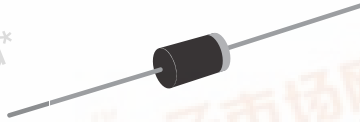


Glass Passivated Junction Rectifier

SUPERECTIFIER®



* 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

- Superectifier structure for high reliability application
- Cavity-free glass-passivated junction
- Low forward voltage drop
- Low leakage current, 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 general purpose rectification of power supplies, inverters, converters and freewheeling diodes application.

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}	200 V to 1000 V
I_{FSM}	50 A
I_R	0.5 μA
V_F	1.2 V
T_J max.	175 °C

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

PARAMETER	SYMBOL	1N5614GP	1N5616GP	1N5618GP	1N5620GP	1N5622GP	UNIT
Maximum repetitive peak reverse voltage ⁽¹⁾	V_{RRM}	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	140	280	420	560	700	V
Maximum DC blocking voltage ⁽¹⁾	V_{DC}	200	400	600	800	1000	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55$ °C	$I_{F(AV)}$	1.0					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load ⁽¹⁾	I_{FSM}	50					A
Operating junction and storage temperature range ⁽¹⁾	T_J, T_{STG}	- 65 to + 175					°C

Note:

(1) JEDEC registered values

1N5614GP thru 1N5622GP

Vishay General Semiconductor



ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS		SYMBOL	1N5614GP	1N5616GP	1N5618GP	1N5620GP	1N5622GP	UNIT
Minimum reverse breakdown voltage ⁽¹⁾	50 μA		V _{BR}	220	440	660	880	1100	V
Maximum instantaneous forward voltage ⁽¹⁾	1.0 A		V _F	1.2					V
Maximum DC reverse current at rated DC blocking voltage ⁽¹⁾		T _A = 25 °C T _A = 100 °C	I _R	0.5 25					μA
Maximum reverse recovery time ⁽¹⁾	I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A		t _{rr}	2.0					μs
Maximum junction capacitance	at 12 V, 1 MHz		C _J	45	35	25	20	15	pF

Note:

(1) JEDEC registered values

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)								
PARAMETER	SYMBOL		1N5614GP	1N5616GP	1N5618GP	1N5620GP	1N5622GP	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
1N5618GP-E3/54	0.425	54	4000	13" diameter paper tape and reel
1N5618GP-E3/73	0.425	73	2000	Ammo pack packaging
1N5618GPHE3/54 ⁽¹⁾	0.425	54	4000	13" diameter paper tape and reel
1N5618GPHE3/73 ⁽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)

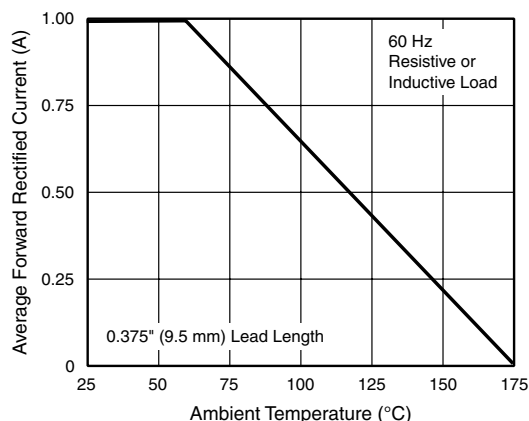


Figure 1. Forward Current Derating Curve

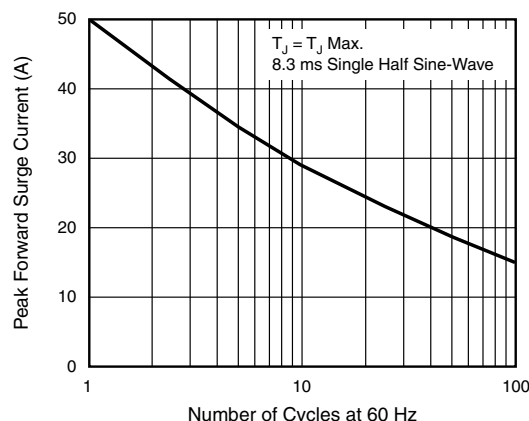


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

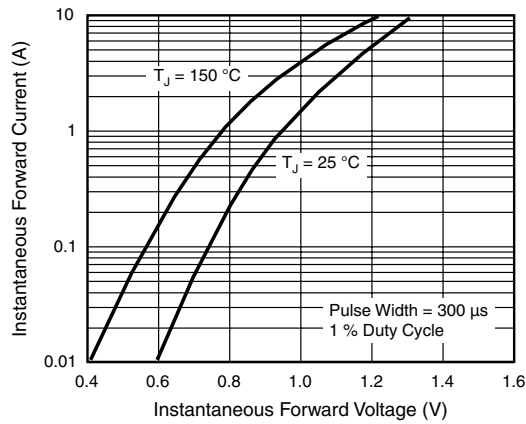


Figure 3. Typical Instantaneous Forward Characteristics

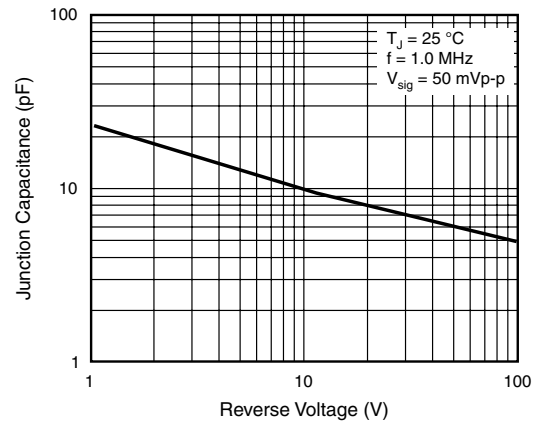


Figure 5. Typical Junction Capacitance

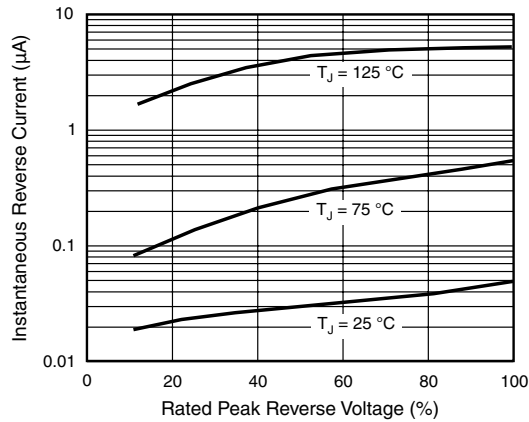
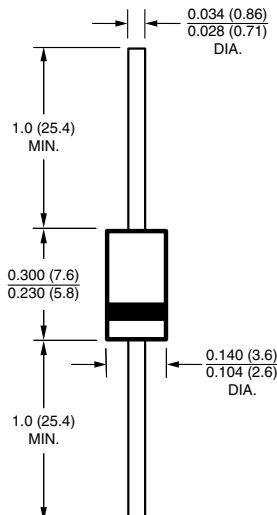


Figure 4. Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)



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