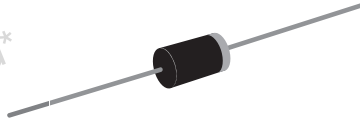


Glass Passivated Junction Fast Switching Rectifier

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 μ 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							μ A
Maximum reverse recovery time	$I_F = 1.0$ A, $V_R = 30$ V, $di/dt = 50$ A/ μ 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 ⁽¹⁾	$R_{\theta JA}$				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 ⁽¹⁾	0.425	54	4000	13" diameter paper tape and reel
GI816HE3/73 ⁽¹⁾	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)

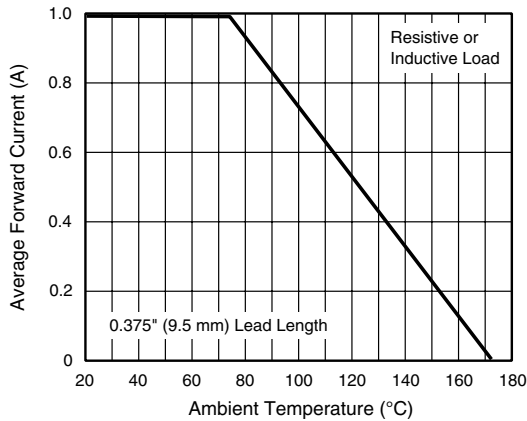


Figure 1. Forward Current Derating Curve

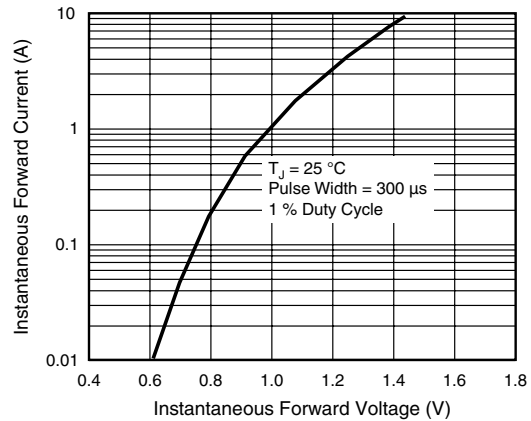


Figure 3. Typical Instantaneous Forward Characteristics

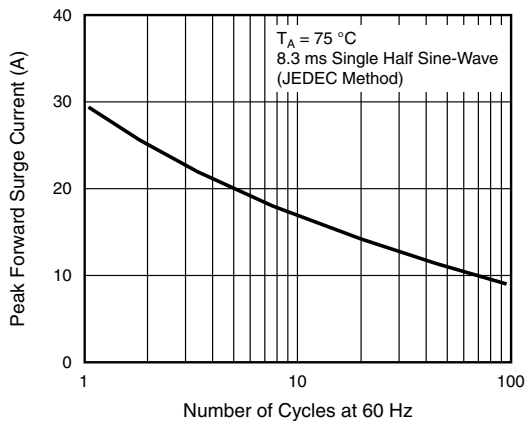


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

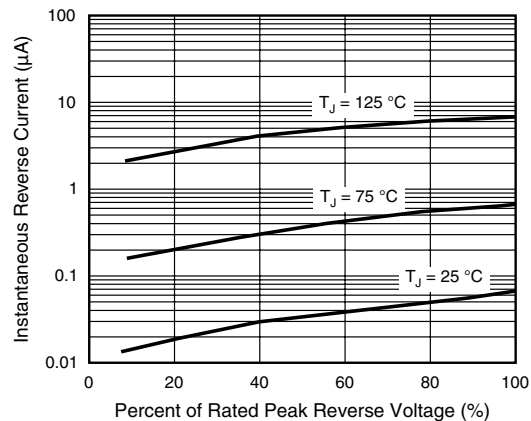
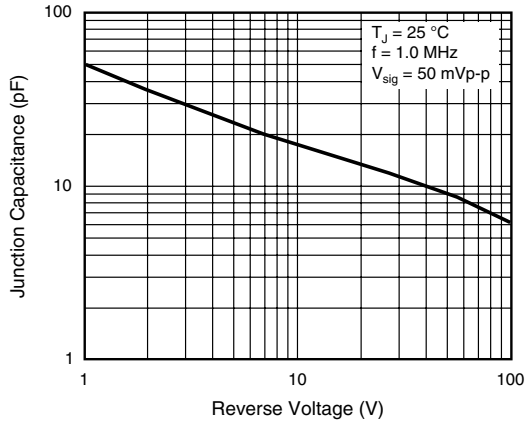
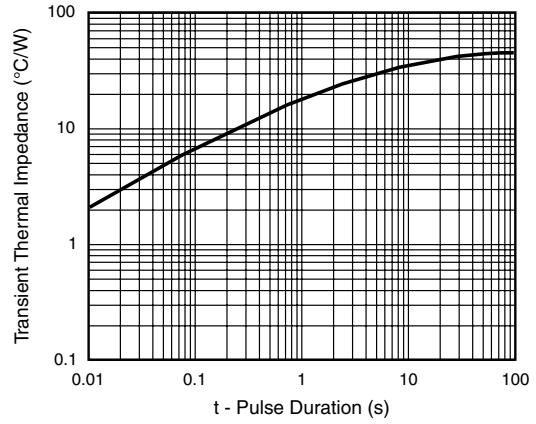


Figure 4. Typical Reverse Characteristics



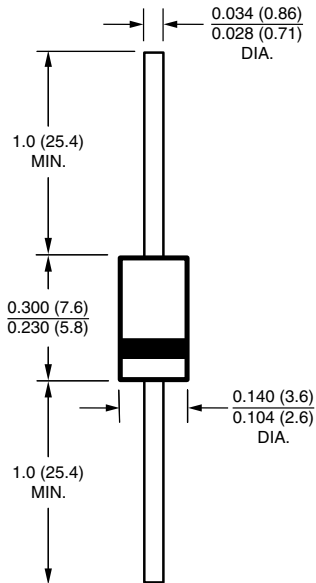
Typical Junction Capacitance



Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)





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