



### 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
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



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, 100 V, 200 V, 400 V, 600 V, 800 V
$I_{FSM}$	300 A
$t_{rr}$	100 ns, 150 ns, 200 ns
$V_F$	1.3 V
$I_R$	10 $\mu$ A
$T_J$ max.	125 °C
Package	P600
Diode variation	Single die

MAXIMUM RATINGS ( $T_A = 25\text{ }^\circ\text{C}$ 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 $T_A = 55\text{ }^\circ\text{C}$	$I_{F(AV)}$	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						$^\circ\text{C}$
Storage temperature range	$T_{STG}$	- 50 to + 150						$^\circ\text{C}$



# SRP600A, SRP600B, SRP600D, SRP600G, SRP600J, SRP600K

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ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS	SYMBOL	SRP600A	SRP600B	SRP600D	SRP600G	SRP600J	SRP600K	UNIT
Maximum instantaneous forward voltage	6.0 A	V <sub>F</sub>	1.3						V
Maximum DC reverse current at rated DC blocking voltage	T <sub>A</sub> = 25 °C	I <sub>R</sub>	10						μA
			T <sub>A</sub> = 100 °C	1.0					
Maximum reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A	t <sub>rr</sub>	100	150		200			ns

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	SRP600A	SRP600B	SRP600D	SRP600G	SRP600J	SRP600K	UNIT	
Typical thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	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<sub>A</sub> = 25 °C unless otherwise noted)

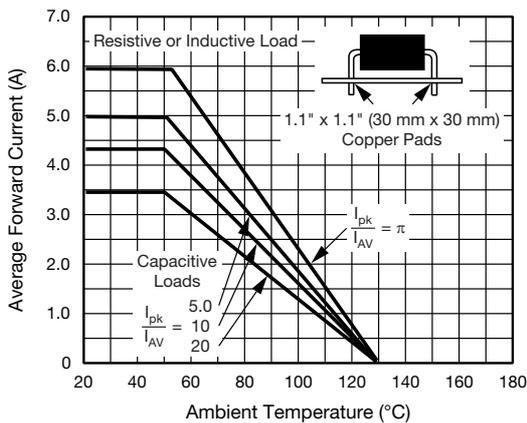


Fig. 1 - Forward Current Derating Curves

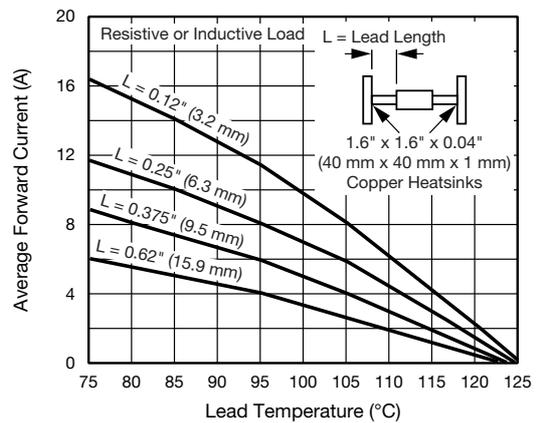


Fig. 2 - Forward Current Derating Curve

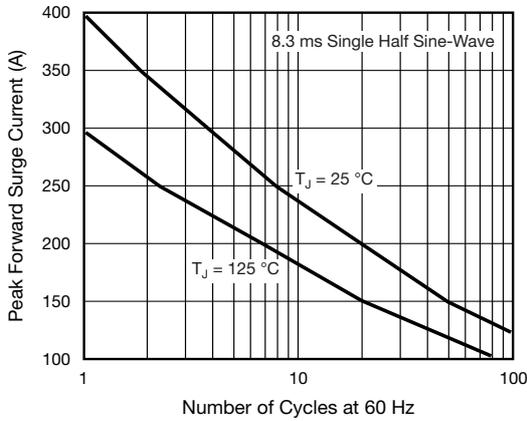


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

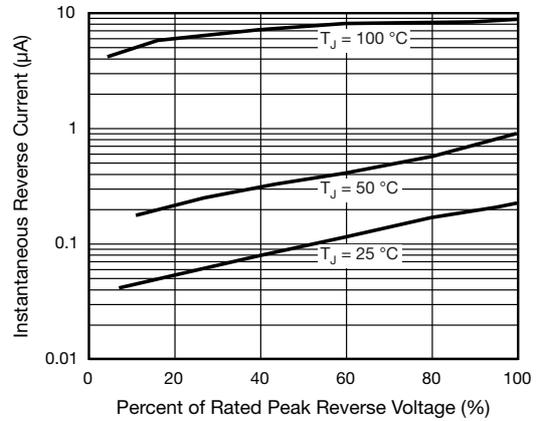


Fig. 5 - Typical Reverse Characteristics

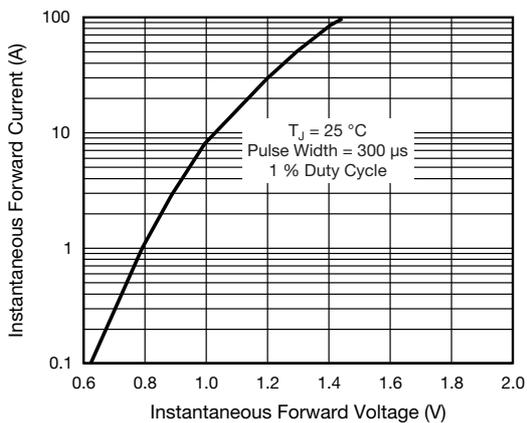


Fig. 4 - Typical Instantaneous Forward Characteristics

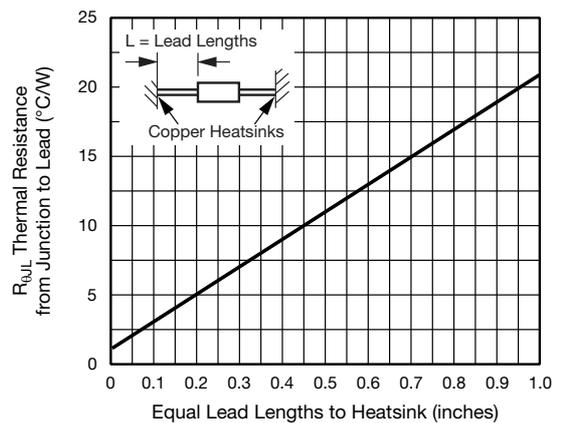
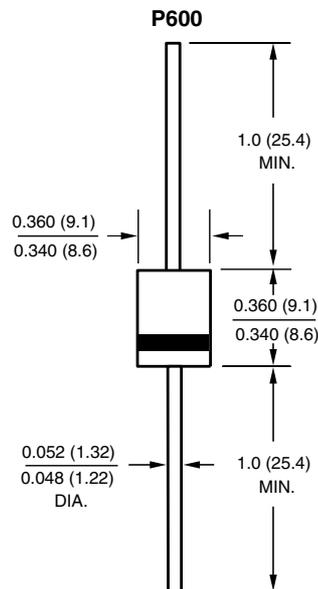


Fig. 6 - Typical Thermal Resistance

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)





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