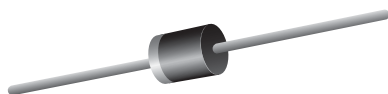




## Glass Passivated Junction Plastic Rectifier



P600

### FEATURES

- Glass passivated chip junction
- Low forward voltage drop
- Low leakage current, typical  $I_R$  less than 0.2  $\mu A$
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- 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 general purpose rectification of power supplies, inverters, converters, and freewheeling diodes application.

### MECHANICAL DATA

**Case:** P600, molded epoxy over passivated junction  
Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade  
Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

**Polarity:** Color band denotes cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	10 A
$V_{RRM}$	200 V, 400 V, 600 V, 800 V, 1000 V
$I_{FSM}$	440 A
$V_F$ at $I_F = 10$ A	1.05 V
$I_R$	5.0 $\mu A$
$T_J$ max.	175 °C
Package	P600
Diode variations	Single die

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)							
PARAMETER	SYMBOL	GPP100D	GPP100G	GPP100J	GPP100K	GPP100M	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	200	400	600	800	1000	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 50$ °C	$I_{F(AV)}$	10					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	440					A
Operating junction and storage temperature range	$T_J, T_{STG}$	- 55 to + 175					°C

ELECTRICAL CHARACTERISTICS ( $T_A = 25$ °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS	SYMBOL	GPP100D	GPP100G	GPP100J	GPP100K	GPP100M	UNIT
Maximum instantaneous forward voltage	$I_F = 10$ A	$V_F$ (1)	1.05				V	
Maximum reverse current	Rated $V_R$	$I_R$	$T_A = 25$ °C				5.0	$\mu A$
			$T_A = 100$ °C				100	
Typical reverse recovery time	$I_F = 0.5$ A, $I_R = 1.0$ A, $I_{rr} = 0.25$ A	$t_{rr}$ (2)	5.5				$\mu s$	
Typical junction capacitance	4.0 V, 1 MHz	$C_J$	110				pF	

### Notes

(1) Pulse test: 300  $\mu s$  pulse width, 1 % duty cycle

(2) Pulse test: 40 ms pulse width,



THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	GPP100D	GPP100G	GPP100J	GPP100K	GPP100M	UNIT
Typical thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	20					°C/W
	R <sub>θJL</sub> <sup>(1)</sup>	4.0					

**Note**

<sup>(1)</sup> Leads clipped at 3 mm lead length from plastic body on 7.0 cm x 2.2 cm x 1.9 cm x 2 heatsink

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
GPP100J-E3/54	2.0	54	800	13" diameter paper tape and reel
GPP100J-E3/73	2.0	73	300	Ammopack packaging
GPP100JHE3/54 <sup>(1)</sup>	2.0	54	800	13" diameter paper tape and reel
GPP100JHE3/73 <sup>(1)</sup>	2.0	73	300	Ammopack packaging

