

## High Current Axial Plastic Rectifier


**P600**

### FEATURES

- Low forward voltage drop
- Low leakage current,  $I_R$  less than 0.1  $\mu\text{A}$
- 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](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.

#### 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 $\mu\text{A}$                       |
| $V_F$                   | 0.9 V, 0.95 V                           |
| $T_J$ max.              | 150 °C                                  |
| Package                 | P600                                    |
| Diode variations        | Single die                              |

| MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ 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                                       | $T_A = 60\text{ °C}$ , PCB mounting (fig. 1)                 | 6.0           |       |       |       |       |       | A    |
|  | $T_L = 60\text{ °C}$ , 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 ( $T_A = 25\text{ °C}$ 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                   | $T_A = 25\text{ °C}$   | $I_R$    | 5.0   |       |       |       |       |       | $\mu\text{A}$ |
|   | $T_A = 100\text{ °C}$  |          | 1.0   |       |       |       |       |       | mA            |
| Typical reverse recovery time   | $I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$ | $t_{rr}$ | 2.5   |       |       |       |       |       | $\mu\text{s}$ |
| Typical junction capacitance  | 4.0 V, 1 MHz   | $C_J$    | 150   |       |       |       |       |       | pF            |



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



Fig. 1 - Maximum Forward Current Derating Curve

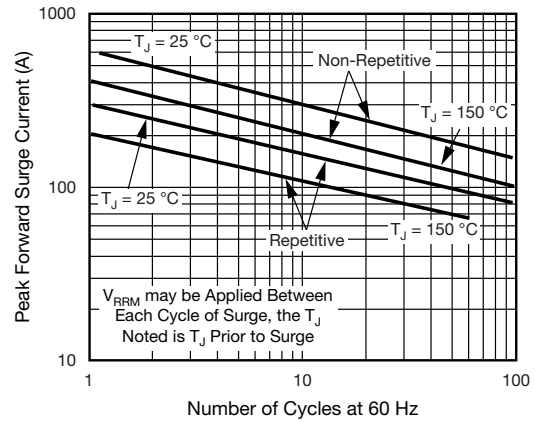


Fig. 3 - Maximum Peak Forward Surge Current

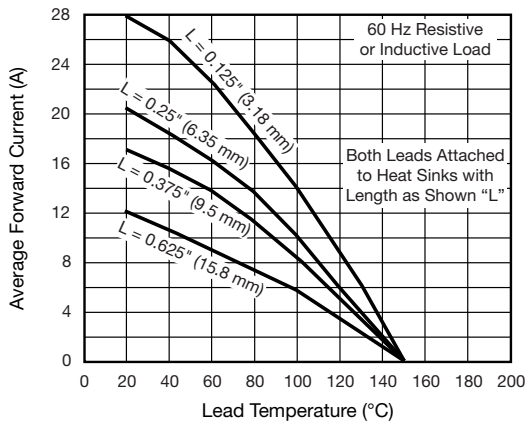


Fig. 2 - Maximum Forward Current Derating Curve

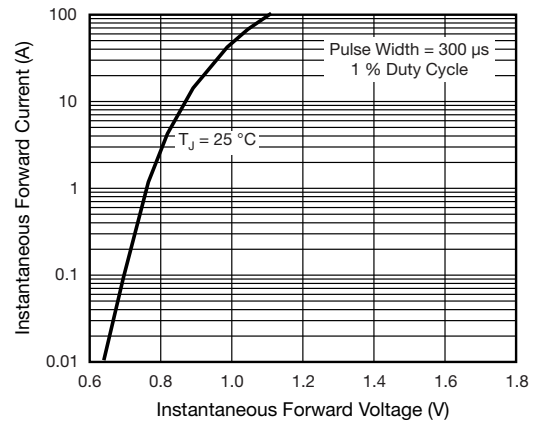


Fig. 4 - Typical Instantaneous Forward Characteristics



Fig. 5 - Typical Reverse Characteristics

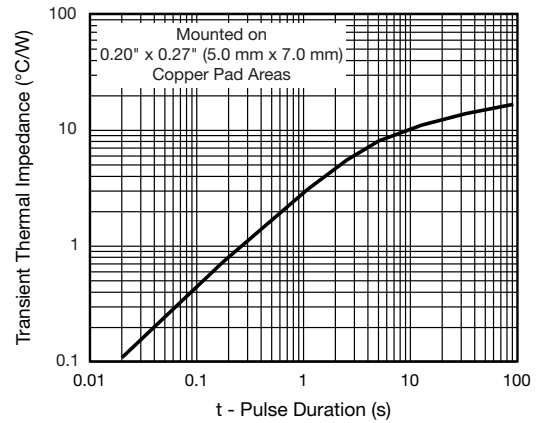


Fig. 6 - Typical Transient Thermal Impedance

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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