNE     | 97              | PMEG1030EH      | 47          | PMEG3005EGW  | 47          |
| PESD5V0V2BMB  | 59, 61, 63    | PHPT610035PK    | 21, 30      | PMCM4401UPE     | 97              | PMEG1030EJ      | 47          | PMEG3005EH   | 47          |
| PESD5V0X1BCAL | 52            | PHPT61003NY     | 30          | PMCM4401VNE     | 97, 170         | PMEG2002AESF    | 44          | PMEG3005EJ   | 47          |
| PESD5V0X1BCL  | 52            | PHPT61003PY     | 30          | PMCM4401VPE     | 97, 170         | PMEG2002AESFB   | 44          | PMEG3005EL   | 45          |
| PESD5V0X1BCSF | 52            | PHPT61006NY     | 30          | PMCM4402UPE     | 97              | PMEG2002ESF     | 44          | PMEG3005ELD  | 46          |
| PESD5V0X1BL   | 52            | PHPT61006PY     | 30          | PMCM6501CUNE    | 97              | PMEG2005AEA     | 47          | PMEG3005ESF  | 44          |
| PESD5V0X1BT   | 53            | PHPT61010NY     | 30          | PMCM6501UNE     | 97              | PMEG2005AEL     | 45          | PMEG3005ET   | 47          |
| PESD5V0X1UAB  | 52            | PHPT61010PY     | 30          | PMCM6501UPE     | 97              | PMEG2005AELD    | 45          | PMEG3010AESA | 45          |
| PESD5V0X1UALD | 52            | PIMC31          | 32          | PMCM6501VNE     | 97              | PMEG2005AESF    | 44          | PMEG3010AESB | 44          |
| PESD5V0X1UB   | 52            | PIMN31          | 32          | PMCM6501VPE     | 97              | PMEG2005BELD    | 45          | PMEG3010BEA  | 47          |
| PESD5V0X1ULD  | 52            | PIMT1           | 15          | PMCPB5530X      | 96, 102         | PMEG2005CT      | 48          | PMEG3010BEP  | 46          |
| PESD5V0X2UAM  | 53            | PIMZ2           | 15          | PMCXB1000UE     | 95, 102         | PMEG2005EB      | 47          | PMEG3010BER  | 46          |
| PESD5V0X2UAMB | 53            | PLVA600A series | 36          | PMCXB900UE      | 95, 102         | PMEG2005EGW     | 47          | PMEG3010CEH  | 47          |
| PESD5V0X2UM   | 53            | PMBD353         | 43          | PMCXB900UEL     | 95              | PMEG2005EH      | 47          | PMEG3010CEJ  | 47          |
| PESD5V0X2UMB  | 53            | PMBD354         | 43          | PMD2001D        | 22              | PMEG2005EJ      | 47          | PMEG3010EB   | 47          |
| PESD5V2S2UT   | 59            | PMB53904        | 16          | PMD3001D        | 22              | PMEG2005EL      | 45          | PMEG3010EGW  | 47          |
| PESD5VOL5UK   | 60            | PMB53906        | 16          | PMDPB30XN       | 96, 103         | PMEG2005ELD     | 45          | PMEG3010EH   | 47          |
| PESD5Z12      | 57            | PMBT2222        | 16          | PMDPB55XP       | 96, 103         | PMEG2005EPK     | 45          | PMEG3010EJ   | 47          |
| PESD5Z2.5     | 57            | PMBT2222A       | 16          | PMDPB56XNEA     | 83, 85, 96, 103 | PMEG2005ESF     | 44          | PMEG3010EP   | 46          |
| PESD5Z3.3     | 57            | PMBT2222AM      | 8, 16       | PMDPB58UPE      | 96, 103         | PMEG2005ET      | 47          | PMEG3010ER   | 46          |
| PESD5Z5.0     | 57            | PMBT2222AMB     | 8, 16       | PMDPB70XP       | 96, 103         | PMEG2010AEB     | 47          | PMEG3010ESB  | 44          |
| PESD5Z6.0     | 57            | PMBT2222AQA     | 8, 16       | PMDPB70XPE      | 96, 103         | PMEG2010AEH     | 47          | PMEG3010ET   | 47          |
| PESD5Z7.0     | 57            | PMBT2222AYS     | 16          | PMDPB80XP       | 96, 103         | PMEG2010AEJ     | 47          | PMEG3015EH   | 47          |
| PESD6V0L2UU   | 59            | PMBT2369        | 16          | PMDPB85UPE      | 96, 103         | PMEG2010AET     | 47          | PMEG3015EJ   | 47          |
| PESD6V5C1USF  | 9, 52, 55, 56 | PMBT2907        | 16          | PMDPB95XNE2     | 96, 103         | PMEG2010BEA     | 47          | PMEG3020BEP  | 46          |
| PESD7V0C1BSF  | 9, 52, 55, 56 | PMBT2907A       | 16          | PMDXB1200UPE    | 95, 103         | PMEG2010BELD    | 45          | PMEG3020BER  | 46          |
| PESD7V0H1BSF  | 9, 52, 55, 56 | PMBT2907AM      | 8, 16       | PMDXB550UNE     | 95, 103         | PMEG2010BER     | 46          | PMEG3020CEP  | 46          |
| PESD7V0R1BSF  | 52, 55, 56    | PMBT2907AMB     | 8, 16       | PMDXB600UNE     | 95, 103         | PMEG2010EA      | 47          | PMEG3020CPA  | 48          |
| PESD8V0S1ULD  | 9, 57         | PMBT2907AQA     | 8, 16       | PMDXB600UNEL    | 95              | PMEG2010EH      | 47          | PMEG3020CPAS | 48          |
