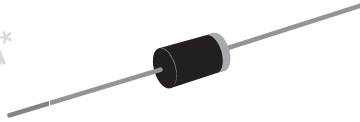


# Glass Passivated Junction Fast Switching Rectifier

Patented\*



\* Glass-plastic encapsulation technique is covered by Patent No. 3,996,602, and brazed-lead assembly by Patent No. 3,930,306

**DO-204AC (DO-15)**
**FEATURES**

- Superrectifier structure for high reliability condition
- Cavity-free glass-passivated junction
- Fast switching for high efficiency
- Low leakage current
- High forward surge capability
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


**RoHS COMPLIANT**
**TYPICAL APPLICATIONS**

For general purpose of medium frequency rectification.

**MECHANICAL DATA**
**Case:** DO-204AC, molded epoxy over glass body

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

**Polarity:** Color band denotes cathode end

**PRIMARY CHARACTERISTICS**

$I_{F(AV)}$	1.0 A
$V_{RRM}$	50 V to 1000 V
$I_{FSM}$	30 A
$t_{rr}$	750 ns
$I_R$	10 $\mu$ A
$V_F$	1.2 V
$T_J$ max.	175 °C

**MAXIMUM RATINGS** ( $T_A = 25$  °C unless otherwise noted)

PARAMETER	SYMBOL	GI810	GI811	GI812	GI814	GI816	GI817	GI818	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 75$ °C	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	30							A
Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 175							°C

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25$  °C unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	GI810	GI811	GI812	GI814	GI816	GI817	GI818	UNIT
Maximum instantaneous forward voltage	1.0 A	$V_F$	1.2							V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25$ °C $T_A = 100$ °C	$I_R$	10 100							$\mu$ A
Maximum reverse recovery time	$I_F = 1.0$ A, $V_R = 30$ V, $di/dt = 50$ A/ $\mu$ s	$t_{rr}$	750							ns
Typical junction capacitance	4.0 V, 1 MHz	$C_J$	25							pF

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

PARAMETER	SYMBOL	GI810	GI811	GI812	GI814	GI816	GI817	GI818	UNIT
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$				45				$^\circ\text{C/W}$

**Note:**

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, P.C.B. mounted

### ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
GI816-E3/54	0.425	54	4000	13" diameter paper tape and reel
GI816-E3/73	0.425	73	2000	Ammo pack packaging
GI816HE3/54 <sup>(1)</sup>	0.425	54	4000	13" diameter paper tape and reel
GI816HE3/73 <sup>(1)</sup>	0.425	73	2000	Ammo pack packaging

