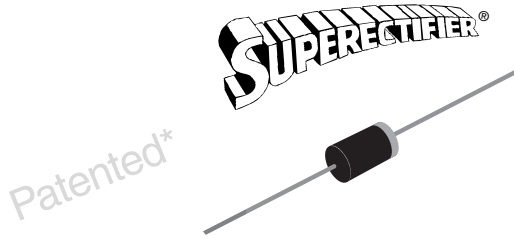


Miniature High Voltage Glass Passivated Rectifier



* Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

DO-204AC (DO-15)

FEATURES

- Superrectifier structure for high reliability application
- Cavity-free glass-passivated junction
- Low forward voltage drop
- Typical I_R less than 0.1 μA
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in high voltage rectification of power supplies, inverters, converters, freewheeling diodes applications.

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}	1200 V to 1600 V
I_{FSM}	30 A
I_R	10 μA
V_F	1.1 V
T_J max.	175 °C

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)					
PARAMETER	SYMBOL	GI1-1200GP	GI1-1400GP	GI1-1600GP	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	1200	1400	1600	V
Maximum RMS voltage	V_{RMS}	840	980	1120	V
Maximum DC blocking voltage	V_{DC}	1200	1400	1600	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 75\text{ °C}$	$I_{F(AV)}$	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	GI1-1200GP	GI1-1400GP	GI1-1600GP	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	I _F = 1.0 A I _F = 3.14 A		V _F		1.1 1.3		V
Maximum reverse current ⁽¹⁾	rated V _R	T _A = 25 °C T _A = 100 °C	I _R		10 100		μA
Maximum reverse recovery time	I _{FM} = 20 mA, I _{RM} = 2 mA		t _{rr}		25		μs
Reverse recovery time	I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A	typical maximum	t _{rr}		0.7 1.5		μs
Maximum forward recovery time	I _{FM} = 20 mA		t _{fr}		1.0		μs
Typical junction capacitance	4.0 V, 1 MHz		C _J		15		pF

Note:

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	GI1-1200GP	GI1-1400GP	GI1-1600GP	UNIT
Typical thermal resistance ⁽¹⁾	R _{0JA}		55		°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	
GI1-1200-E3/54	0.425	54	4000	13" diameter paper tape and reel	
GI1-1200-E3/73	0.425	73	2000	Ammo pack packaging	
GI1-1200HE3/54 ⁽¹⁾	0.425	54	4000	13" diameter paper tape and reel	
GI1-1200HE3/73 ⁽¹⁾	0.425	73	2000	Ammo pack packaging	

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

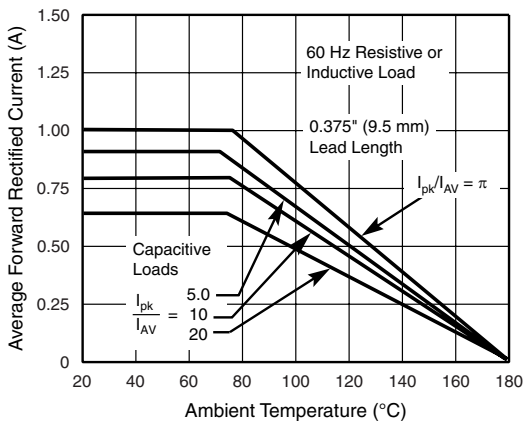


Figure 1. Forward Current Derating Curve

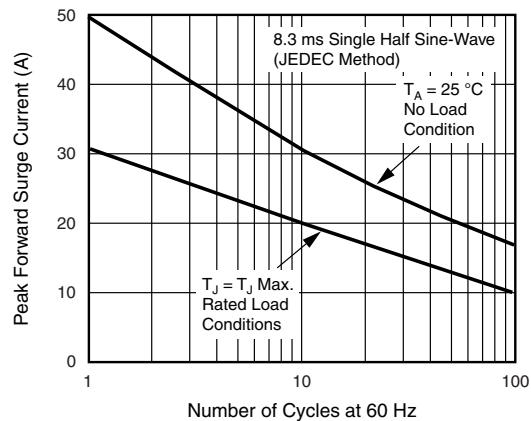


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

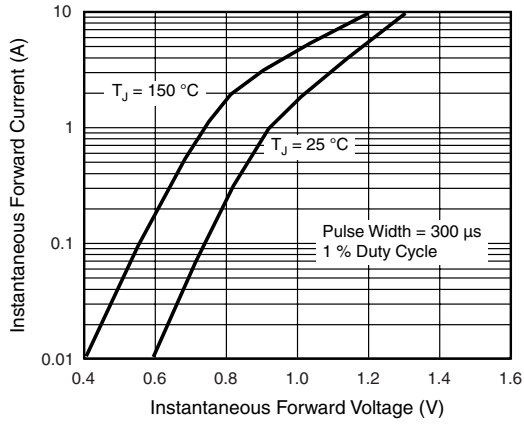


Figure 3. Typical Instantaneous Forward Characteristics

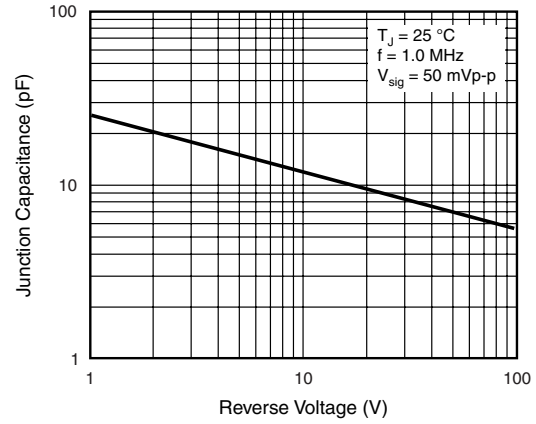


Figure 5. Typical Junction Capacitance

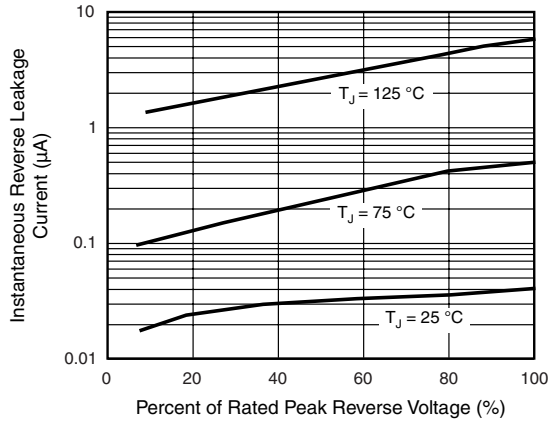
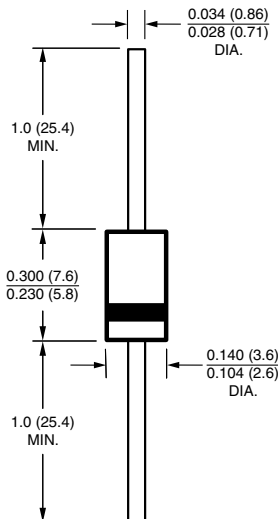


Figure 4. Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)





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