| PESD9V0C1BSF  | 52, 55        | PMBT2907AYS     | 16          | PMDXB950UPE     | 95, 103         | PMEG2010EJ      | 47          | PMEG3020DEP  | 46          |
| PESD9V0C1USF  | 56            | PMBT3904        | 16          | PMDXB950UPEL    | 95              | PMEG2010EPA     | 45          | PMEG3020EGW  | 47          |
| PHB33NQ20T    | 91            | PMBT3904M       | 16          | PMEG030V030EPD  | 46              | PMEG2010EPAS    | 45          | PMEG3020EH   | 47          |
| PHB45NQ15T    | 91            | PMBT3904MB      | 16          | PMEG030V050EPD  | 46              | PMEG2010EPK     | 45          | PMEG3020EJ   | 47          |
| PHDMI2AB4     | 55, 63        | PMBT3904QA      | 8, 16       | PMEG040V030EPD  | 46              | PMEG2010ER      | 46          | PMEG3020EP   | 46          |
| PHDMI2F4      | 55, 63        | PMBT3904RA      | 8, 16       | PMEG040V050EPD  | 46              | PMEG2010ET      | 47          | PMEG3020EPA  | 45          |
| PHDMI2FR4     | 55, 63        | PMBT3904YS      | 16          | PMEG045T030EPD  | 46              | PMEG2015EA      | 47          | PMEG3020EPAS | 45          |
| PHP18NQ11T    | 90            | PMBT3906        | 16          | PMEG045T050EPD  | 46              | PMEG2015EH      | 47          | PMEG3020ER   | 46          |
| PHP20NQ20T    | 90            | PMBT3906M       | 16          | PMEG045T100EPD  | 47              | PMEG2015EJ      | 47          | PMEG3030BEP  | 46          |
| PHP23NQ11T    | 90            | PMBT3906MB      | 16          | PMEG045T150EIPD | 47              | PMEG2015EPK     | 45          | PMEG3030EP   | 46          |
| PHP27NQ11T    | 90            | PMBT3906YS      | 16          | PMEG045T150EPD  | 47              | PMEG2020AEA     | 47          | PMEG3050BEP  | 46          |
| PHP28NQ15T    | 90            | PMBT3946YPN     | 16          | PMEG045V050EPD  | 46              | PMEG2020CPA     | 48          | PMEG3050EP   | 46          |
| PHP33NQ20T    | 90            | PMBT4401        | 16          | PMEG045V100EPD  | 47              | PMEG2020CPAS    | 48          | PMEG4002AESF | 44          |
| PHPT60406NY   | 30            | PMBT4401YS      | 16          | PMEG045V150EPD  | 47              | PMEG2020EH      | 47          | PMEG4002EB   | 47          |
| PHPT60406PY   | 30            | PMBT4403        | 16          | PMEG050T150EPD  | 47              | PMEG2020EJ      | 47          | PMEG4002EJ   | 47          |
| PHPT60410NY   | 30            | PMBT4403YS      | 16          | PMEG050V030EPD  | 46              | PMEG2020EPA     | 45          | PMEG4002EL   | 45          |
| PHPT60410PY   | 30            | PMBT5550        | 18          | PMEG050V150EPD  | 47              | PMEG2020EPAS    | 45          | PMEG4002ELD  | 45          |
| PHPT60415NY   | 30            | PMBT5551        | 18          | PMEG060V030EPD  | 46              | PMEG2020EPK     | 45          | PMEG4002ESF  | 44          |
| PHPT60415PY   | 30            | PMBT6428        | 14          | PMEG060V050EPD  | 46              | PMEG3001EEF     | 8, 45       | PMEG4005AEA  | 47          |
| PHPT60603NY   | 30            | PMBT6429        | 14          | PMEG060V100EPD  | 47              | PMEG3002AEB     | 47          | PMEG4005AESF | 44          |
| PHPT60603PY   | 30            | PMBTA06         | 8, 14       | PMEG10010ELR    | 46              | PMEG3002AEL     | 45          | PMEG4005CEA  | 47          |
| PHPT60606NY   | 30            | PMBTA13         | 20          | PMEG10020AELP   | 46              | PMEG3002AELD    | 45          | PMEG4005CEJ  | 47          |



| Type number  | Page Number | Type number  | Page Number | Type number | Page Number | Type number | Page Number | Type number    | Page Number |
|--------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|----------------|-------------|
| PMEG4005CT   | 48          | PMEG6010ETR  | 46          | PMN55ENEA   | 10, 83      | PMST5551    | 18          | PMXB75UPE      | 95          |
| PMEG4005EGW  | 47          | PMEG6020AELP | 46          | PMN70EPE    | 101         | PMST6428    | 14          | PMZ1200UPE     | 94, 101     |
| PMEG4005EH   | 47          | PMEG6020AELR | 46          | PMN70XP     | 101         | PMST6429    | 14          | PMZ130UNE      | 94, 99      |
| PMEG4005EJ   | 47          | PMEG6020ELR  | 46          | PMN70XPE    | 101         | PMSTA05     | 14          | PMZ200UNE      | 94, 99      |
| PMEG4005EPK  | 45          | PMEG6020EP   | 46          | PMP4201G    | 21          | PMSTA06     | 8, 14       | PMZ290UNE2     | 94, 99      |
