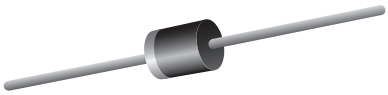
Fast Switching Plastic Rectifier



P600

FEATURES

- Fast switching for high efficiency
- Low forward voltage drop
- Low leakage current
- High forward current operation
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

RoHS COMPLIANT

TYPICAL APPLICATIONS

For use in fast switching rectification of power supply, inverters, converters and freewheeling diodes for consumer and telecommunication.

Note

- These devices are not AEC-Q101 qualified.

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 to 800 V
I_{FSM}	300 A
t_{rr}	100 ns, 150 ns, 200 ns
V_F	1.3 V
I_R	10 µA
T_J max.	125 °C

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	SRP600A	SRP600B	SRP600D	SRP600G	SRP600J	SRP600K	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at T_A = 55 °C	$I_{F(AV)}$	6.0						A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	300						A
Operating junction temperature range	T_J	- 50 to + 125						°C
Storage temperature range	T_{STG}	- 50 to + 150						°C

For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)										
PARAMETER	TEST CONDITIONS		SYMBOL	SRP600A	SRP600B	SRP600D	SRP600G	SRP600J	SRP600K	UNIT
Maximum instantaneous forward voltage	6.0 A		V_F	1.3						V
Maximum DC reverse current at rated DC blocking voltage		T_A = 25 °C	I_R	10						μA
		T_A = 100 °C		1.0						mA
Maximum reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	100		150		200		ns

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	SRP600A	SRP600B	SRP600D	SRP600G	SRP600J	SRP600K	UNIT
Typical thermal resistance	$R_{\theta JA}$ (1)	10						°C/W

Note

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length with both leads equally heat sink

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SRP600J-E3/54	2.1	54	800	13" diameter paper tape and reel
SRP600J-E3/73	2.1	73	300	Ammo pack packaging

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

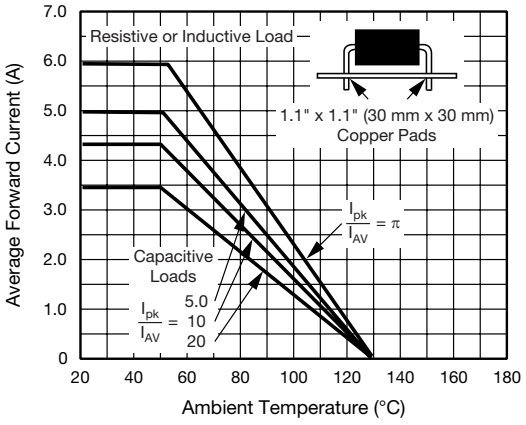


Fig. 1 - Forward Current Derating Curves

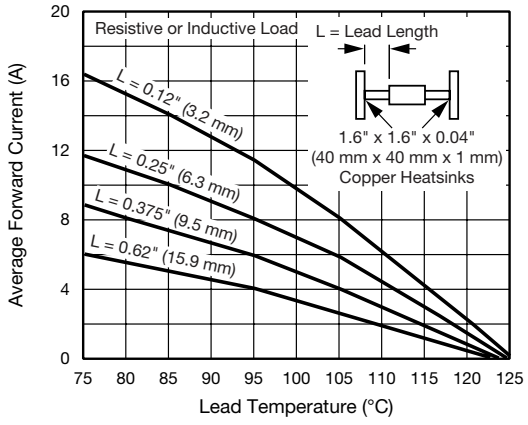


Fig. 2 - Forward Current Derating Curve

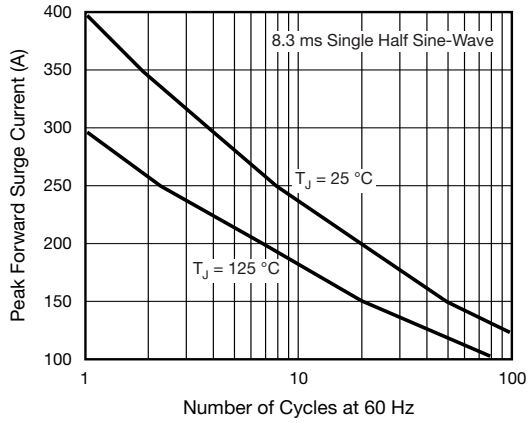


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

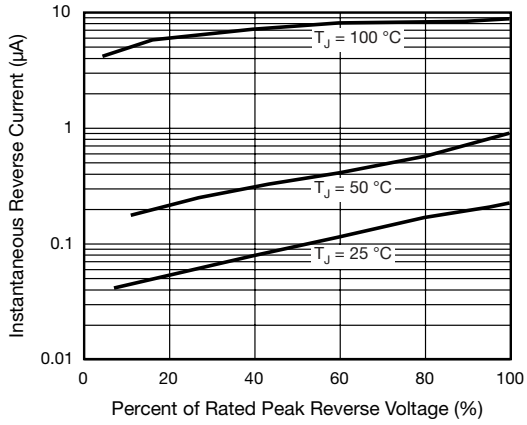


Fig. 5 - Typical Reverse Characteristics

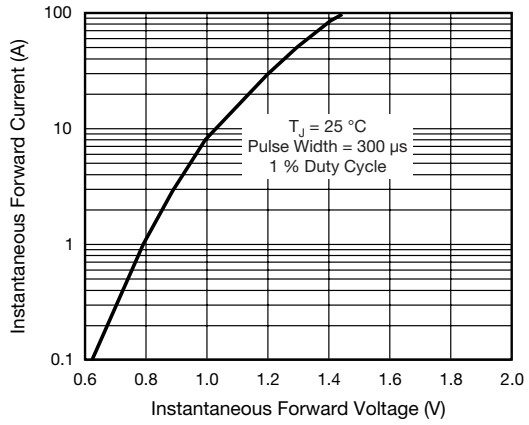


Fig. 4 - Typical Instantaneous Forward Characteristics

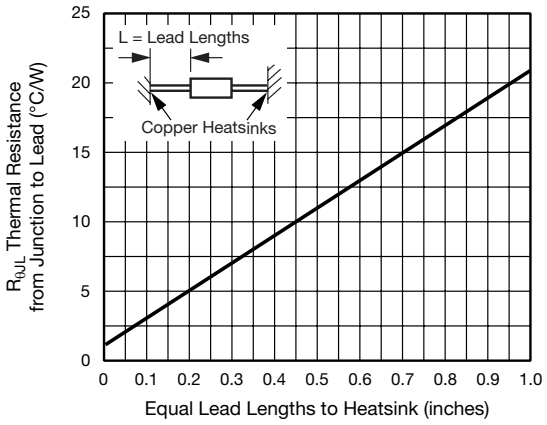
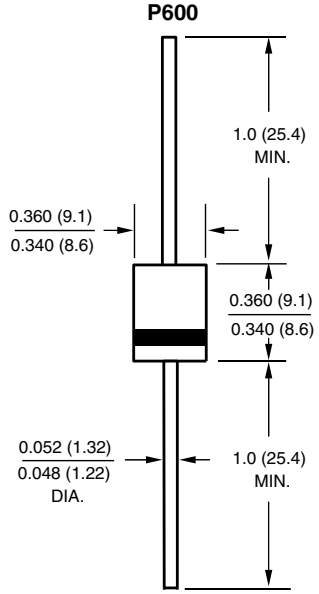


Fig. 6 - Typical Thermal Resistance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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