



1N5614GP thru 1N5622GP

Vishay General Semiconductor

Glass Passivated Junction Rectifier

Major Ratings and Characteristics

$I_{F(AV)}$	1.0 A
V_{RRM}	200 V to 1000 V
I_{FSM}	50 A
I_R	0.5 μ A
V_F	1.2 V
T_j max.	175 °C

SUPERRECTIFIER®



DO-204AC (DO-15)

Patented*

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

Features

- Superrectifier structure for High Reliability application
- Cavity-free glass-passivated junction
- Low forward voltage drop
- Low leakage current, I_R less than 0.1 μ A
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder Dip 260 °C, 40 seconds



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-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: Color band denotes cathode end

Typical Applications

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes application

Maximum Ratings

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

Parameter	Symbol	1N5614GP	1N5616GP	1N5618GP	1N5620GP	1N5622GP	Unit
* Maximum repetitive peak reverse voltage	V_{RRM}	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	140	280	420	560	700	V
* Maximum DC blocking voltage	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	I_{FSM}	50					A
* Operating junction temperature range	T_J	- 65 to + 175					°C
* Storage temperature range	T_{STG}	- 65 to + 175					C

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Electrical Characteristics

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

Parameter	Test condition	Symbol	1N5614GP	1N5616GP	1N5618GP	1N5620GP	1N5622GP	Unit
* Minimum reverse breakdown voltage	at 50 μA	V_{BR}	220	440	660	880	1100	V
* Maximum instantaneous forward voltage	at 1.0 A	V_F	1.2					V
* Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 100\text{ }^\circ\text{C}$	I_R	0.5 25					μA
* Maximum reverse recovery time	at $I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $t_{rr} = 0.25\text{ A}$	t_{rr}	2.0					μs
Maximum junction capacitance	at 12 V, 1 MHz	C_J	45	35	25	20	15	pF

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					$^\circ\text{C/W}$

Notes:

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

*JEDEC registered values

Ratings and Characteristics Curves

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

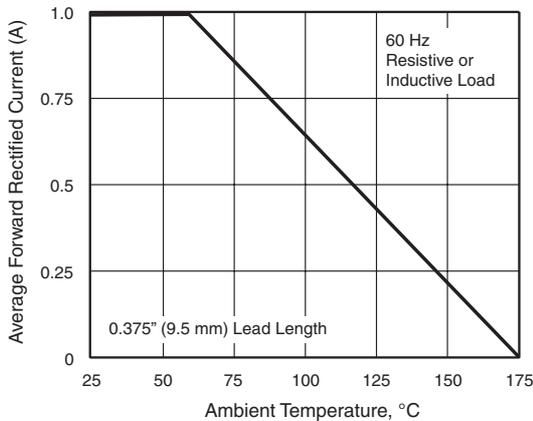


Figure 1. Forward Current Derating Curve

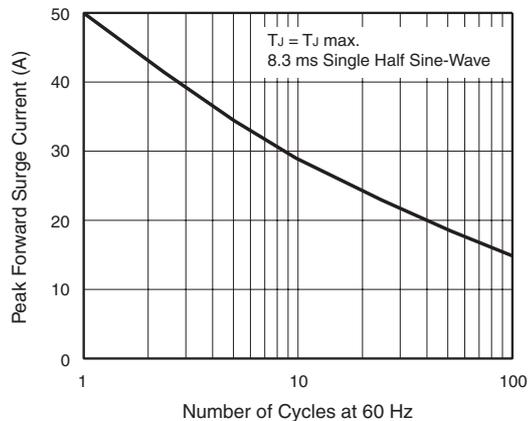


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

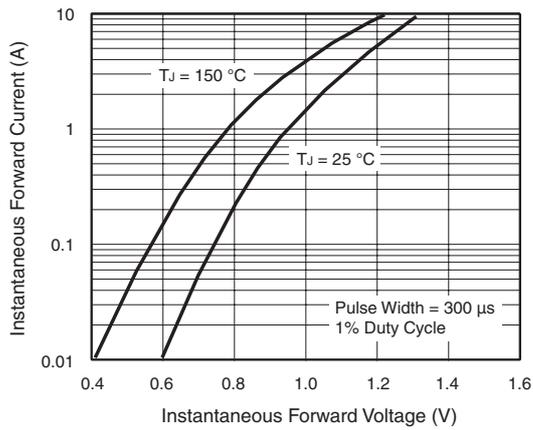


Figure 3. Typical Instantaneous Forward Characteristics

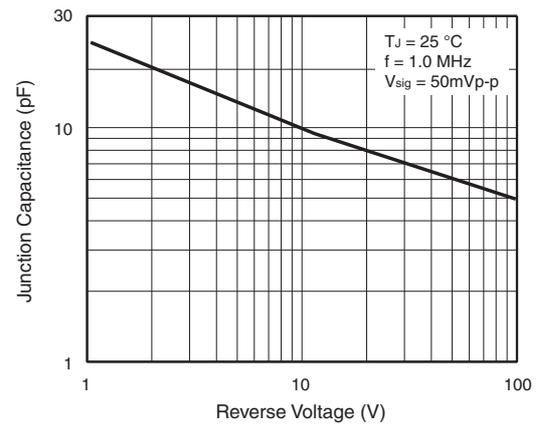


Figure 5. Typical Junction Capacitance

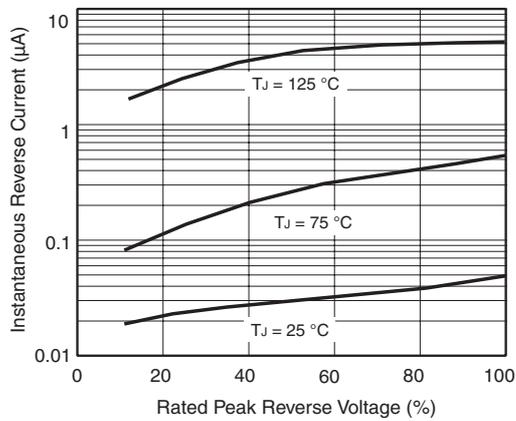
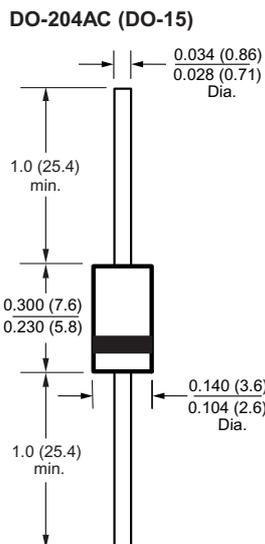


Figure 4. Typical Reverse Characteristics

Package outline dimensions in inches (millimeters)





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