| PMEG4005ESF  | 44          | PMEG6020EPA  | 45          | PMP4201Y    | 21          | PMSTA42     | 18          | PMZ320UPE      | 94, 101     |
| PMEG4005ET   | 47          | PMEG6020EPAS | 45          | PMP4501G    | 21          | PMSTA55     | 14          | PMZ350UPE      | 94, 101     |
| PMEG4010AESB | 44          | PMEG6020ER   | 46          | PMP4501QAS  | 21          | PMSTA56     | 14          | PMZ390UNE      | 94, 99      |
| PMEG4010BEA  | 47          | PMEG6020ETP  | 46          | PMP4501Y    | 21          | PMSTA92     | 18          | PMZ550UNE      | 94, 99      |
| PMEG4010CEA  | 47          | PMEG6020ETR  | 46          | PMP5501QAS  | 21          | PMT280ENEA  | 83, 99      | PMZ600UNE      | 94, 99      |
| PMEG4010CEGW | 47          | PMEG6030ELP  | 46          | PMPB100ENE  | 11, 96      | PMT560ENEA  | 83, 99      | PMZ600UNEL     | 95          |
| PMEG4010CEH  | 47          | PMEG6030EP   | 46          | PMPB10XNE   | 96          | PMV100ENEA  | 83          | PMZ950UPE      | 94, 101     |
| PMEG4010CEJ  | 47          | PMEG6030ETP  | 46          | PMPB10XNEA  | 83          | PMV100XPEA  | 83, 101     | PMZ950UPEL     | 95          |
| PMEG4010CPA  | 48          | PMEG6030EVP  | 46          | PMPB11EN    | 96          | PMV120ENEA  | 83, 99      | PMZB1200UPE    | 94, 101     |
| PMEG4010CPAS | 48          | PMEG6045ETP  | 46          | PMPB12UNE   | 96          | PMV130ENEA  | 83, 99      | PMZB150UNE     | 94, 99      |
| PMEG4010EGW  | 47          | PMEG60T10ELP | 8, 46       | PMPB12UNEA  | 83          | PMV160UP    | 101         | PMZB200UNE     | 94, 99      |
| PMEG4010EH   | 47          | PMEG60T10ELR | 8, 46       | PMPB13XNE   | 96          | PMV16XN     | 99          | PMZB290UNE2    | 94, 99      |
| PMEG4010EJ   | 47          | PMEG60T20ELP | 8, 46       | PMPB13XNEA  | 83          | PMV20EN     | 99          | PMZB320UPE     | 94, 101     |
| PMEG4010EP   | 46          | PMEG60T20ELR | 46          | PMPB14XP    | 11, 96      | PMV20XNE    | 99          | PMZB350UPE     | 94, 101     |
| PMEG4010EPK  | 45          | PMEG60T30ELP | 8, 46       | PMPB15XN    | 96          | PMV20XNEA   | 83, 99      | PMZB390UNE     | 94, 99      |
| PMEG4010ER   | 46          | PMEG60T30ELR | 8, 46       | PMPB15XPA   | 83          | PMV230ENEA  | 83, 99      | PMZB550UNE     | 94, 99      |
| PMEG4010ESB  | 44          | PMEG60T50ELP | 8, 46       | PMPB19XP    | 96          | PMV250EPEA  | 83, 101     | PMZB600UNE     | 94, 99      |
| PMEG4010ET   | 47          | PMF170XP     | 101         | PMPB20EN    | 96          | PMV25ENEA   | 83, 99      | PMZB600UNEL    | 95          |
| PMEG4010ETP  | 46          | PMF250XNE    | 99          | PMPB20XNEA  | 83, 96      | PMV27UPE    | 101         | PMZB950UPE     | 94, 101     |
| PMEG4010ETR  | 46          | PMF63UNE     | 99          | PMPB20XPE   | 96          | PMV27UPEA   | 83          | PMZB950UPEL    | 95          |
| PMEG4015EPK  | 45          | PMFFPB8032XP | 96          | PMPB20XPEA  | 83          | PMV280ENEA  | 83, 99      | PNE20010ER     | 8, 41       |
| PMEG4020EP   | 46          | PMFFPB8040XP | 100         | PMPB215ENEA | 83, 96      | PMV28UNEA   | 83, 99      | PNE20020EP     | 8, 41       |
| PMEG4020EPA  | 45          | PMG85XP      | 101         | PMPB23XNE   | 96          | PMV30ENEA   | 10, 83      | PNE20020ER     | 8, 41       |
| PMEG4020EPAS | 45          | PMGD175XNE   | 103         | PMPB24EP    | 11, 96      | PMV30UN2    | 99          | PNE20030EP     | 8, 41       |
| PMEG4020EPK  | 45          | PMGD290UCEA  | 85          | PMPB25ENE   | 11, 96      | PMV30XPEA   | 83, 101     | PNS40010ER     | 41          |
| PMEG4020ER   | 46          | PMH1200UPE   | 11, 94      | PMPB27EPA   | 83          | PMV32UP     | 101         | PQMB11         | 32          |
| PMEG4020ETP  | 46          | PMH550UNE    | 11, 94      | PMPB29XNE   | 96          | PMV33UPE    | 101         | PQMD10         | 32          |
| PMEG4020ETR  | 46          | PMH600UNE    | 11, 94      | PMPB29XNEA  | 83          | PMV35EPE    | 101         | PQMD12         | 32          |
| PMEG4030EP   | 46          | PMH950UPE    | 11, 94      | PMPB29XPE   | 96          | PMV37EN2    | 99          | PQMD13         | 32          |
| PMEG4030ER   | 46          | PML260SN     | 92          | PMPB29XPEA  | 83          | PMV40UN2    | 99          | PQMD16         | 32          |
| PMEG4030ETP  | 46          | PML340SN     | 92          | PMPB30XPE   | 11, 96      | PMV42ENE    | 99          | PQMD2          | 32          |
| PMEG4050EP   | 46          | PMMT491A     | 24          | PMPB33XN    | 96          | PMV450ENEA  | 83, 99      | PQMD3          | 32          |
