

Product Brief

TLF35584

System-Supply for Safety-Relevant Applications



The TLF35584 is a multiple output system-supply for safety-relevant applications supplying 5 V or 3.3 V μ C, transceivers, and sensors by an efficient and flexible pre-/post-regulator concept over a wide input voltage range. The wide switching frequency range allows optimization in respect of efficiency and usage of small filter components. A dedicated reference-regulator supplies the ADC independent from μ C-load steps and acts as tracking-source for the 2 independent sensor-supplies. The flexible state machine, wake-up concept including timer, and the stand-by-regulator favors the usage in numerous applications.

Multiple safety features enable easy realization of ASIL-D together with various μ Cs. The TLF35584 is coming in small VQFN-48 (QV-version) capable for automated optical inspection and additionally in LQFP-64 (QK-version), both packages thermally enhanced.

Key Features

- Pre-/post-regulator concept:
 - boost & buck / LDOs & trackers for
 - μ C (main, ADC/reference, StBy)
 - Transceivers
 - Sensors
- Integration of functional safety (features supporting ASIL-D)
 - UV/OV-monitoring
 - Flexible watchdogs
 - Error-monitoring
 - Safe state controller with 2 outputs
 - BIST

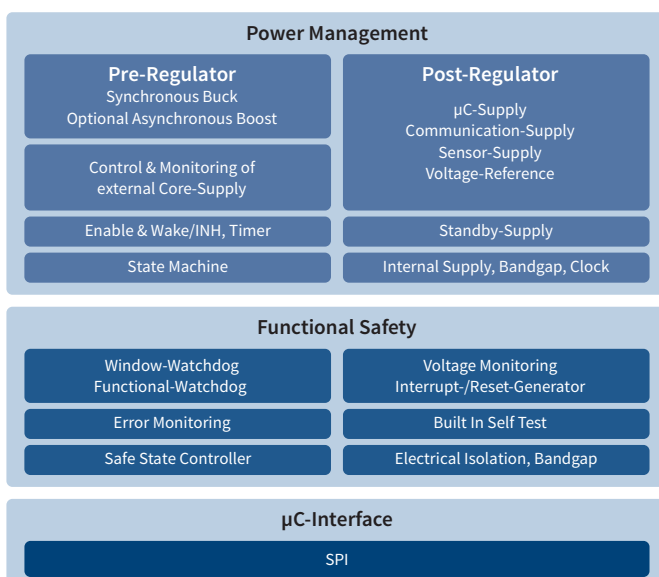
Key Benefits

- Efficiency and flexibility
- Enables ASIL-D on system level
- Wide temperature range

Applications

- Safety: EPS, braking, suspension, chassis-controller, ADAS-fusion-box
- Powertrain: EMS, transmission
- EDT: inverter, BMS, DC/DC, charger

