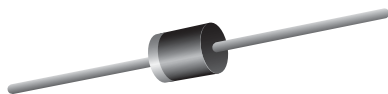




Photovoltaic Solar Panel Protection Plastic Rectifier



P600

FEATURES

- Glass passivated chip junction
- Low forward voltage drop
- 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


RoHS
COMPLIANT

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	10 A
V_{RRM}	1000 V
I_{FSM}	440 A
V_F at $I_F = 10$ A ($T_A = 125$ °C)	0.80 V
I_R	5.0 μ A
T_J max.	175 °C
Package	P600
Diode variations	Single die

TYPICAL APPLICATIONS

For use in solar panel protection

MECHANICAL DATA

Case: P600

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 ($T_A = 25$ °C unless otherwise noted)			
PARAMETER	SYMBOL	GPP100MS	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	1000	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 50$ °C	$I_{F(AV)}$ ⁽¹⁾	10	A
Peak forward surge current 8.3 ms single half sine-wave $T_A = 25$ °C	I_{FSM}	440	A
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 175	°C

Note

⁽¹⁾ With heatsink

ELECTRICAL CHARACTERISTICS ($T_A = 25$ °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	$I_F = 5.0$ A	$T_A = 25$ °C	V_F ⁽¹⁾	0.86	-	V
	$I_F = 10$ A			0.92	1.05	
	$I_F = 5.0$ A	$T_A = 125$ °C		0.73	-	
	$I_F = 10$ A			0.80	0.95	
Reverse current	$V_R = 1000$ V	$T_A = 25$ °C	I_R ⁽²⁾	0.4	5.0	μ A
		$T_A = 125$ °C		103	500	
Typical reverse recovery time	$I_F = 0.5$ A, $I_R = 1.0$ A, $I_{rr} = 0.25$ A		t_{rr}	5.5	-	μ s
Typical junction capacitance	4.0 V, 1 MHz		C_J	110	-	pF

Notes

⁽¹⁾ Pulse test: 300 μ s pulse width, 1 % duty cycle

⁽²⁾ Pulse test: 40 ms pulse width



THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	GPP100MS	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$	20	$^\circ\text{C/W}$
	$R_{\theta JL}^{(1)}$	4.0	

Note

(1) 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
GPP100MS-E3/54	2.0	54	800	13" diameter paper tape and reel
GPP100MS-E3/73	2.0	73	300	Ammopack packaging

RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

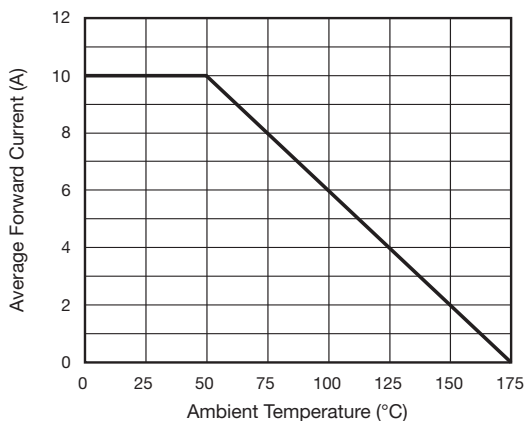


Fig. 1 - Maximum Forward Current Derating Curve

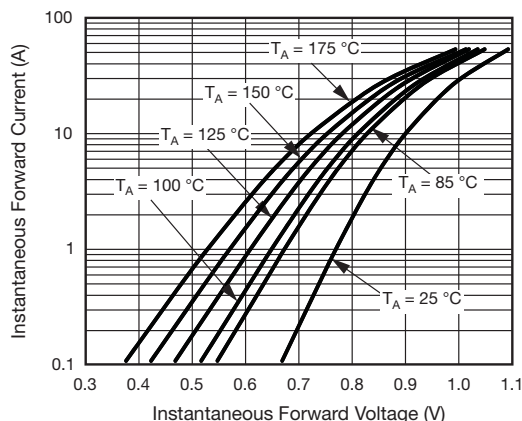


Fig. 3 - Typical Instantaneous Forward Characteristics

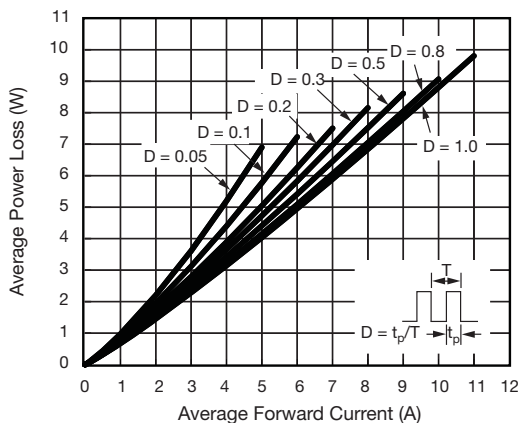


Fig. 2 - Forward Power Loss Characteristics

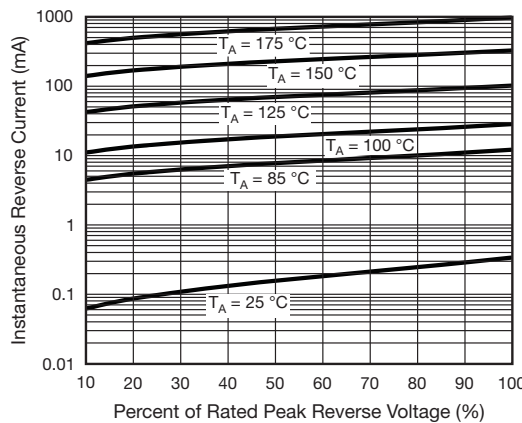


Fig. 4 - Typical Reverse Leakage Characteristics

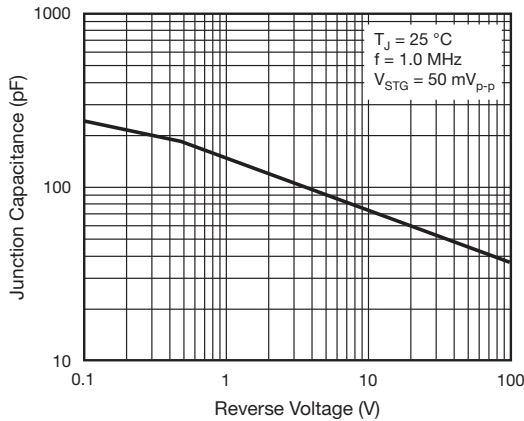
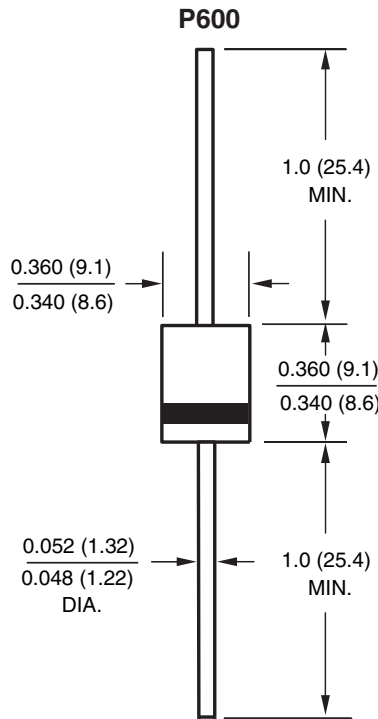


Fig. 5 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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