| PMEG4050ETP  | 46          | PMMT591A     | 26          | PMPB33XP    | 96          | PMV45EN2    | 99          | PQMH10         | 32          |
| PMEG40T10ER  | 46          | PMN120ENE    | 11, 99      | PMPB43XPE   | 96          | PMV48XP     | 101         | PQMH11         | 32          |
| PMEG40T20EP  | 46          | PMN120ENEA   | 10, 83      | PMPB43XPEA  | 83          | PMV48XPA    | 83          | PQMH13         | 32          |
| PMEG40T20ER  | 46          | PMN16XNE     | 99          | PMPB47XP    | 96          | PMV50ENEA   | 83, 99      | PQMH2          | 32          |
| PMEG40T30EP  | 46          | PMN20ENA     | 10, 83      | PMPB48EP    | 96          | PMV50EPEA   | 83          | PQMH9          | 32          |
| PMEG40T30ER  | 46          | PMN230ENE    | 11, 99      | PMPB50ENE   | 11, 96      | PMV50UPE    | 101         | PRMB11         | 32          |
| PMEG40T50EP  | 46          | PMN230ENEA   | 10, 83      | PMPB50EPEA  | 83          | PMV50XP     | 101         | PRMD10         | 32          |
| PMEG45A10EPD | 47          | PMN25ENE     | 11, 99      | PMPB55ENEA  | 83, 96      | PMV55ENEA   | 83, 99      | PRMD12         | 32          |
| PMEG45T15EPD | 47          | PMN25ENEA    | 10, 83      | PMPB85ENEA  | 83, 96      | PMV65ENEA   | 83, 99      | PRMD13         | 32          |
| PMEG6002EB   | 47          | PMN280ENEA   | 10, 83, 99  | PMPB95ENEA  | 83, 96      | PMV65UNE    | 99          | PRMD16         | 32          |
| PMEG6002EJ   | 47          | PMN28UNE     | 11, 99      | PMSS3904    | 16          | PMV65XP     | 101         | PRMD2          | 32          |
| PMEG6002EL   | 45          | PMN30ENEA    | 83          | PMSS3906    | 16          | PMV65XPE    | 101         | PRMD3          | 32          |
| PMEG6002ELD  | 45          | PMN30UN      | 99          | PMST2222    | 16          | PMV65XPEA   | 83          | PRMH10         | 32          |
| PMEG6010AESB | 44          | PMN30UNE     | 99          | PMST2222A   | 16          | PMV75UP     | 101         | PRMH11         | 32          |
| PMEG6010CEGW | 47          | PMN30XP      | 101         | PMST2369    | 16          | PMV90ENE    | 99          | PRMH13         | 32          |
| PMEG6010CEH  | 47          | PMN30XPE     | 11, 101     | PMST2907A   | 16          | PMXB120EPE  | 95          | PRMH2          | 32          |
| PMEG6010CEJ  | 47          | PMN40ENA     | 10, 83      | PMST3904    | 16          | PMXB350UPE  | 95          | PRMH9          | 32          |
| PMEG6010CPA  | 48          | PMN40ENE     | 99          | PMST3906    | 16          | PMXB360ENEA | 83, 95      | PRTR5V0U2AX    | 53, 64      |
| PMEG6010CPAS | 48          | PMN42XPEA    | 83          | PMST4401    | 16          | PMXB40UNE   | 95          | PRTR5V0U2F     | 53, 64      |
| PMEG6010ELR  | 46          | PMN48XP      | 101         | PMST4403    | 16          | PMXB43UNE   | 95          | PRTR5V0U2X     | 53, 64      |
| PMEG6010EP   | 46          | PMN50EPE     | 11, 101     | PMST5088    | 14          | PMXB56EN    | 95          | PRTR5V0U4D     | 54, 62, 64  |
| PMEG6010ER   | 46          | PMN52XP      | 101         | PMST5089    | 14          | PMXB65ENE   | 95          | PSMN010-80YL   | 92          |
| PMEG6010ESB  | 44          | PMN55ENE     | 11, 99      | PMST5550    | 18          | PMXB65UPE   | 95          | PSMN011-100YSF | 92          |

# Index

| Type number    | Page Number | Type number   | Page Number | Type number    | Page Number | Type number    | Page Number | Type number   | Page Number |
|----------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------------|-------------|
| PSMN011-30YLC  | 87          | PSMN0R7-25YLD | 86          | PSMN2R4-30MLD  | 88          | PSMN4R5-40BS   | 89          | PSMN8R7-80BS  | 91          |
| PSMN011-60ML   | 89          | PSMN0R9-25YLD | 86          | PSMN2R4-30YLD  | 87          | PSMN4R5-40PS   | 88          | PSMN8R7-80PS  | 90          |
| PSMN011-60MS   | 89          | PSMN0R9-30ULD | 10, 87      | PSMN2R5-30YL   | 87          | PSMN4R6-60BS   | 89          | PSMN9R0-25MLC | 88          |
| PSMN011-80YS   | 92          | PSMN0R9-30YLD | 87          | PSMN2R5-40YLD  | 89          | PSMN4R6-60PS   | 88          | PSMN9R1-30YL  | 87          |
| PSMN012-100YL  | 92          | PSMN102-200Y  | 92          | PSMN2R5-60PL   | 88          | PSMN4R8-100BSE | 91          | PSMN9R5-100BS | 91          |
| PSMN012-100YS  | 92          | PSMN1R0-25YLD | 86          | PSMN2R6-30YLC  | 87          | PSMN4R8-100PSE | 90          | PSMN9R5-100PS | 90          |
