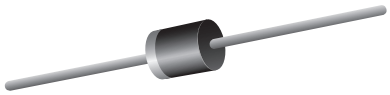
High Current Axial Plastic Rectifier



P600

FEATURES

- Low forward voltage drop
- Low leakage current, I_R less than 0.1 µA
- 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 www.vishay.com/doc?99912

RoHS COMPLIANT

TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters, and freewheeling diodes application.

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}	400 A
I_R	5.0 µA
V_F	0.9 V, 0.95 V
T_J max.	150 °C
Package	P600
Diode variations	Single die

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

PARAMETER		SYMBOL	GI750	GI751	GI752	GI754	GI756	GI758	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 non-repetitive peak reverse voltage		V_{RSM}	60	120	240	480	720	1200	V
Maximum average forward rectified current at	T_A =60 °C, PCB mounting (fig. 1)	$I_{F(AV)}$	6.0						A
	T_L = 60 °C,0.125" (3.18 mm) lead length (fig. 2)		22						
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load		I_{FSM}	400						A
Operating junction and storage temperature range		T_J, T_{STG}	- 50 to + 150						°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	GI750	GI751	GI752	GI754	GI756	GI758	UNIT
Maximum instantaneous forward voltage at	6.0 A		V_F	0.90					0.95	V
	100 A			1.25					1.30	
Maximum DC reverse current at rated DC blocking voltage		T_A = 25 °C	I_R	5.0						µA
		T_A = 100 °C		1.0						mA
Typical reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	2.5						µs
Typical junction capacitance	4.0 V, 1 MHz		C_J	150						pF

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THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	GI750	GI751	GI752	GI754	GI756	GI758	UNIT
Typical thermal resistance	$R_{\theta JA}$ (1)	20						°C/W
	$R_{\theta JL}$ (1)	4.0						

Note

(1) 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
GI756-E3/54	2.1	54	800	13" diameter paper tape and reel
GI756-E3/73	2.1	73	300	Ammo pack packaging

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

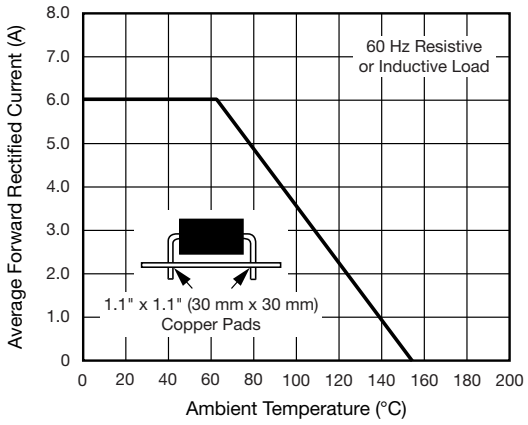

Fig. 1 - Maximum Forward Current Derating Curve

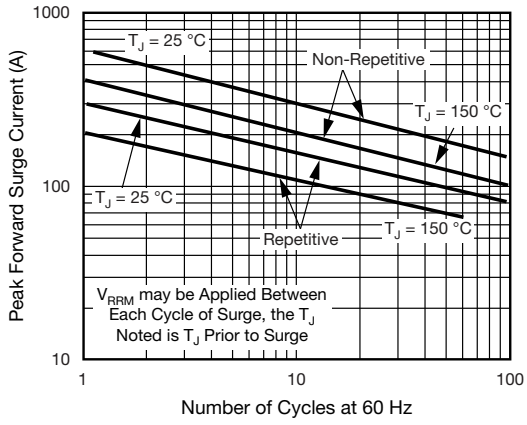

Fig. 3 - Maximum Peak Forward Surge Current

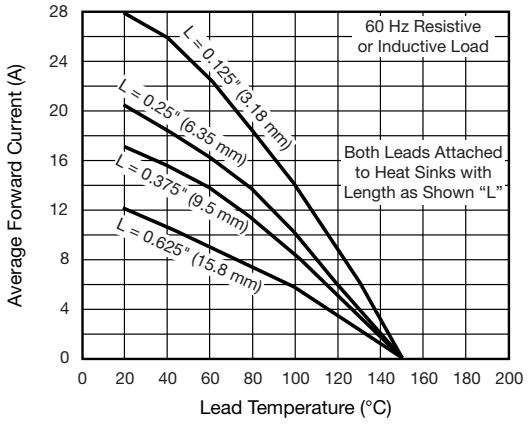

Fig. 2 - Maximum Forward Current Derating Curve

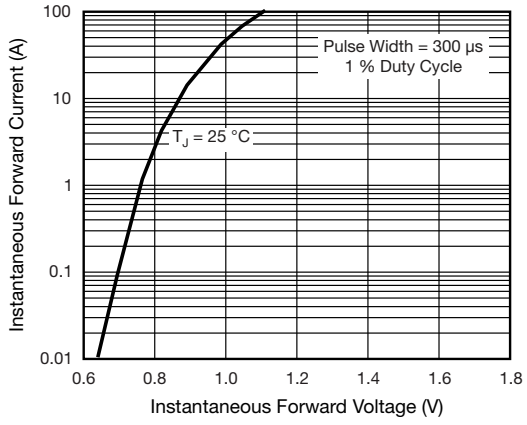

Fig. 4 - Typical Instantaneous Forward Characteristics

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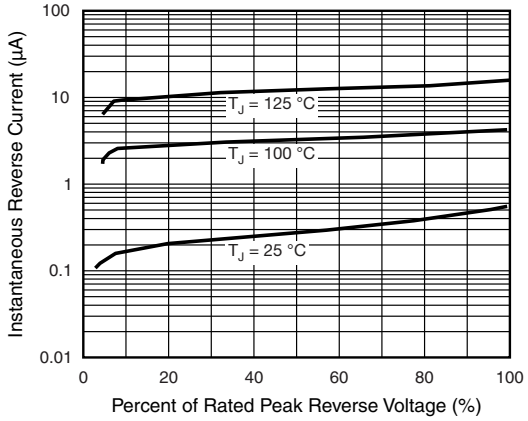


Fig. 5 - Typical Reverse Characteristics

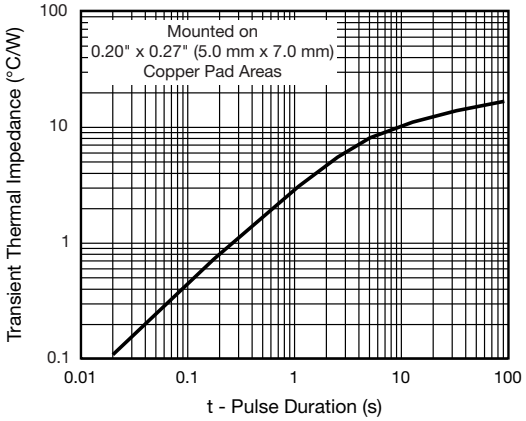
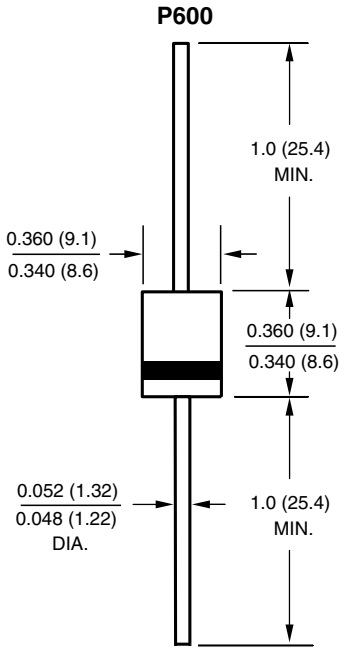


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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