**Note:**

(1) Automotive grade AEC Q101 qualified

### RATINGS AND CHARACTERISTICS CURVES

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

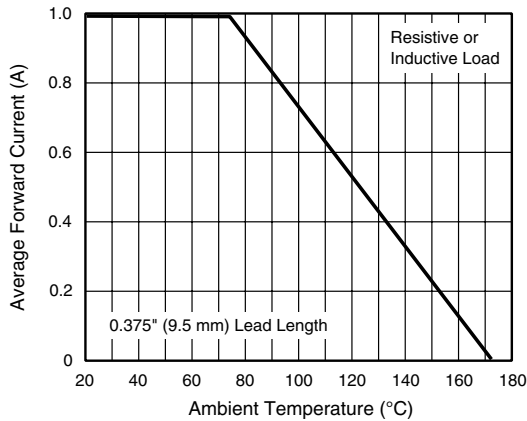


Figure 1. Forward Current Derating Curve

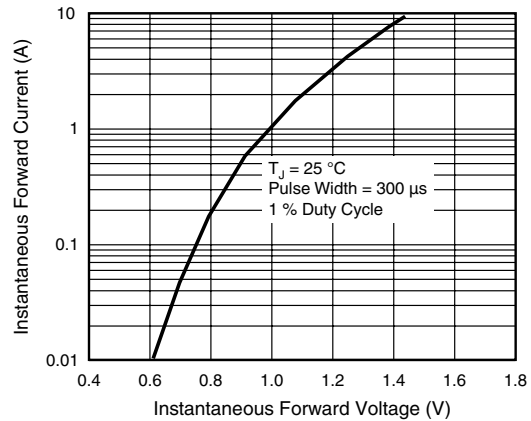


Figure 3. Typical Instantaneous Forward Characteristics

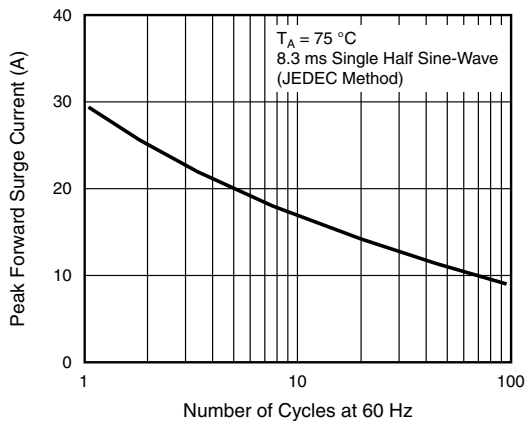


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

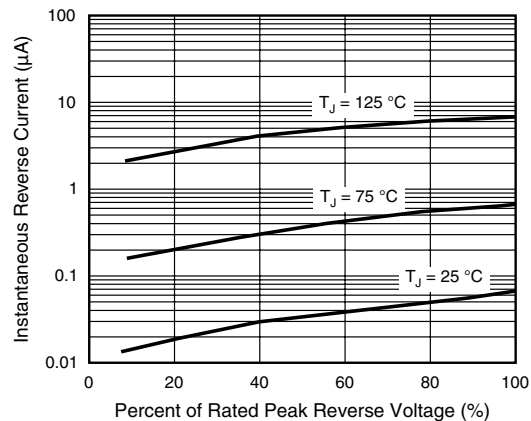
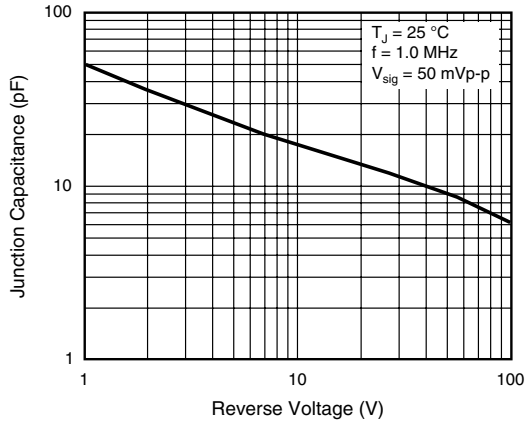
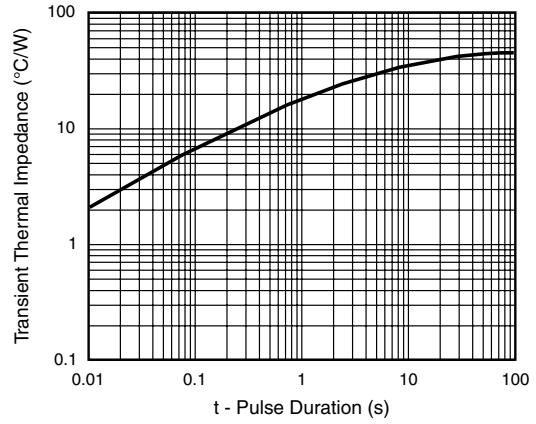


Figure 4. Typical Reverse Characteristics



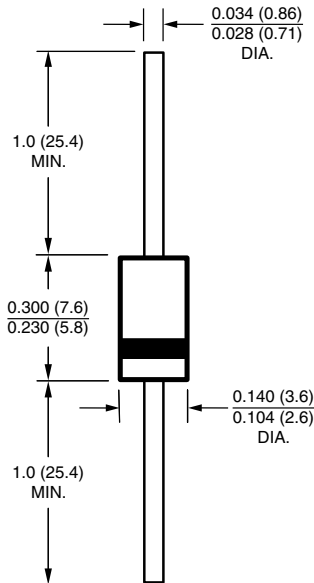
Typical Junction Capacitance



Typical Transient Thermal Impedance

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

**DO-204AC (DO-15)**





## Disclaimer

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