

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

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Vishay General Semiconductor

General Purpose Plastic Rectifier



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
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: For definitions of compliance please see <u>www.vishay.com/doc?99912</u>



RoHS

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 °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		V_{RMS}	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)		6.0							Α
current at	T _L = 60 °C, 0.125" (3.18 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							Α
Operating junction ar	T _J , T _{STG}	- 50 to + 150							°C	

ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)											
PARAMETER	TEST CONDITIONS		SYMBOL	P600A	P600B	P600D	P600G	P600J	P600K	P600M	UNIT
Max. instantaneous forward	6.0 A		V _F	0.90						1.0	V
voltage	100 A		٧F	1.30						1.4	7 ' I
Max. DC reverse current at	DC reverse current at $T_A = 25 ^{\circ}\text{C}$		1-	5.0							μA
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	C _J 150						pF		

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THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER SYMBOL P600A P600B P600G P600J P600K P600M UNIT								UNIT	
Typical thermal resistance	Rθ _{JA} ⁽¹⁾	20							°C/W
Typical trieffial resistance	Rθ _{JL} ⁽¹⁾				4.0				C/VV

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)

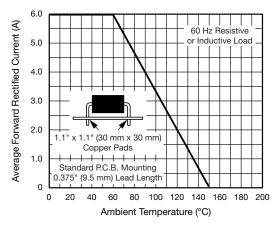


Fig. 1 - Max. Forward Current Derating Curve

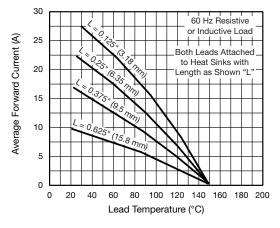


Fig. 2 - Max. Non-repetitive Forward Surge Current

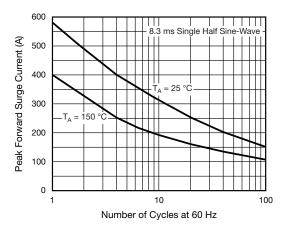


Fig. 3 - Typical Instantaneous Forward Characteristics

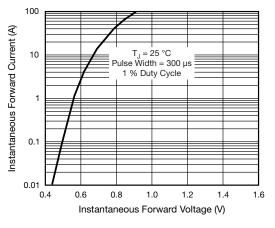


Fig. 4 - Typical Instantaneous Forward Characteristics

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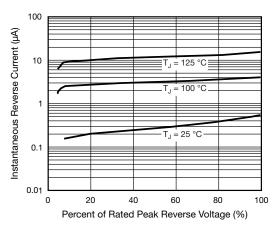
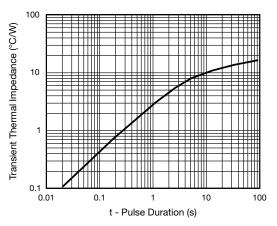


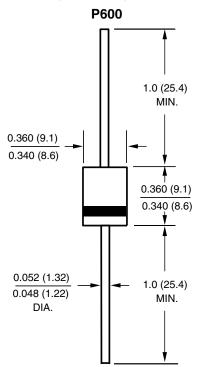
Fig. 5 - Typical Reverse Characteristics



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Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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