| PSMN012-60YS   | 89          | PSMN1R0-30YLC | 87          | PSMN2R6-40YS   | 89          | PSMN5R0-100ES  | 91          | PSMN9R5-30YLC | 87          |
| PSMN012-80BS   | 91          | PSMN1R0-30YLD | 87          | PSMN2R6-60PS   | 88          | PSMN5R0-100PS  | 90          | PSMN9R8-30MLC | 88          |
| PSMN012-80PS   | 90          | PSMN1R0-40SSH | 88          | PSMN2R7-30BL   | 86          | PSMN5R0-30YL   | 87          | PSMNR51-25YLH | 86          |
| PSMN013-100BS  | 91          | PSMN1R0-40ULD | 10, 89      | PSMN2R7-30PL   | 86          | PSMN5R0-80BS   | 91          | PSMNR58-30YLH | 87          |
| PSMN013-100PS  | 90          | PSMN1R0-40YLD | 89          | PSMN2R8-25MLC  | 88          | PSMN5R0-80PS   | 90          | PSMNR60-25YLH | 86          |
| PSMN013-100YSE | 92          | PSMN1R0-40YSH | 89          | PSMN2R8-40BS   | 89          | PSMN5R2-60YL   | 89          | PSMNR70-30YLH | 87          |
| PSMN013-30MLC  | 88          | PSMN1R1-25YLC | 86          | PSMN2R8-40PS   | 88          | PSMN5R3-25MLD  | 88          | PSMNR70-40SSH | 88          |
| PSMN013-30YLC  | 87          | PSMN1R1-30EL  | 86          | PSMN2R8-40YSD  | 89          | PSMN5R4-25YLD  | 86          | PSMNR90-30BL  | 86          |
| PSMN013-60YL   | 89          | PSMN1R1-30PL  | 86          | PSMN2R8-80BS   | 91          | PSMN5R5-60YS   | 89          | PSMNR90-40SSH | 88          |
| PSMN013-80YS   | 92          | PSMN1R1-40BS  | 89          | PSMN2R9-25YLC  | 86          | PSMN5R6-100BS  | 91          | PSMNR90-40YLH | 89          |
| PSMN014-40YS   | 89          | PSMN1R2-25YL  | 86          | PSMN3R0-30MLC  | 88          | PSMN5R6-100PS  | 90          | PSMP015-40YE  | 10, 92      |
| PSMN014-80YL   | 92          | PSMN1R2-25YLC | 86          | PSMN3R0-30YL   | 87          | PSMN5R6-100YSF | 92          | PSMP020-30YE  | 10, 92      |
| PSMN015-100YL  | 92          | PSMN1R2-25YLD | 86          | PSMN3R0-30YLD  | 87          | PSMN5R6-60YL   | 89          | PSMP025-40YE  | 10, 92      |
| PSMN015-110P   | 90          | PSMN1R2-30YLC | 87          | PSMN3R0-60BS   | 89          | PSMN5R8-40YS   | 89          | PSMP032-60YE  | 10, 92      |
| PSMN015-60BS   | 89          | PSMN1R2-30YLD | 87          | PSMN3R0-60ES   | 89          | PSMN6R0-25YLB  | 86          | PSMP057-60YE  | 10, 92      |
| PSMN015-60PS   | 88          | PSMN1R3-30YL  | 87          | PSMN3R0-60PS   | 88          | PSMN6R0-25YLD  | 86          | PSSI2021SAY   | 19          |
| PSMN016-100BS  | 91          | PSMN1R4-30YLD | 87          | PSMN3R2-30YLC  | 87          | PSMN6R0-30YL   | 87          | PTVS10VP1UP   | 69          |
| PSMN016-100PS  | 90          | PSMN1R4-40YLD | 89          | PSMN3R2-40YLD  | 89          | PSMN6R0-30YLB  | 87          | PTVS10VP1UTP  | 69          |
| PSMN016-100YS  | 92          | PSMN1R5-25MLH | 88          | PSMN3R3-40YS   | 89          | PSMN6R0-30YLD  | 87          | PTVS10VS1UR   | 68          |
| PSMN017-30BL   | 86          | PSMN1R5-25YL  | 86          | PSMN3R3-60PL   | 88          | PSMN6R1-25MLD  | 88          | PTVS10VS1UTR  | 68          |
| PSMN017-30EL   | 86          | PSMN1R5-30BLE | 86          | PSMN3R3-80ES   | 91          | PSMN6R1-30YLD  | 87          | PTVS10VU1UPA  | 67          |
| PSMN017-30PL   | 86          | PSMN1R5-30YL  | 87          | PSMN3R3-80PS   | 90          | PSMN6R3-120ES  | 91          | PTVS10VZ1USK  | 67          |
| PSMN017-60YS   | 89          | PSMN1R5-30YLC | 87          | PSMN3R4-30BL   | 86          | PSMN6R3-120PS  | 90          | PTVS11VP1UP   | 69          |
| PSMN017-80BS   | 91          | PSMN1R5-40ES  | 89          | PSMN3R4-30BLE  | 86          | PSMN6R4-30MLD  | 88          | PTVS11VP1UTP  | 69          |
| PSMN017-80PS   | 90          | PSMN1R5-40PS  | 88          | PSMN3R4-30PL   | 86          | PSMN6R5-30MLD  | 88          | PTVS11VS1UR   | 68          |
| PSMN018-100ESF | 91          | PSMN1R5-40YSD | 89          | PSMN3R5-25MLD  | 88          | PSMN6R5-80BS   | 91          | PTVS11VS1UTR  | 68          |
| PSMN018-100PSF | 90          | PSMN1R6-30BL  | 86          | PSMN3R5-30YL   | 87          | PSMN6R5-80PS   | 90          | PTVS12VP1UP   | 69          |
| PSMN018-80YS   | 92          | PSMN1R6-30MLH | 10, 88      | PSMN3R5-40YLD  | 89          | PSMN6R9-100YSF | 92          | PTVS12VP1UTP  | 69          |
| PSMN019-100YL  | 92          | PSMN1R6-30PL  | 86          | PSMN3R5-80ES   | 91          | PSMN7R0-100BS  | 91          | PTVS12VS1UR   | 68          |
| PSMN020-100YS  | 92          | PSMN1R7-25YLD | 86          | PSMN3R5-80PS   | 90          | PSMN7R0-100ES  | 91          | PTVS12VS1UTR  | 68          |
