

## General Purpose Plastic Rectifier



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
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



### 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.)

### 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

### 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

### MAXIMUM RATINGS ( $T_A = 25$ °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 $T_A = 60$ °C, 0.375" (9.5 mm) lead length (Fig. 1) $T_L = 60$ °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

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)										
PARAMETER	TEST CONDITIONS	SYMBOL	P600A	P600B	P600D	P600G	P600J	P600K	P600M	UNIT
Maximum instantaneous forward voltage	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	

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ 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				$^\circ\text{C/W}$				

**Note:**

(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

<b>ORDERING INFORMATION</b>				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
P600J-E3/54	2.1	54	800	13" Diameter Paper Tape & 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)

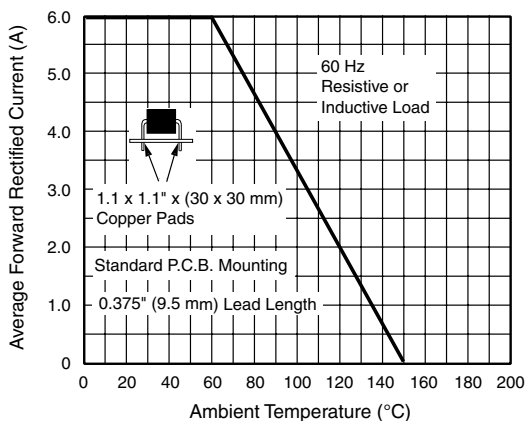


Figure 1. Maximum Forward Current Derating Curve

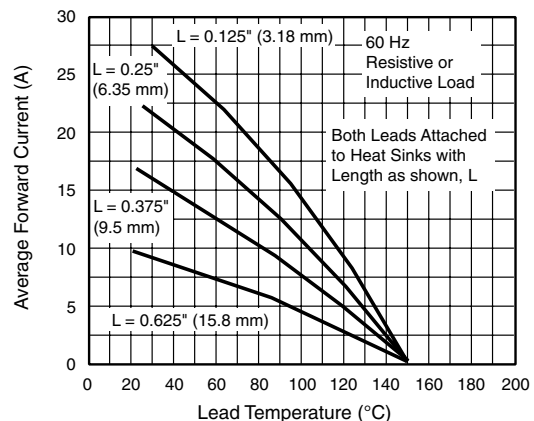


Figure 2. Maximum Non-repetitive Forward Surge Current

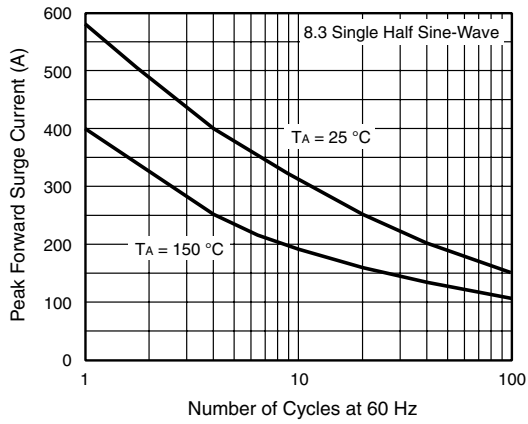


Figure 3. Typical Instantaneous Forward Characteristics

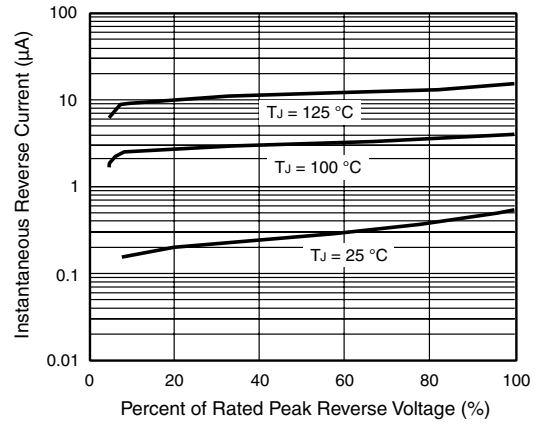


Figure 5. Typical Reverse Characteristics

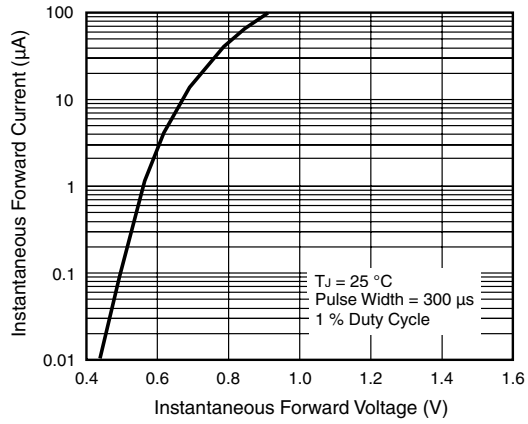


Figure 4. Typical Instantaneous Forward Characteristics

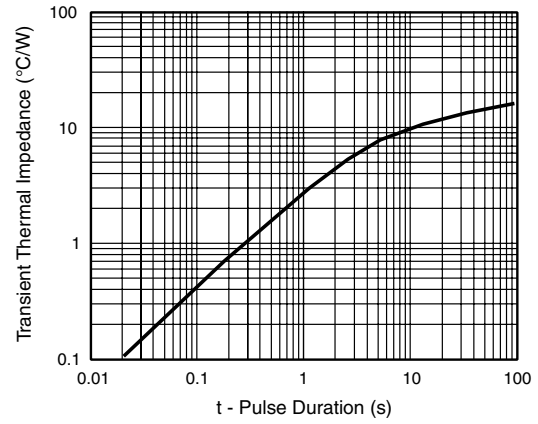
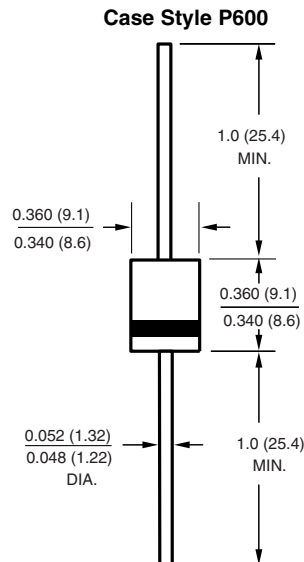


Figure 6. Typical Transient Thermal Impedance

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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