P600A, P600B, P600D, P600G, P600J, P600K, P600M



Vishay General Semiconductor

RoHS

General Purpose Plastic Rectifier



P600

PRIMARY CHARACTERISTICS								
I _{F(AV)} 6.0 A								
V _{RRM}	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V							
I _{FSM}	400 A							
V _F	0.9 V, 1.0 V							
I _R	5.0 µA							
T _J max.	150 °C							
Package	P600							
Diode variations	Single die							

FEATURES

- Low forward voltage drop
- Low leakage current
- High forward current capability
- · High forward surge capability
- COMPLIANT Solder dip 275 °C max. 10 s, per JESD 22-B106
- · Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes application.

MECHANICAL DATA

Case: P600, void-free molded epoxy body Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: Color band denotes cathode end

MAXIMUM RATINGS ($T_A = 25 \text{ °C}$ unless otherwise noted)										
PARAMETER		SYMBOL	P600A	P600B	P600D	P600G	P600J	P600K	P600M	UNIT
Max. repetitive peak	reverse voltage	V _{RRM}	50	100	200	400	600	800	1000	V
Max. RMS voltage	Max. RMS voltage		35	70	140	280	420	560	700	V
Max. DC blocking voltage		V _{DC}	50	100	200	400	600	800	1000	V
Max. average forward rectified	T _A = 60 °C, 0.375" (9.5 mm) lead length (fig. 1)	laure.	6.0							A
current at $T_L = 60 \text{ °C}, 0.125^{"} (3.18 \text{ mm})$ lead length (fig. 2)		I _{F(AV)}				22				~
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load		I _{FSM}	400							А
Operating junction ar	T _J , T _{STG}	- 50 to + 150							°C	

ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)											
PARAMETER	TEST CONDITIONS		SYMBOL	P600A	P600B	P600D	P600G	P600J	P600K	P600M	UNIT
Max. instantaneous forward			V _F	0.90							V
voltage				1.30							
Max. DC reverse current at		T _A = 25 °C		5.0							μA
rated DC blocking voltage	rated DC blocking voltage T _A =100 °C		I _R	1.0							mA
Typical reverse recovery time	$I_F = 0.5$ $I_{rr} = 0.2$	A, I _R = 1.0 A, 5 A	t _{rr}	2.5							μs
Typical junction capacitance	4.0 V, 1	MHz	CJ	150							pF

ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

Revision: 13-Aug-13 1 For technical questions within your region: DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT P600A, P600B, P600D, P600G, P600J, P600K, P600M

www.vishay.com

Vishay General Semiconductor

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)									
PARAMETER	SYMBOL P600A P600B P600D P600G P600J P600K P600M UNIT							UNIT	
Typical thermal resistance	Rθ _{JA} ⁽¹⁾	20							°C/W
Typical thermal resistance	$R\theta_{JL}$ ⁽¹⁾	4.0							0/11

Note

(1) Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5 mm) lead length, PCB mounted with 1.1" x 1.1" (30 mm x 30 mm) copper pads

ORDERING INFORMATION (Example)									
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE					
P600J-E3/54	2.1	54	800	13" diameter paper tape and reel					
P600J-E3/73	2.1	73	300	Ammo pack packaging					

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

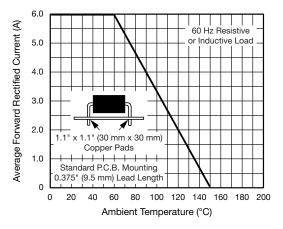


Fig. 1 - Max. Forward Current Derating Curve

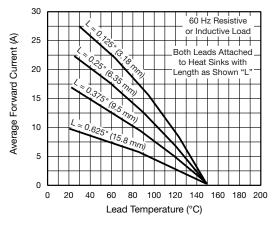


Fig. 2 - Max. Non-repetitive Forward Surge Current

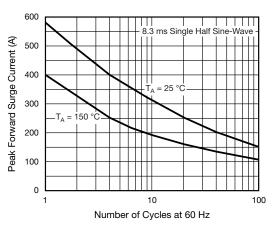


Fig. 3 - Typical Instantaneous Forward Characteristics

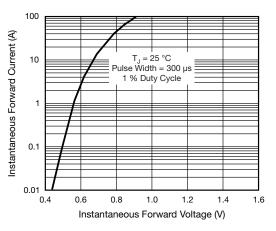


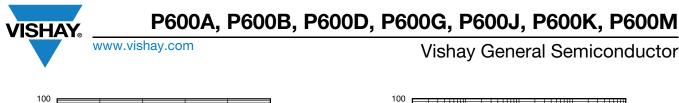
Fig. 4 - Typical Instantaneous Forward Characteristics

Revision: 13-Aug-13

2

Document Number: 88692

For technical questions within your region: <u>DiodesAmericas@vishay.com</u>, <u>DiodesAsia@vishay.com</u>, <u>DiodesEurope@vishay.com</u> THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT <u>www.vishay.com/doc?91000</u>



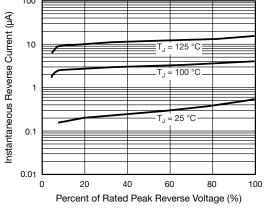
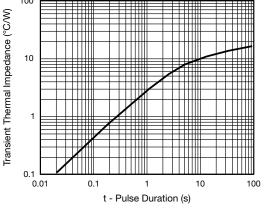
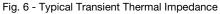
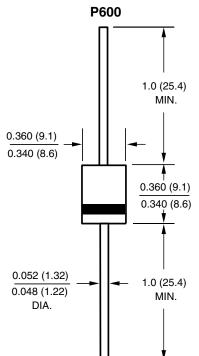


Fig. 5 - Typical Reverse Characteristics











Vishay

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.