

## Fast Switching Plastic Rectifier

### 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 $\mu$ A
$T_j$ max.	150 °C



Case Style P600

### Features

- Fast switching for high efficiency
- Low forward voltage drop
- Low leakage current
- High forward current operation
- High forward surge capability

### 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 plastic body

Epoxy meets UL-94V-0 Flammability rating

**Terminals:** Matte tin plated (E3 Suffix) leads, solderable per J-STD-002B and MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

### 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 8.3ms 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 condition	Symbol	GI820	GI821	GI822	GI824	GI826	GI828	Unit
Maximum instantaneous forward voltage	at 5.0 A $T_J = 25\text{ }^\circ\text{C}$ at 15.7 A $T_J = 100\text{ }^\circ\text{C}$	$V_F$				1.10 1.05			V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 100\text{ }^\circ\text{C}$	$I_R$				10 1.0			$\mu\text{A}$
Typical junction capacitance	at 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			ns

### Thermal Characteristics

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

Parameter	Symbol	GI820	GI821	GI822	GI824	GI826	GI828	Unit
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$				10			$^\circ\text{C}/\text{W}$

Notes:

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

### Ratings and Characteristics Curves

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

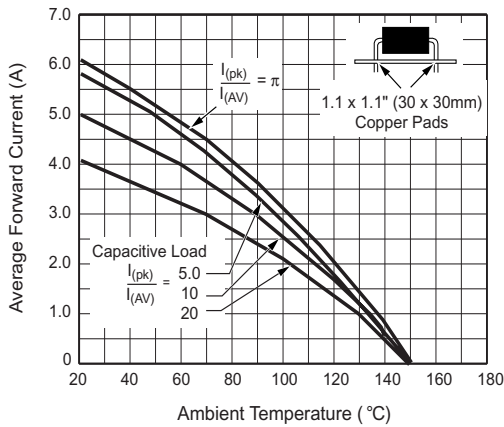


Figure 1. Forward Current Derating Curves

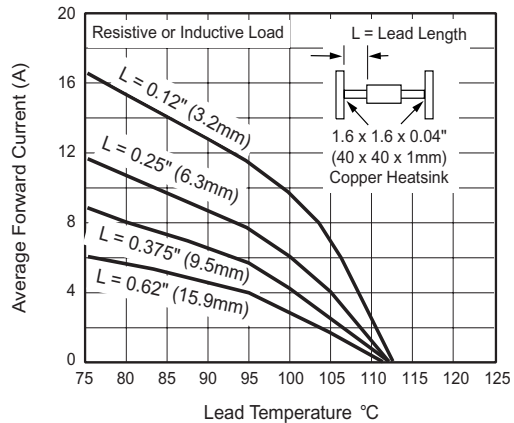


Figure 2. Forward Current Derating Curve

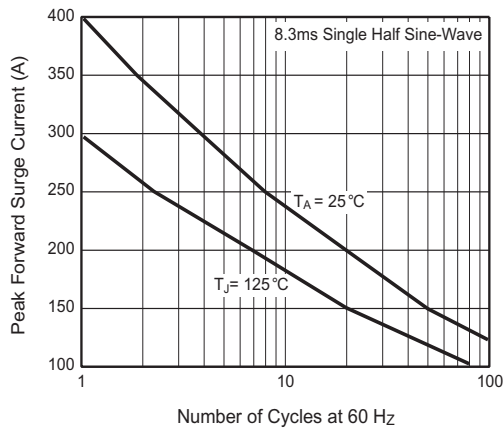


Figure 3. Maximum Non-Repetitive Peak Forward Surge Current

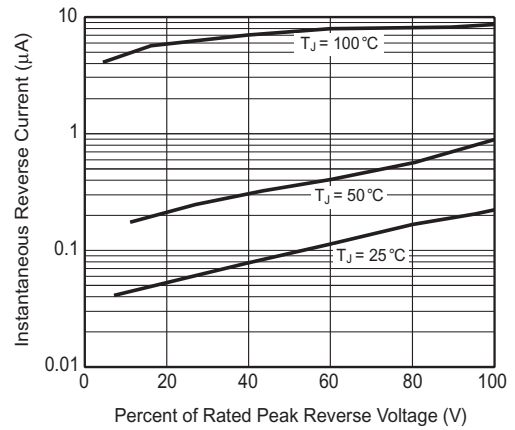


Figure 5. Typical Reverse Characteristics

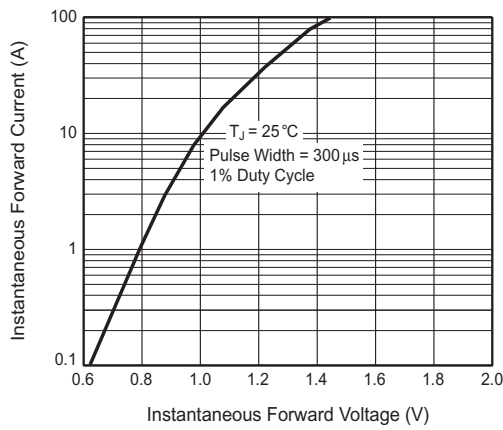


Figure 4. Typical Instantaneous Forward Characteristics

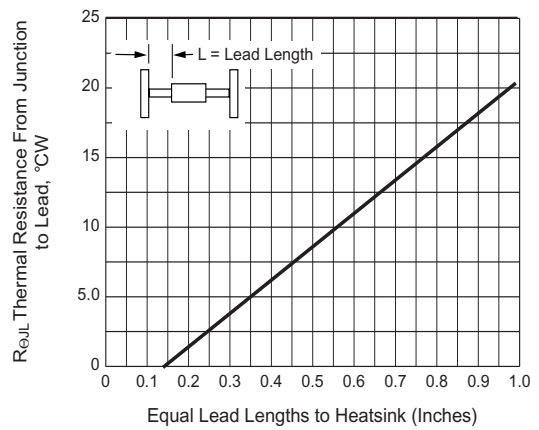


Figure 6. Typical Thermal Resistance

## Package outline dimensions in inches (millimeters)

