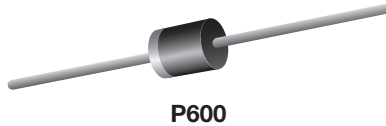


Fast Switching Plastic Rectifier



FEATURES

- Fast switching for high efficiency
- Low forward voltage drop
- Low leakage current
- High forward current operation
- 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 fast switching rectification of power supply, inverters, converters and freewheeling diodes for consumer and telecommunication.

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 | |
|-------------------------|---------------|
| $I_{F(AV)}$ | 5.0 A |
| V_{RRM} | 50 V to 800 V |
| I_{FSM} | 300 A |
| t_{rr} | 200 ns |
| V_F | 1.05 V |
| I_R | 10 μ A |
| T_J max. | 150 °C |

| MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted) | | | | | | | | |
|---|----------------|---------------|-------|-------|-------|-------|-------|------|
| PARAMETER | SYMBOL | GI820 | GI821 | GI822 | GI824 | GI826 | GI828 | 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} | 75 | 150 | 250 | 450 | 650 | 880 | V |
| Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55$ °C | $I_{F(AV)}$ | 5.0 | | | | | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 300 | | | | | | A |
| Operating junction and storage temperature range | T_J, T_{STG} | - 50 to + 150 | | | | | | °C |

| ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | | | | | |
|---|---|-----------------------------------|---------------|-------|-------|-------|-------|-------|---------------|------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | GI820 | GI821 | GI822 | GI824 | GI826 | GI828 | UNIT |
| Maximum instantaneous forward voltage | 5.0 A | $T_J = 25\text{ }^\circ\text{C}$ | V_F | 1.10 | | | | | V | |
| | 15.7 A | $T_J = 100\text{ }^\circ\text{C}$ | | 1.05 | | | | | | |
| Maximum DC reverse current at rated DC blocking voltage | $T_A = 25\text{ }^\circ\text{C}$ | | I_R | 10 | | | | | μA | |
| | $T_A = 100\text{ }^\circ\text{C}$ | | | 1.0 | | | | | | |
| Typical junction capacitance | 4.0 V, 1 MHz | | C_J | 300 | | | | | pF | |
| Maximum reverse recovery time | $I_F = 1.0\text{ A}$, $V_R = 30\text{ V}$, $di/dt = 50\text{ A}/\mu\text{s}$, $I_{rr} = 10\% I_{RM}$ | | t_{rr} | 200 | | | | | ns | |
| Maximum reverse recovery current | $I_F = 1.0\text{ A}$, $V_R = 30\text{ V}$, $di/dt = 50\text{ A}/\mu\text{s}$ | | $I_{RM(REC)}$ | 2.0 | | | | | A | |

| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | | | | |
|--|-----------------------|-------|-------|-------|-------|-------|---------------------------|------|--|
| PARAMETER | SYMBOL | GI820 | GI821 | GI822 | GI824 | GI826 | GI828 | UNIT | |
| Typical thermal resistance | $R_{\theta JA}^{(1)}$ | 10 | | | | | $^\circ\text{C}/\text{W}$ | | |

Note

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length with both leads equally heat sink

| ORDERING INFORMATION (Example) | | | | |
|--------------------------------|-----------------|------------------------|---------------|----------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| GI826-E3/54 | 2.1 | 54 | 800 | 13" diameter paper tape and reel |
| GI826-E3/73 | 2.1 | 73 | 300 | Ammo pack packaging |

