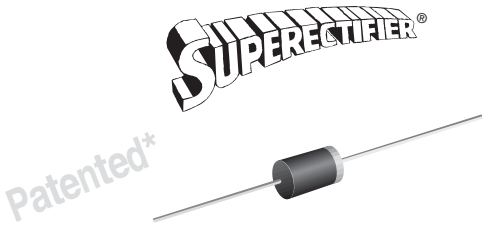
1N4942GP thru 1N4948GP

Vishay General Semiconductor

Glass Passivated Junction Fast Switching Rectifier

Major Ratings and Characteristics

$I_{F(AV)}$	1.0 A
V_{RRM}	200 V to 1000 V
I_{FSM}	25 A
t_{rr}	150 ns, 250 ns, 500 ns
I_R	1.0 µA
V_F	1.3 V
T_j max.	175 °C



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

DO-204AL (DO-41)

Features

- Superectifier structure for High Reliability condition
- Cavity-free glass-passivated junction
- Fast switching for high efficiency
- Low leakage current
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder Dip 260 °C, 40 seconds

Mechanical Data

Case: DO-204AL, 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 fast switching rectification of power supply, inverters, converters and freewheeling diodes for consumer, automotive and Telecommunication

Maximum Ratings

(T_A = 25 °C unless otherwise noted)

Parameter	Symbol	1N4942GP	1N4944GP	1N4946GP	1N4947GP	1N4948GP	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}	25					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 condition	Symbol	1N4942GP	1N4944GP	1N4946GP	1N4947GP	1N4948GP	Unit
Maximum instantaneous forward voltage	at 1.0 A	V_F	1.3					V
Maximum DC reverse current at rated DC blocking voltage	T_A= 25°C T_A= 150 °C	I_R	1.0 200					µA
Maximum reverse recovery time	at I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	t_{rr}	150		250		500	ns
Typical junction capacitance	at 4.0 V, 1 MHz	C_J	15					pF

Thermal Characteristics

(T_A = 25 °C unless otherwise noted)

Parameter	Symbol	1N4942GP	1N4944GP	1N4946GP	1N4947GP	1N4948GP	Unit
Typical thermal resistance (1)	$R_{\theta JA}$	55					°C/W

Notes:

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

Ratings and Characteristics Curves

(T_A = 25 °C unless otherwise noted)

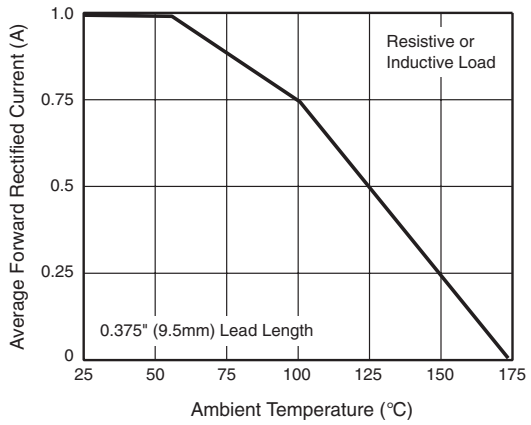


Figure 1. Forward Current Derating Curve

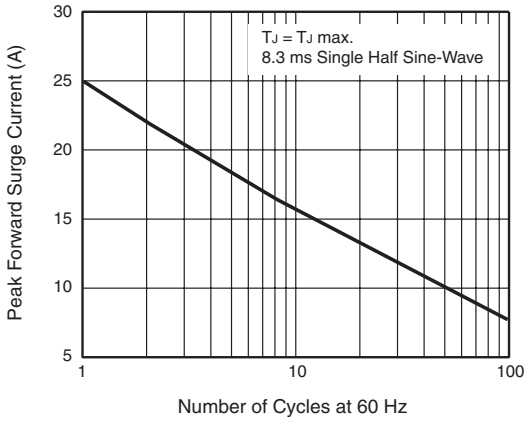


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

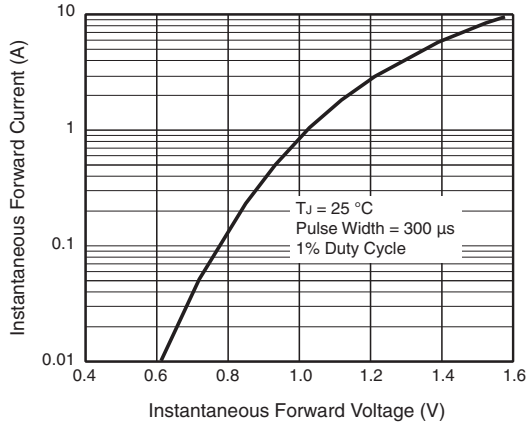


Figure 3. Typical Instantaneous Forward Characteristics

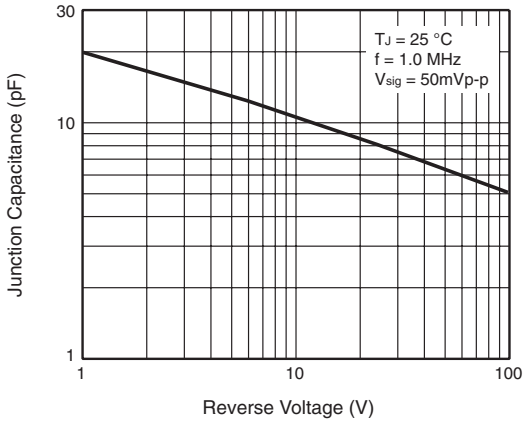


Figure 5. Typical Junction Capacitance

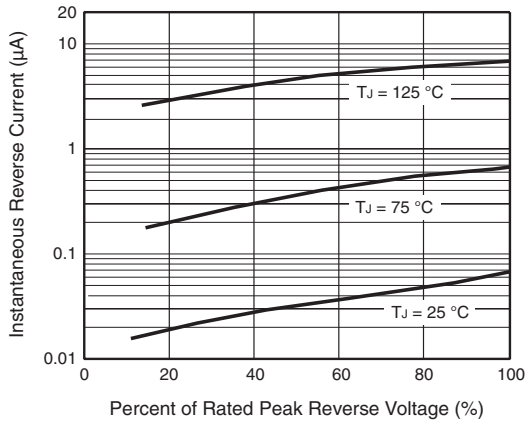


Figure 4. Typical Reverse Characteristics

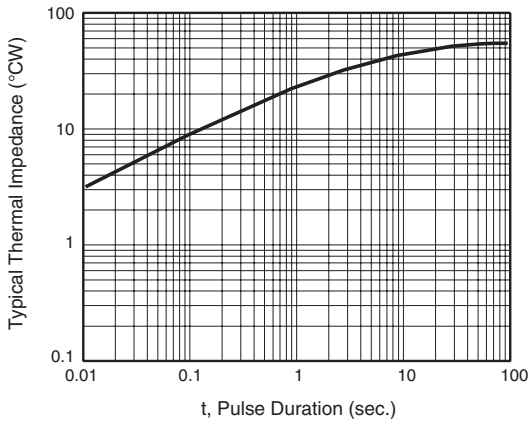


Figure 6. Typical Transient Thermal Impedance

Package outline dimensions in inches (millimeters)

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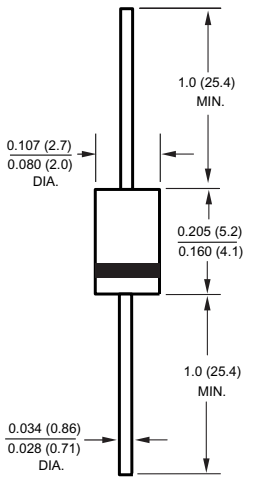

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