| PSMN020-30MLC  | 88          | PSMN1R7-30YL  | 87          | PSMN3R7-100BSE | 10, 91      | PSMN7R0-100PS  | 90          | PTVS12VU1UPA  | 67          |
| PSMN021-100YL  | 92          | PSMN1R7-40YLD | 89          | PSMN3R8-100BS  | 91          | PSMN7R0-30MLC  | 88          | PTVS12VZ1USK  | 67          |
| PSMN022-30BL   | 86          | PSMN1R7-60BS  | 89          | PSMN3R9-100YSF | 92          | PSMN7R0-30YL   | 87          | PTVS13VP1UP   | 69          |
| PSMN022-30PL   | 86          | PSMN1R8-30BL  | 86          | PSMN3R9-25MLC  | 88          | PSMN7R0-30YLC  | 87          | PTVS13VP1UTP  | 69          |
| PSMN025-80YL   | 92          | PSMN1R8-30PL  | 86          | PSMN3R9-60PS   | 88          | PSMN7R0-60YS   | 89          | PTVS13VS1UR   | 68          |
| PSMN026-80YS   | 92          | PSMN1R8-40YLC | 89          | PSMN4R0-25YLC  | 86          | PSMN7R5-30MLD  | 88          | PTVS13VS1UTR  | 68          |
| PSMN027-100BS  | 91          | PSMN1R9-40PL  | 88          | PSMN4R0-30YL   | 87          | PSMN7R5-30YLD  | 87          | PTVS14VP1UP   | 69          |
| PSMN027-100PS  | 90          | PSMN1R9-40YSD | 89          | PSMN4R0-30YLD  | 87          | PSMN7R5-60YL   | 89          | PTVS14VP1UTP  | 69          |
| PSMN028-100YS  | 92          | PSMN2R0-25MLD | 88          | PSMN4R0-40YS   | 89          | PSMN7R6-100BSE | 91          | PTVS14VS1UR   | 68          |
| PSMN030-150P   | 90          | PSMN2R0-25YLD | 86          | PSMN4R0-60YS   | 89          | PSMN7R6-60BS   | 89          | PTVS14VS1UTR  | 68          |
| PSMN030-60YS   | 89          | PSMN2R0-30BL  | 86          | PSMN4R1-30YLC  | 87          | PSMN7R6-60PS   | 88          | PTVS15VP1UP   | 69          |
| PSMN034-100BS  | 91          | PSMN2R0-30PL  | 86          | PSMN4R1-60YL   | 89          | PSMN7R8-100PSE | 90          | PTVS15VP1UTP  | 69          |
| PSMN034-100PS  | 90          | PSMN2R0-30YL  | 87          | PSMN4R2-30MLD  | 88          | PSMN7R8-120ES  | 91          | PTVS15VS1UR   | 68          |
| PSMN038-100YL  | 92          | PSMN2R0-30YLD | 87          | PSMN4R2-60PL   | 88          | PSMN7R8-120PS  | 90          | PTVS15VS1UTR  | 68          |
| PSMN039-100YS  | 92          | PSMN2R0-30YLE | 87          | PSMN4R3-100ES  | 91          | PSMN8R0-40BS   | 89          | PTVS15VU1UPA  | 67          |
| PSMN040-100MSE | 92          | PSMN2R0-40YLD | 89          | PSMN4R3-100PS  | 90          | PSMN8R0-40PS   | 88          | PTVS15VZ1USK  | 67          |
| PSMN041-80YL   | 92          | PSMN2R0-60ES  | 89          | PSMN4R3-30BL   | 86          | PSMN8R0-80YL   | 92          | PTVS16VP1UP   | 69          |
| PSMN045-80YS   | 92          | PSMN2R0-60PS  | 88          | PSMN4R3-30PL   | 86          | PSMN8R2-80YS   | 92          | PTVS16VP1UTP  | 69          |
| PSMN050-80BS   | 91          | PSMN2R0-60PSR | 88          | PSMN4R3-80ES   | 91          | PSMN8R3-40YS   | 89          | PTVS16VS1UR   | 68          |
| PSMN057-200B   | 91          | PSMN2R1-40PL  | 88          | PSMN4R3-80PS   | 90          | PSMN8R5-100ES  | 91          | PTVS16VS1UTR  | 68          |
| PSMN057-200P   | 90          | PSMN2R2-30YLC | 87          | PSMN4R4-30MLC  | 88          | PSMN8R5-100ESF | 91          | PTVS17VP1UP   | 69          |
| PSMN059-150Y   | 92          | PSMN2R2-40BS  | 89          | PSMN4R4-80BS   | 91          | PSMN8R5-100PSF | 90          | PTVS17VP1UTP  | 69          |
| PSMN069-100YS  | 92          | PSMN2R2-40PS  | 88          | PSMN4R4-80PS   | 90          | PSMN8R5-60YS   | 89          | PTVS17VS1UR   | 68          |
| PSMN075-100MSE | 92          | PSMN2R2-40YSD | 89          | PSMN4R5-30YLC  | 87          | PSMN8R7-100YSF | 92          | PTVS17VS1UTR  | 68          |

| Type number  | Page Number       | Type number   | Page Number       | Type number  | Page Number | Type number     | Page Number | Type number   | Page Number |
|--------------|-------------------|---------------|-------------------|--------------|-------------|-----------------|-------------|---------------|-------------|
| PTVS18VP1UP  | 69                | PTVS45VP1UTP  | 69                | PTVS8V5S1UR  | 68          | PUMX2           | 15          | TLVH431NQDBZR | 33          |
| PTVS18VP1UTP | 69                | PTVS45VS1UR   | 68                | PTVS8V5S1UTR | 68          | PUMZ1           | 15          | XC7SET02      | 160         |
| PTVS18VS1UR  | 68                | PTVS45VS1UTR  | 68                | PTVS9V0P1UP  | 69          | PUMZ2           | 15          | XC7SET04      | 137         |
| PTVS18VS1UTR | 68                | PTVS48VP1UP   | 69                | PTVS9V0P1UTP | 69          | PUSB2X4D        | 54, 63, 64  | XC7SET08      | 156         |
