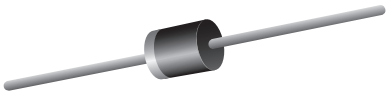
# High Current Axial Plastic Rectifier



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
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

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 to 800 V |
| $I_{FSM}$ | 400 A |
| $V_F$ | 0.9 V, 0.95 V |
| $I_R$ | 5.0 µA |
| $T_J$ max. | 150 °C |

**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, P.C.B. 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, P.C.B. 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)

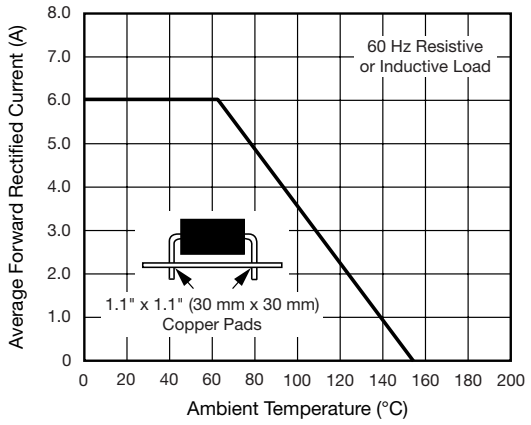


Fig. 1 - Maximum Forward Current Derating Curve

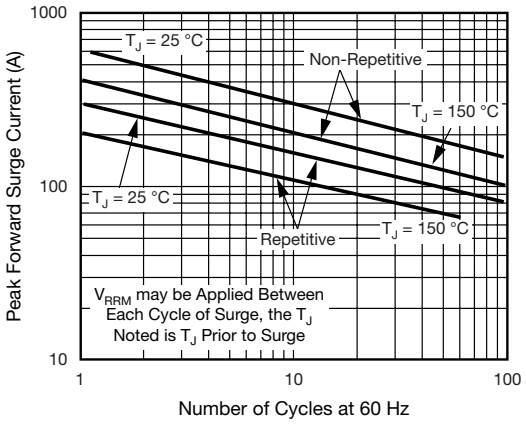


Fig. 3 - Maximum Peak Forward Surge Current

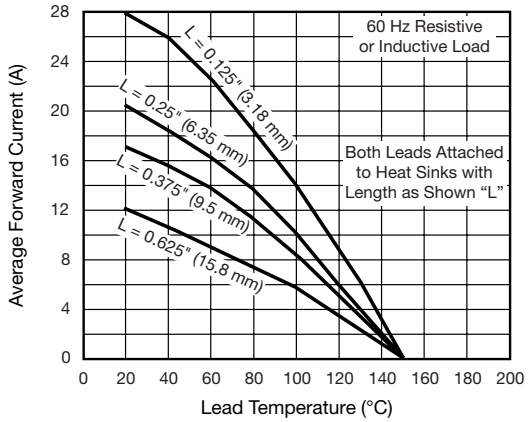


Fig. 2 - Maximum Forward Current Derating Curve

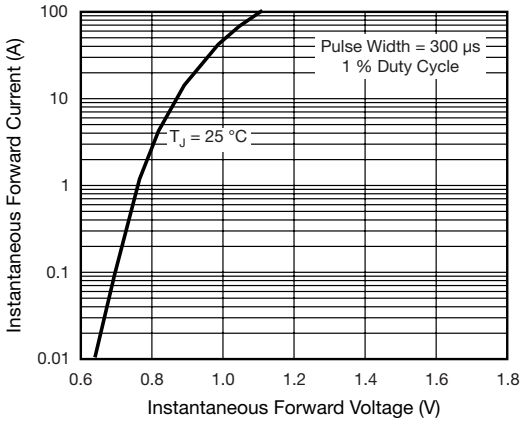


Fig. 4 - Typical Instantaneous Forward Characteristics



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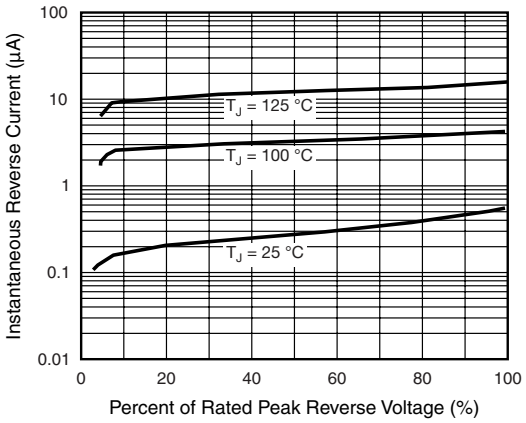



Fig. 5 - Typical Reverse Characteristics

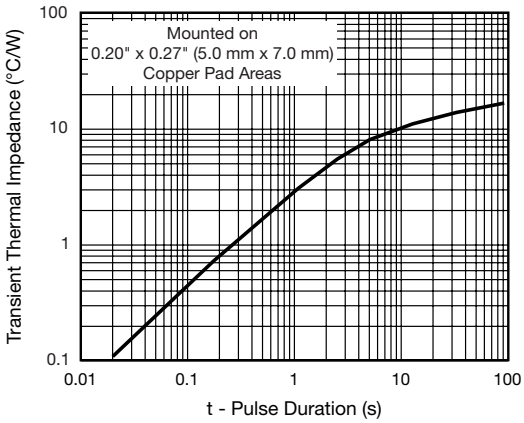
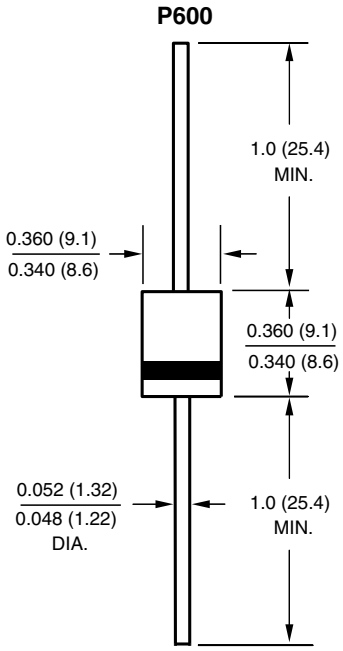



Fig. 6 - Typical Transient Thermal Impedance

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



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