

Miniature High Voltage Glass Passivated Plastic Rectifier


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 μ A
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912


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
Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade
Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix 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, 1400 V, 1600 V
I_{FSM}	30 A
I_R	10 μ A
V_F	1.1 V
T_J max.	175 °C
Package	DO-204AC (DO-15)
Diode variations	Single die

MAXIMUM RATINGS ($T_A = 25$ °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 $T_A = 75$ °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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	GI1-1200GP	GI1-1400GP	GI1-1600GP	UNIT
Maximum instantaneous forward voltage	$I_F = 1.0 \text{ A}$		V_F ⁽¹⁾	1.1			V
	$I_F = 3.14 \text{ A}$			1.3			
Maximum reverse current	Rated V_R	$T_A = 25^\circ\text{C}$	I_R ⁽¹⁾	10			μA
		$T_A = 100^\circ\text{C}$		100			
Maximum reverse recovery time	$I_{FM} = 20 \text{ mA}$, $I_{RM} = 2 \text{ mA}$		t_{rr}	25			μs
Reverse recovery time	$I_F = 0.5 \text{ A}$, $I_R = 1.0 \text{ A}$, $I_{rr} = 0.25 \text{ A}$	typical	t_{rr}	0.7			μs
		maximum		1.5			
Maximum forward recovery time	$I_{FM} = 20 \text{ mA}$		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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER	SYMBOL	GI1-1200GP	GI1-1400GP	GI1-1600GP	UNIT	
Typical thermal resistance	$R_{\theta JA}$ ⁽¹⁾	55			$^\circ\text{C/W}$	

Note

⁽¹⁾ Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, PCB 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⁾ AEC-Q101 qualified

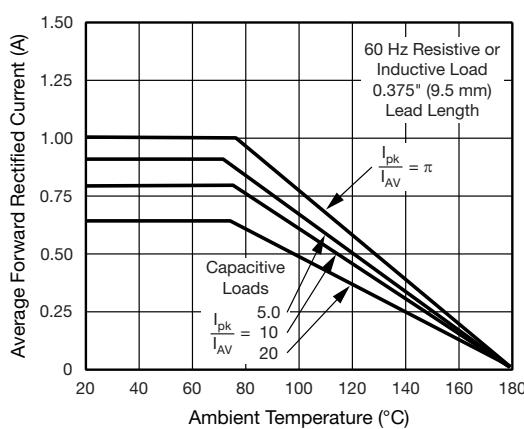
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

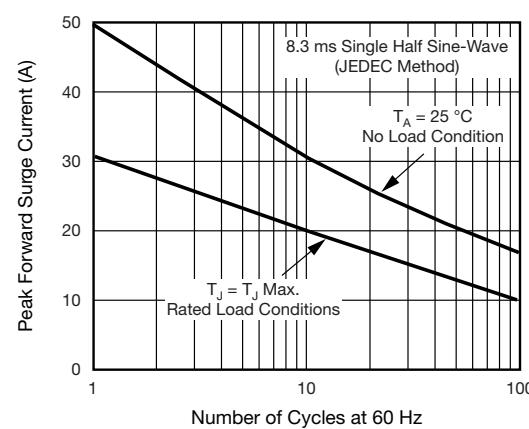
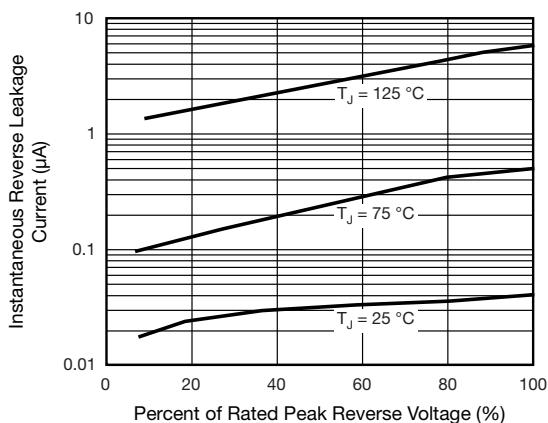
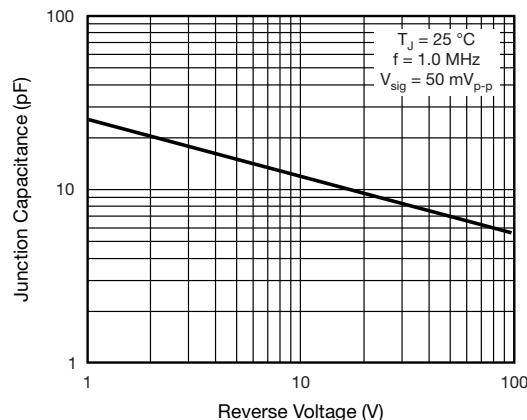
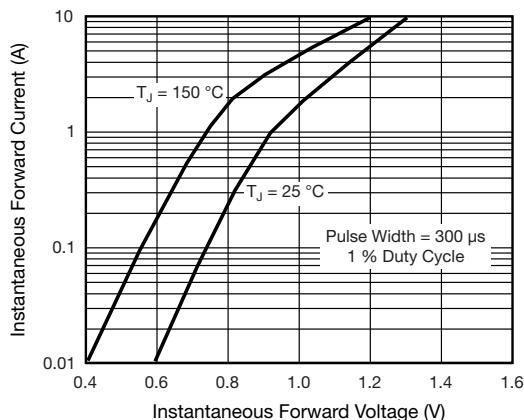
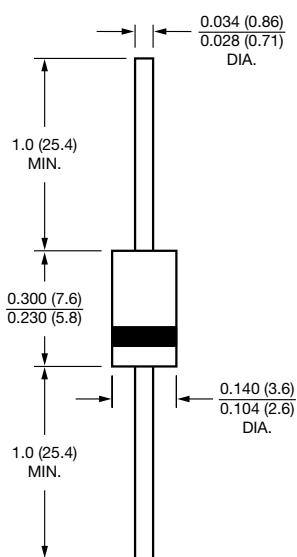


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)


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