| PTVS18VU1UPA | 67                | PTVS48VP1UTP  | 69                | PTVS9V0S1UR  | 68          | PUSB2X4Y        | 54, 63, 64  | XC7SET125     | 137         |
| PTVS18VZ1USK | 67                | PTVS48VS1UR   | 68                | PTVS9V0S1UTR | 68          | PUSB3AB4        | 54, 55, 56  | XC7SET14      | 137, 140    |
| PTVS20VP1UP  | 69                | PTVS48VS1UTR  | 68                | PUMB1        | 32          | PUSB3AB6        | 54, 56, 66  | XC7SET32      | 161         |
| PTVS20VP1UTP | 69                | PTVS4V5D1BL   | 58, 61, 63, 67    | PUMB10       | 32          | PUSB3F96        | 54, 55      | XC7SET86      | 158         |
| PTVS20VS1UR  | 68                | PTVS51VP1UP   | 69                | PUMB11       | 32          | PUSB3F97        | 54          | XC7SH02       | 160         |
| PTVS20VS1UTR | 68                | PTVS51VP1UTP  | 69                | PUMB13       | 32          | PUSB3F99        | 54          | XC7SH04       | 137         |
| PTVS20VU1UPA | 67                | PTVS51VS1UR   | 68                | PUMB14       | 32          | PUSB3FA0        | 54          | XC7SH08       | 156         |
| PTVS20VZ1USK | 67                | PTVS51VS1UTR  | 68                | PUMB15       | 32          | PUSB3FA1        | 54          | XC7SH125      | 137         |
| PTVS22VP1UP  | 69                | PTVS54VP1UP   | 69                | PUMB16       | 32          | PUSB3FA2        | 54          | XC7SH14       | 137, 140    |
| PTVS22VP1UTP | 69                | PTVS54VP1UTP  | 69                | PUMB17       | 32          | PUSB3FR4        | 54, 55, 56  | XC7SH32       | 161         |
| PTVS22VS1UR  | 68                | PTVS54VS1UR   | 68                | PUMB18       | 32          | PUSB3FR6        | 54, 56, 66  | XC7SH86       | 158         |
| PTVS22VS1UTR | 68                | PTVS54VS1UTR  | 68                | PUMB19       | 32          | PUSB3TB6        | 54, 66      | XC7SHU04      | 137         |
| PTVS22VU1UPA | 67                | PTVS58VP1UP   | 69                | PUMB2        | 32          | PUSBM12VX4-TL   | 64          | XC7WH126      | 137         |
| PTVS22VZ1USK | 67                | PTVS58VP1UTP  | 69                | PUMB20       | 32          | PUSBM5V5X4-TL   | 64          | XC7WH14       | 137, 140    |
| PTVS24VP1UP  | 69                | PTVS58VS1UR   | 68                | PUMB24       | 32          | PXT2222A        | 16          | XC7WT14       | 137, 140    |
| PTVS24VP1UTP | 69                | PTVS58VS1UTR  | 68                | PUMB3        | 32          | PXT2907A        | 16          |               |             |
| PTVS24VS1UR  | 68                | PTVS5V0P1UP   | 69                | PUMB30       | 32          | PXT4401         | 16          |               |             |
| PTVS24VS1UTR | 68                | PTVS5V0P1UTP  | 69                | PUMB4        | 32          | PXT4403         | 16          |               |             |
| PTVS24VU1UPA | 67                | PTVS5V0S1UR   | 68                | PUMB9        | 32          | PXTA14          | 20          |               |             |
| PTVS26VP1UP  | 69                | PTVS5V0S1UTR  | 68                | PUMD10       | 32          | PXTA42          | 18          |               |             |
| PTVS26VP1UTP | 69                | PTVS5V0Z1USK  | 67                | PUMD12       | 32          | PXTA92          | 18          |               |             |
| PTVS26VS1UR  | 68                | PTVS5V0Z1USKP | 67                | PUMD13       | 32          | PZT2222A        | 16          |               |             |
| PTVS26VS1UTR | 68                | PTVS5V5D1BL   | 9, 58, 61, 63, 67 | PUMD14       | 32          | PZT2907A        | 16          |               |             |
| PTVS26VU1UPA | 67                | PTVS60VP1UP   | 69                | PUMD15       | 32          | PZT4401         | 16          |               |             |
| PTVS26VZ1USK | 67                | PTVS60VP1UTP  | 69                | PUMD16       | 32          | PZT4403         | 16          |               |             |
| PTVS28VP1UP  | 69                | PTVS60VS1UR   | 68                | PUMD17       | 32          | PZTA14          | 20          |               |             |
| PTVS28VP1UTP | 69                | PTVS60VS1UTR  | 68                | PUMD18       | 32          | PZTA42          | 18          |               |             |
| PTVS28VS1UR  | 68                | PTVS64VP1UP   | 69                | PUMD19       | 32          | PZTA44          | 18          |               |             |