RATINGS AND CHARACTERISTICS CURVES

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

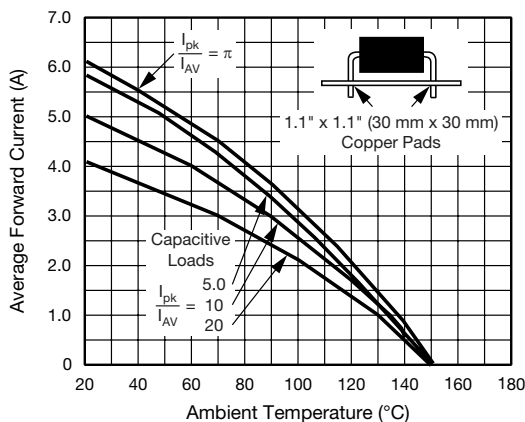


Fig. 1 - Forward Current Derating Curves

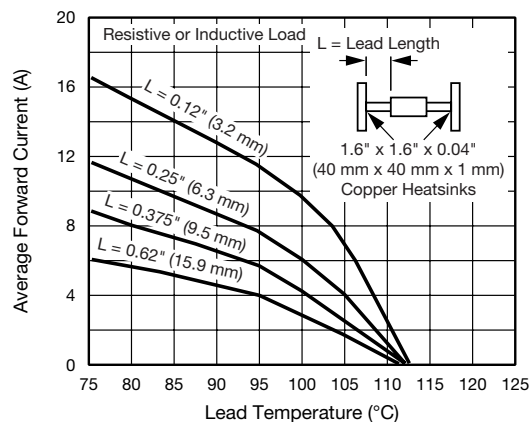


Fig. 2 - Forward Current Derating Curve

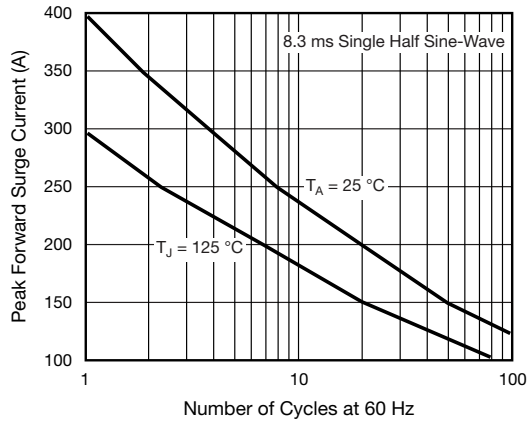


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

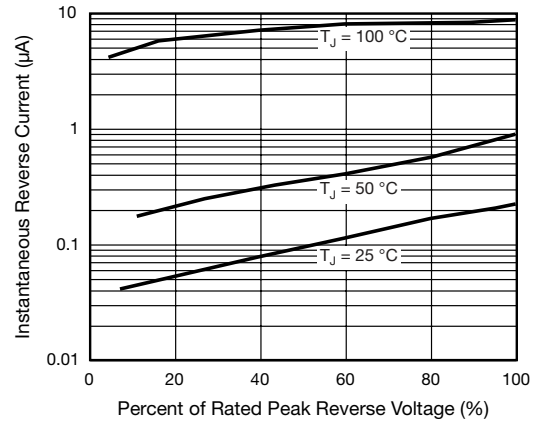


Fig. 5 - Typical Reverse Characteristics

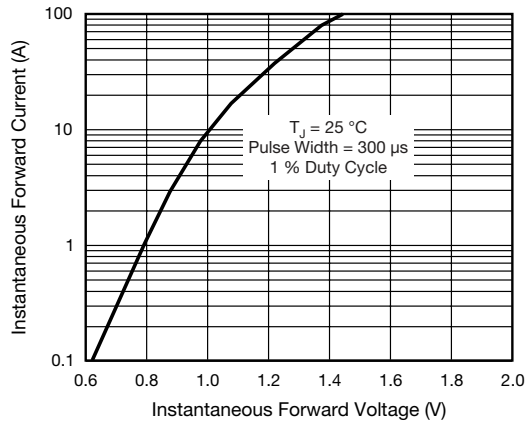


Fig. 4 - Typical Instantaneous Forward Characteristics

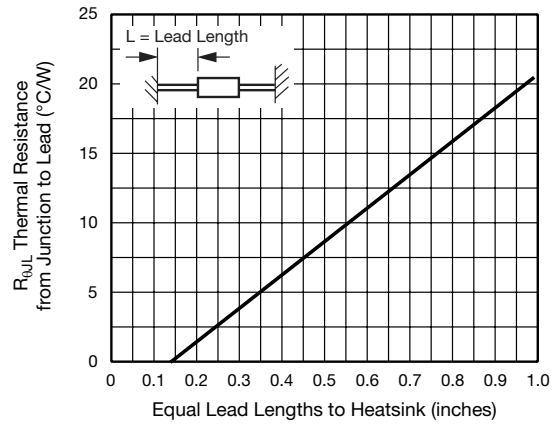
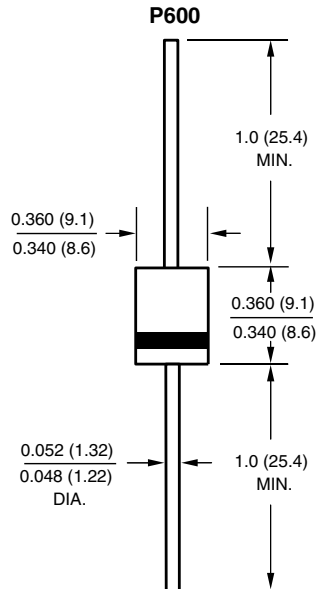


Fig. 6 - Typical Thermal Resistance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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