



## General Purpose Plastic Rectifier

### Major Ratings and Characteristics

$I_{F(AV)}$	6.0 A
$V_{RRM}$	50 V to 1000 V
$I_{FSM}$	400 A
$V_F$	0.9 V, 1.0 V
$I_R$	5.0 $\mu$ A
$T_j$ max.	150 °C



Case Style P600

### Features

- Low forward voltage drop
- Low leakage current
- High forward current capability
- High forward surge capability
- Solder Dip 260 °C, 40 seconds



### Mechanical Data

**Case:** P600, void-free molded epoxy body

Epoxy meets UL-94V-0 Flammability rating

**Terminals:** Matte tin plated (E3 Suffix) leads, solderable per J-STD-002B and JESD22-B102D

**Polarity:** Color band denotes cathode end

### Typical Applications

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

(Note: These devices are not Q101 qualified. Therefore, the devices specified in this datasheet have not been designed for use in automotive or Hi-Rel applications.)

### Maximum Ratings

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

Parameter	Symbol	P600A	P600B	P600D	P600G	P600J	P600K	P600M	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum average forward rectified current at $T_A = 60\text{ °C}$ , 0.375" (9.5 mm) lead length (Fig. 1) $T_L = 60\text{ °C}$ , 0.125" (3.18 mm) lead length (Fig. 2)	$I_{F(AV)}$	6.0 22							A
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

# P600A thru P600M

Vishay General Semiconductor



## Electrical Characteristics

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

Parameter	Test condition	Symbol	P600A	P600B	P600D	P600G	P600J	P600K	P600M	Unit
Maximum instantaneous forward voltage at:	6.0 A 100 A	$V_F$	0.90 1.30						1.0 1.4	V
Maximum 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 1.0							$\mu\text{A}$ mA
Typical reverse recovery time	at $I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$	$t_{rr}$	2.5							$\mu\text{s}$
Typical junction capacitance	at 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 <sup>(1)</sup>	$R_{\theta JA}$ $R_{\theta JL}$	20 4.0							$^\circ\text{C/W}$

Notes:

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

## Ratings and Characteristics Curves

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

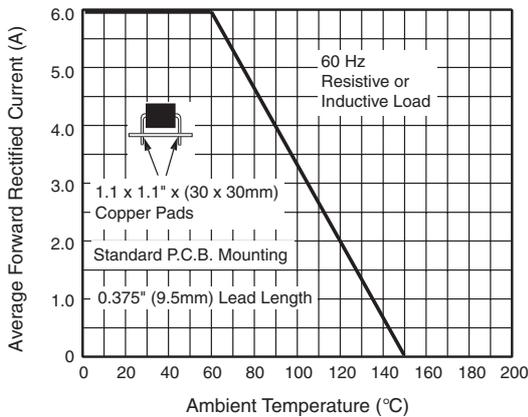


Figure 1. Maximum Forward Current Derating Curve

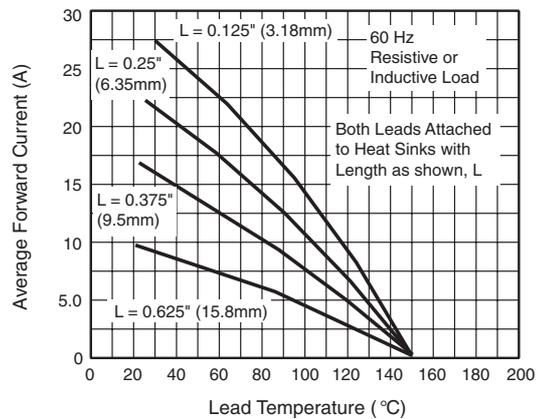


Figure 2. Maximum Non-repetitive Forward Surge Current

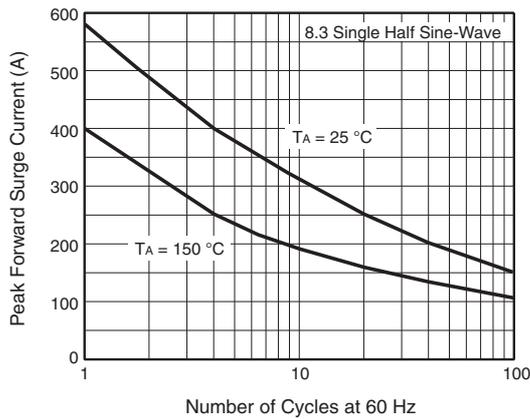


Figure 3. Typical Instantaneous Forward Characteristics

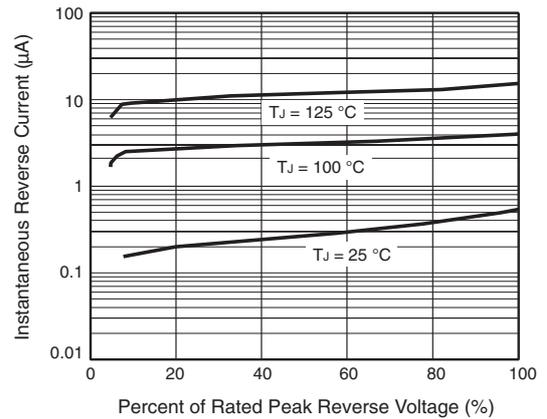


Figure 5. Typical Reverse Characteristics

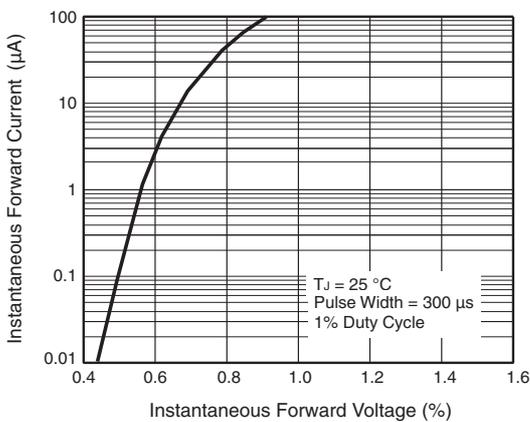


Figure 4. Typical Instantaneous Forward Characteristics

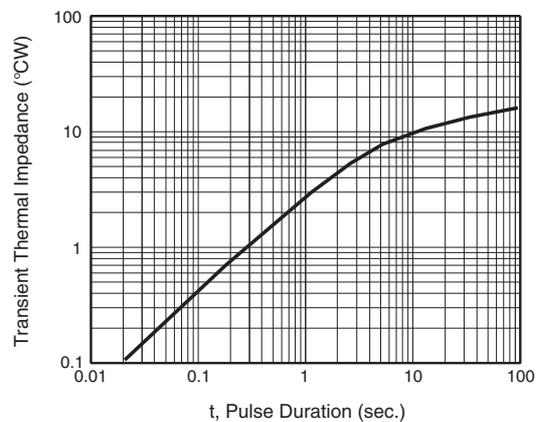
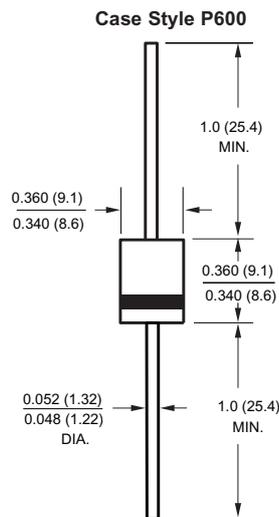


Figure 6. Typical Transient Thermal Impedance

### Package outline dimensions in inches (millimeters)





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