



General Purpose Plastic Rectifier



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 www.vishay.com/doc?99912



RoHS COMPLIANT

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

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 μ A
T_J max.	150 °C
Package	P600
Diode variations	Single die

MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$ 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	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 current at	$I_{F(AV)}$	$T_A = 60\text{ }^\circ\text{C}$, 0.375" (9.5 mm) lead length (fig. 1)						6.0		A
		$T_L = 60\text{ }^\circ\text{C}$, 0.125" (3.18 mm) lead length (fig. 2)						22		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	400						A		
Operating junction and storage temperature range	T_J, T_{STG}	- 50 to + 150						°C		

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)										
PARAMETER	TEST CONDITIONS	SYMBOL	P600A	P600B	P600D	P600G	P600J	P600K	P600M	UNIT
Max. instantaneous forward voltage	6.0 A	V_F	0.90						1.0	V
	100 A		1.30						1.4	
Max. DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 100\text{ }^\circ\text{C}$	I_R	5.0						μ A	
			1.0						mA	
Typical reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $t_{rr} = 0.25\text{ A}$	t_{rr}	2.5						μ s	
Typical junction capacitance	4.0 V, 1 MHz	C_J	150						pF	



THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	P600A	P600B	P600D	P600G	P600J	P600K	P600M	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$	20							$^\circ\text{C/W}$
	$R_{\theta JL}^{(1)}$	4.0							

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 ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

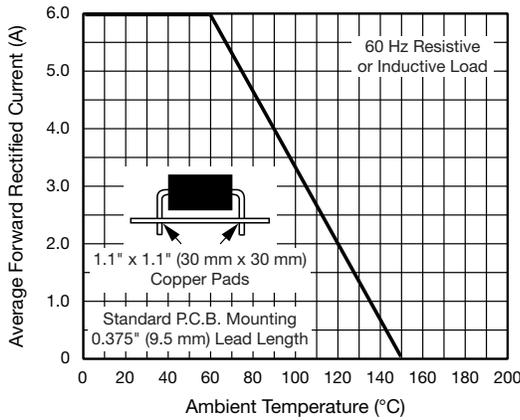


Fig. 1 - Max. Forward Current Derating Curve

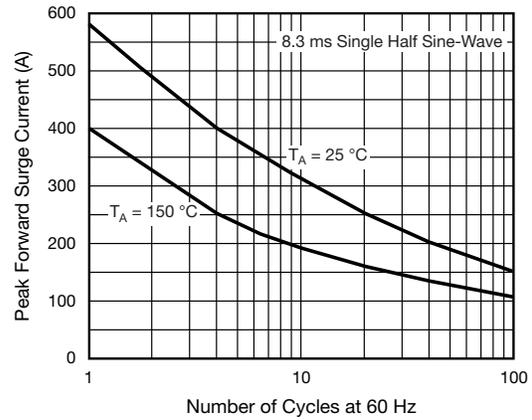


Fig. 3 - Typical Instantaneous Forward Characteristics

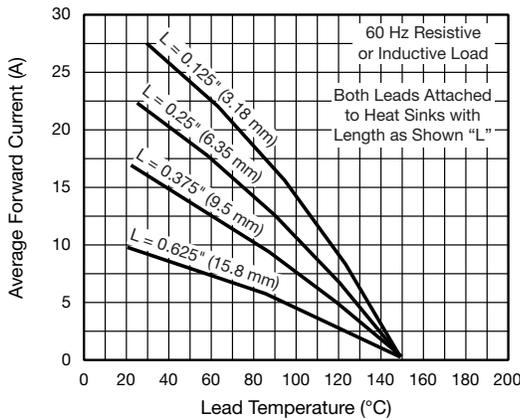


Fig. 2 - Max. Non-repetitive Forward Surge Current

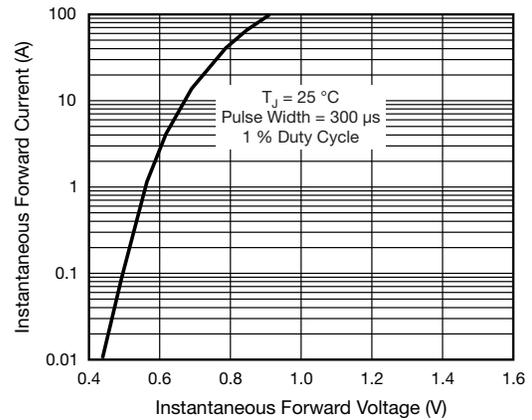


Fig. 4 - Typical Instantaneous Forward Characteristics

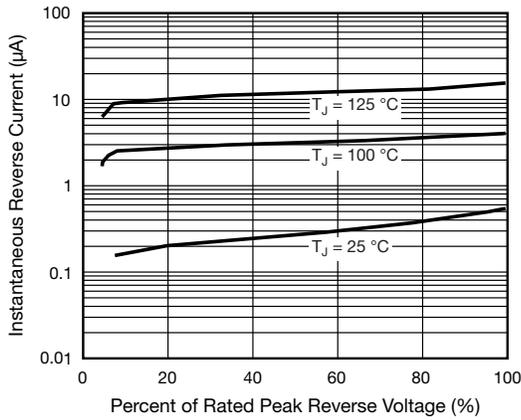


Fig. 5 - Typical Reverse Characteristics

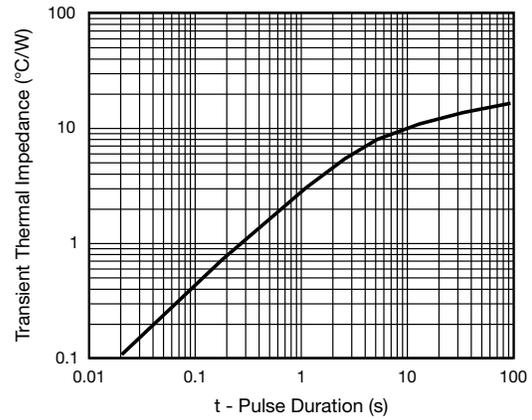
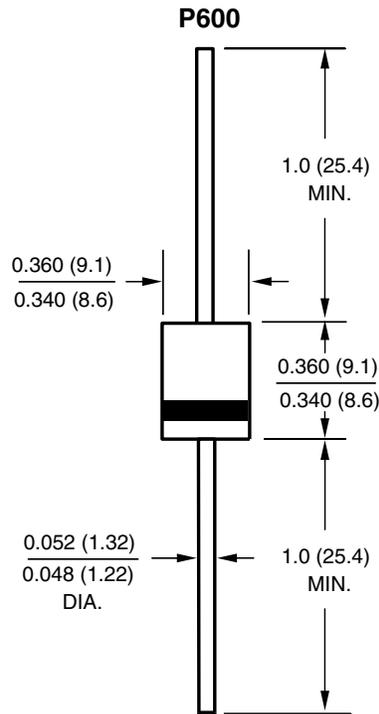


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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