# Fast Switching Plastic Rectifier

**Case Style P600**

## FEATURES

- Fast switching for high efficiency
- Low forward voltage drop
- Low leakage current
- High forward current operation
- High forward surge capability
- Solder Dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

## 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 Q101 qualified. Therefore, the devices specified in this datasheet have not been designed for use in automotive or Hi-Rel applications.)

## MECHANICAL DATA

**Case:** P600, void-free molded epoxy body

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated (E3 Suffix) leads, solderable per J-STD-002B and JESD22-B102D

**Polarity:** Color band denotes cathode end

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

| THERMAL CHARACTERISTICS ($T_A$ = 25 °C unless otherwise noted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PARAMETER** | **SYMBOL** | **GI820** | **GI821** | **GI822** | **GI824** | **GI826** | **GI828** | **UNIT** |
| Typical thermal resistance (1) | $R_{\theta JA}$ | 10 | | | | | | °C/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 | | | | |
|---|---|---|---|---|
| **PREFERRED P/N** | **UNIT WEIGHT (g)** | **PREFERRED PACKAGE CODE** | **BASE QUANTITY** | **DELIVERY MODE** |
| GI826-E3/54 | 2.1 | 54 | 800 | 13" Diameter Paper Tape & Reel |
| GI826-E3/73 | 2.1 | 73 | 300 | Ammo Pack Packaging |

## RATINGS AND CHARACTERISTICS CURVES

($T_A$ = 25 °C unless otherwise noted)

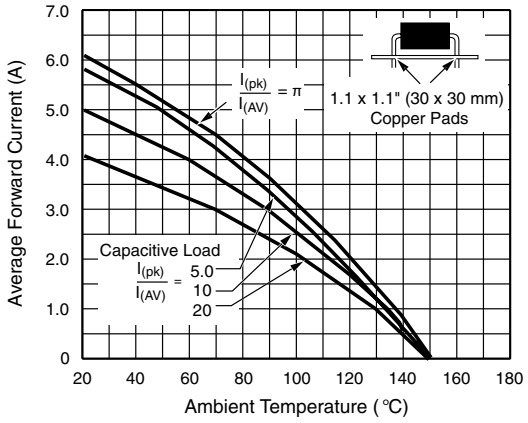



Figure 1. Forward Current Derating Curves

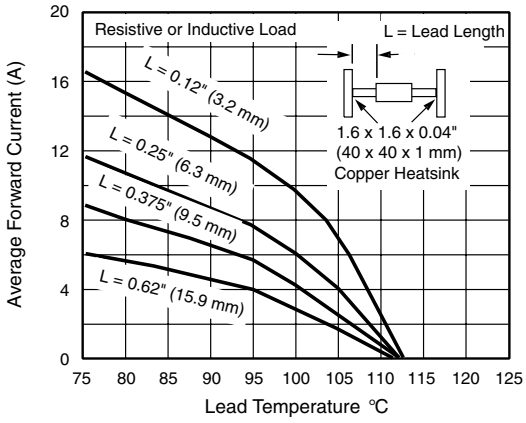



Figure 2. Forward Current Derating Curve

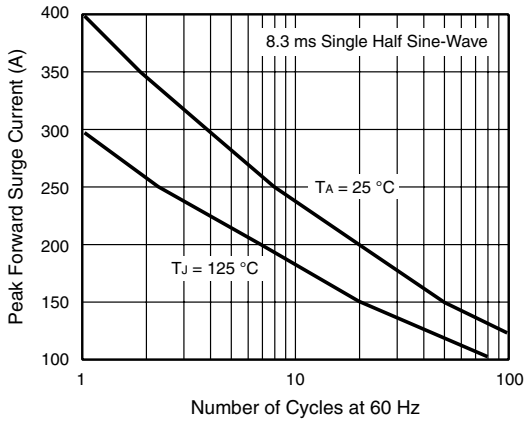



Figure 3. Maximum Non-Repetitive Peak Forward Surge Current

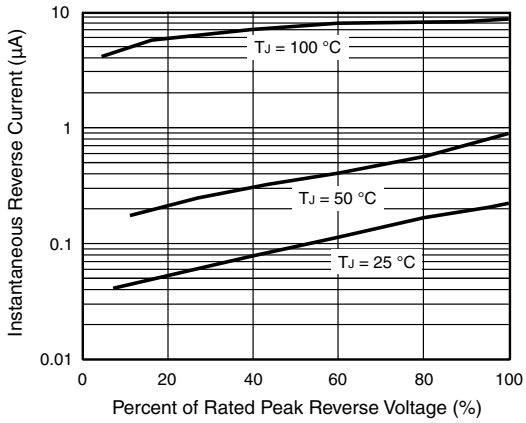



Figure 5. Typical Reverse Characteristics

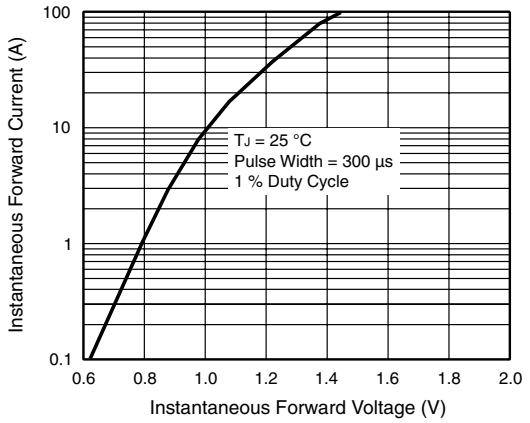



Figure 4. Typical Instantaneous Forward Characteristics

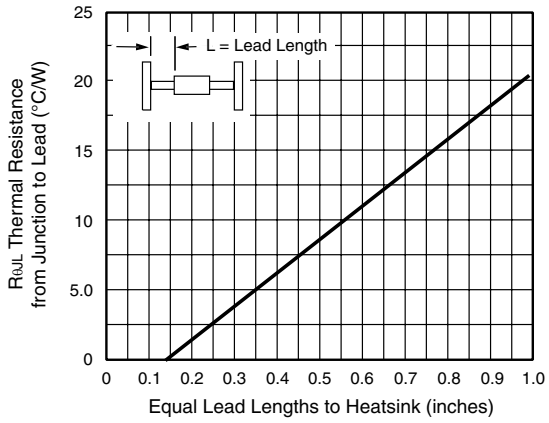
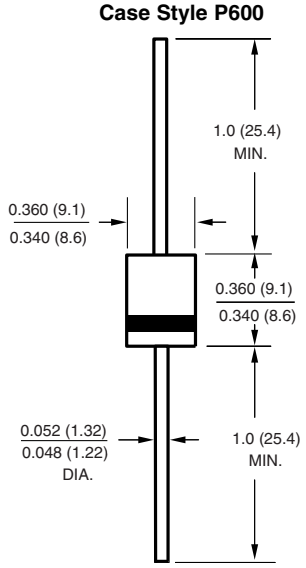



Figure 6. Typical Thermal Resistance

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

**Case Style P600**



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