| PTVS28VS1UTR | 68                | PTVS64VP1UTP  | 69                | PUMD2        | 32          | PZTA92          | 18          |               |             |
| PTVS30VP1UP  | 69                | PTVS64VS1UR   | 68                | PUMD20       | 32          | PZU10DB2 series | 36          |               |             |
| PTVS30VP1UTP | 69                | PTVS64VS1UTR  | 68                | PUMD24       | 32          | PZUxB series    | 36          |               |             |
| PTVS30VS1UR  | 68                | PTVS6V0P1UP   | 69                | PUMD3        | 32          | PZUxBA series   | 36          |               |             |
| PTVS30VS1UTR | 68                | PTVS6V0P1UTP  | 69                | PUMD30       | 32          | PZUxBL series   | 36          |               |             |
| PTVS33VP1UP  | 69                | PTVS6V0S1UR   | 68                | PUMD4        | 32          | TDZxJ series    | 36          |               |             |
| PTVS33VP1UTP | 69                | PTVS6V0S1UTR  | 68                | PUMD48       | 32          | TL431ACDBZR     | 33          |               |             |
| PTVS33VS1UR  | 68                | PTVS6V0S1UTR  | 68                | PUMD6        | 32          | TL431AFDT       | 33          |               |             |
| PTVS33VS1UTR | 68                | PTVS6V5P1UP   | 69                | PUMD9        | 32          | TL431AIDBZR     | 33          |               |             |
| PTVS36VP1UP  | 69                | PTVS6V5P1UTP  | 69                | PUMH1        | 32          | TL431AMFDT      | 33          |               |             |
| PTVS36VP1UTP | 69                | PTVS6V5S1UR   | 68                | PUMH10       | 32          | TL431AQDBZR     | 33          |               |             |
| PTVS36VS1UR  | 68                | PTVS6V5S1UTR  | 68                | PUMH11       | 32          | TL431BCDBZR     | 33          |               |             |
| PTVS36VS1UTR | 68                | PTVS7V0P1UP   | 69                | PUMH13       | 32          | TL431BFDT       | 33          |               |             |
| PTVS3V3D1BAL | 9, 58, 61, 63, 67 | PTVS7V0P1UTP  | 69                | PUMH14       | 32          | TL431BIDBZR     | 33          |               |             |
| PTVS3V3P1UP  | 69                | PTVS7V0S1UR   | 68                | PUMH15       | 32          | TL431BMFDT      | 33          |               |             |
| PTVS3V3P1UTP | 69                | PTVS7V0S1UTR  | 68                | PUMH16       | 32          | TL431BQDBZR     | 33          |               |             |
| PTVS3V3S1UR  | 68                | PTVS7V5P1UP   | 69                | PUMH17       | 32          | TL431CDBZR      | 33          |               |             |
| PTVS3V3S1UTR | 68                | PTVS7V5P1UTP  | 69                | PUMH18       | 32          | TL431FDT        | 33          |               |             |
| PTVS40VP1UP  | 69                | PTVS7V5S1UR   | 68                | PUMH19       | 32          | TL431IDBZR      | 33          |               |             |
| PTVS40VP1UTP | 69                | PTVS7V5S1UTR  | 68                | PUMH2        | 32          | TL431MFDT       | 33          |               |             |
| PTVS40VS1UR  | 68                | PTVS7V5U1UPA  | 67                | PUMH20       | 32          | TL431QDBZR      | 33          |               |             |
| PTVS40VS1UTR | 68                | PTVS7V5Z1USK  | 67                | PUMH24       | 32          | TLVH431NACDBZR  | 33          |               |             |
| PTVS43VP1UP  | 69                | PTVS8V0P1UP   | 69                | PUMH30       | 32          | TLVH431NAIDBZR  | 33          |               |             |
| PTVS43VP1UTP | 69                | PTVS8V0P1UTP  | 69                | PUMH4        | 32          | TLVH431NAMQDBZR | 33          |               |             |
| PTVS43VS1UR  | 68                | PTVS8V0S1UR   | 68                | PUMH7        | 32          | TLVH431NAQDBZR  | 33          |               |             |
| PTVS43VS1UTR | 68                | PTVS8V0S1UTR  | 68                | PUMH9        | 32          | TLVH431NCDBZR   | 33          |               |             |
| PTVS45VP1UP  | 69                | PTVS8V5P1UP   | 69                | PUMT1        | 15          | TLVH431NIDBZR   | 33          |               |             |
|              |                   | PTVS8V5P1UTP  | 69                | PUMX1        | 15          | TLVH431NMQDBZR  | 33          |               |             |











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