

## P600A, P600B, P600D, P600G, P600J, P600K, P600M

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Vishay General Semiconductor

# **General Purpose Plastic Rectifier**



PRIMARY CHARACTERISTICS								
I <sub>F(AV)</sub>	6.0 A							
$V_{RRM}$	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V							
I <sub>FSM</sub>	400 A							
V <sub>F</sub>	0.9 V, 1.0 V							
I <sub>R</sub>	5.0 μA							
$T_J$ max.	150 °C							
Package	P600							
Diode variations	Single die							

### **FEATURES**

Low forward voltage drop



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 <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>





RoHS

### 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

MAXIMUM RATINGS (T <sub>A</sub> = 25 °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 <sub>RMS</sub>	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	T <sub>A</sub> = 60 °C, 0.375" (9.5 mm) lead length (fig. 1)	I <sub>F(AV)</sub>	6.0							^
current at	T _ 60 °C 0 105" (2 10 mm)					22				Α
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load		I <sub>FSM</sub>	400							Α
Operating junction ar	T <sub>J</sub> , T <sub>STG</sub>	- 50 to + 150							°C	

ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)											
PARAMETER	TEST CONDITIONS		SYMBOL	P600A	P600B	P600D	P600G	P600J	P600K	P600M	UNIT
Max. instantaneous forward	6.0 A		V	0.90						1.0	V
voltage	100 A		V <sub>F</sub>	1.30						1.4	] ' '
Max. DC reverse current at		T <sub>A</sub> = 25 °C			5.0						μA
rated DC blocking voltage		T <sub>A</sub> =100 °C	I <sub>R</sub>	1.0							mA
Typical reverse recovery time	$I_F = 0.5$ $I_{rr} = 0.2$	A, I <sub>R</sub> = 1.0 A, 5 A	t <sub>rr</sub>	2.5					μs		
Typical junction capacitance	4.0 V, 1	MHz	CJ	150					pF		

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THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER SYMBOL   P600A   P600B   P600G   P600J   P600K   P600M   UNIT									UNIT
Typical thermal resistance	Rθ <sub>JA</sub> <sup>(1)</sup>	20							°C/W
Typical trieffial resistance	Rθ <sub>JL</sub> <sup>(1)</sup>	4.0						C/VV	

#### Note

<sup>(1)</sup> 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<sub>A</sub> = 25 °C unless otherwise noted)

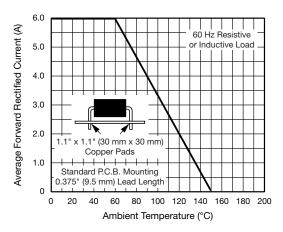


Fig. 1 - Max. Forward Current Derating Curve

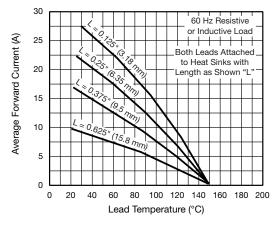


Fig. 2 - Max. Non-repetitive Forward Surge Current

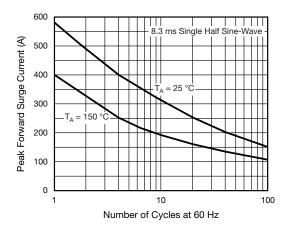


Fig. 3 - Typical Instantaneous Forward Characteristics

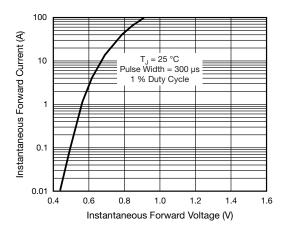


Fig. 4 - Typical Instantaneous Forward Characteristics

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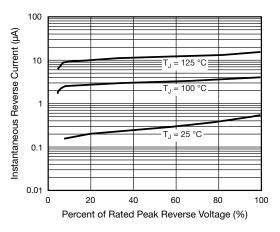
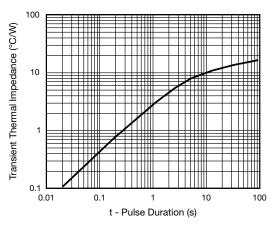


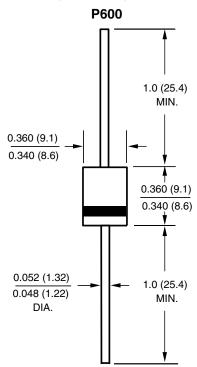
Fig. 5 - Typical Reverse Characteristics



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Fig. 6 - Typical Transient Thermal Impedance

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





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