**Note**

<sup>(1)</sup> AEC-Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)**

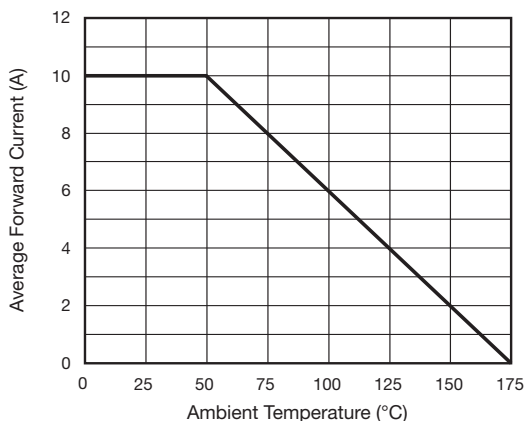


Fig. 1 - Maximum Forward Current Derating Curve

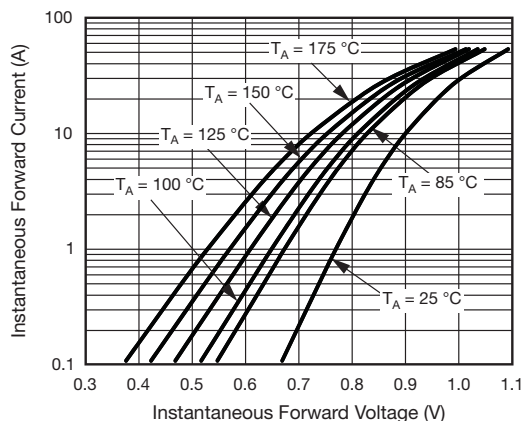


Fig. 3 - Typical Instantaneous Forward Characteristics

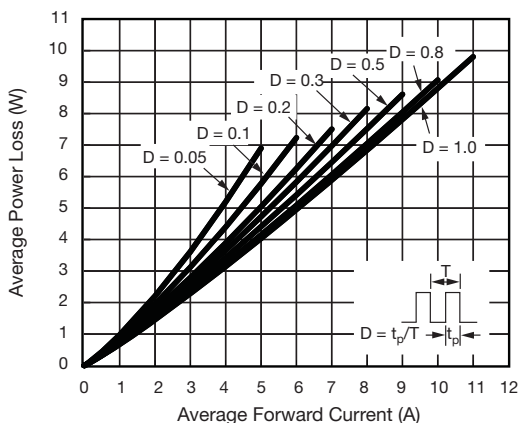


Fig. 2 - Forward Power Loss Characteristics

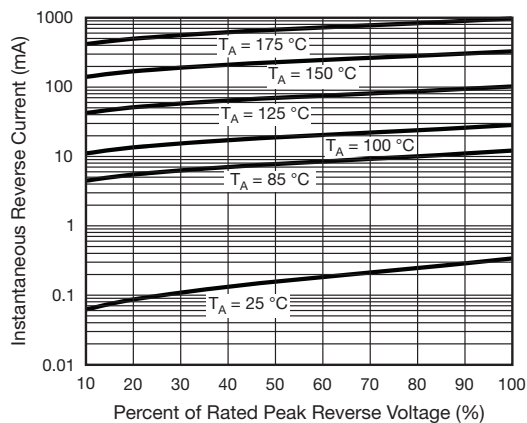


Fig. 4 - Typical Reverse Leakage Characteristics

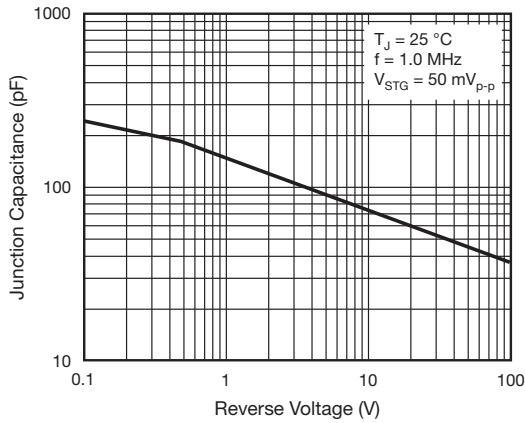
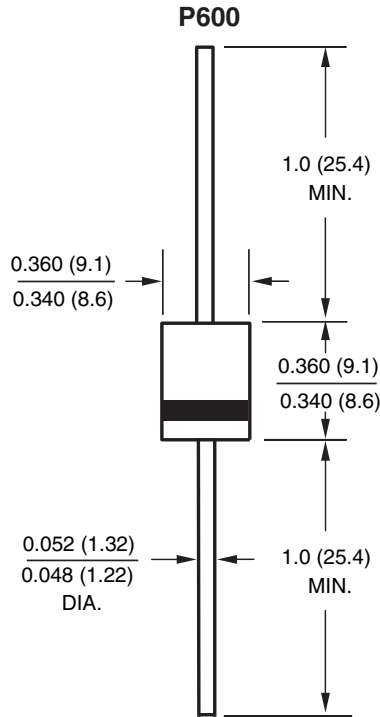


Fig. 5 - Typical Junction Capacitance

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





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