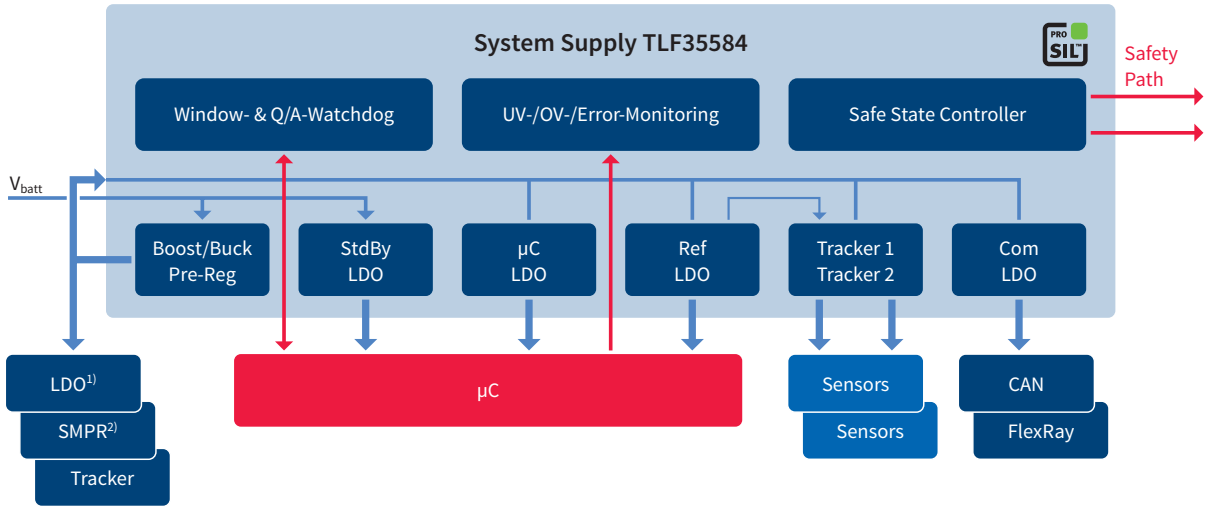
Functional Block Diagram



TLF35584

System-Supply for Safety-Relevant Applications

Application Diagram



- 1) LDO: Low-Dropout Linear Regulator
- 2) SMPR: Switch-Mode Post-Regulator

Functional Safety

The device is developed acc. ISO 26262. The applied processes, safety assessment, and provided documentation (Safety Manual, Safety Analysis Summary Report) are reducing efforts and time for the safety assessment on ECU-level.

Required safety integrity functions for ASIL-D are already implemented: UV/OV-monitoring of all rails with independent reference, detecting dependent failures by flexible watchdog-concept, monitoring of µC's safety management unit, and a safe state controller

providing secondary safety paths. A built-in-self-test is ensuring the proper function of the relevant safety features. All features are perfectly aligned to the Infineon's AURIX™-requirements, but are extended to support other µCs as well.

All safety-relevant configurations are protected and can only be changed by special, successfully performed unlock/lock-sequence.

Product Summary

Type	Description	Ordering Code
TLF35584QV VS1/VS2	PG-VQFN-48; 5 V/3.3 V for µC-supply	SP001096170/SP001096172
TLF35584QK VS1/VS2	PG-LQFP-64; 5 V/3.3 V for µC-supply	SP001273504/SP001273506

Published by
Infineon Technologies AG
85579 Neubiberg, Germany

© 2015 Infineon Technologies AG.
All Rights Reserved.

Visit us:
www.infineon.com

Please note!

THIS DOCUMENT IS FOR INFORMATION PURPOSES ONLY AND ANY INFORMATION GIVEN HEREIN SHALL IN NO EVENT BE REGARDED AS A WARRANTY, GUARANTEE OR DESCRIPTION OF ANY FUNCTIONALITY, CONDITIONS AND/OR QUALITY OF OUR PRODUCTS OR ANY SUITABILITY FOR A PARTICULAR PURPOSE. WITH REGARD TO THE TECHNICAL SPECIFICATIONS OF OUR PRODUCTS, WE KINDLY ASK YOU TO REFER TO THE RELEVANT PRODUCT DATA SHEETS PROVIDED BY US. OUR CUSTOMERS AND THEIR TECHNICAL DEPARTMENTS ARE REQUIRED TO EVALUATE THE SUITABILITY OF OUR PRODUCTS FOR THE INTENDED APPLICATION.

WE RESERVE THE RIGHT TO CHANGE THIS DOCUMENT AND/OR THE INFORMATION GIVEN HEREIN AT ANY TIME.

Additional information

For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices please contact your nearest Infineon Technologies office (www.infineon.com).

Warnings

Due to technical requirements, our products may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by us in a written document signed by authorized representatives of Infineon Technologies, our products may not be used in any life endangering applications, including but not limited to medical, nuclear, military, life critical or any other applications where a failure of the product or any consequences of the use thereof can result in personal injury.

Order Number: B124-I0110-V1-7600-EU-EC
Date: 03 / 2015