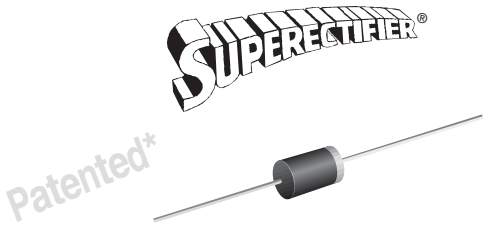
Glass Passivated Junction Rectifier

Major Ratings and Characteristics

$I_{F(AV)}$	1.0 A
V_{RRM}	200 V to 1000 V
I_{FSM}	25 A
I_R	1.0 µA
V_F	1.2 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 application
- Cavity-free glass-passivated junction
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder Dip 260 °C, 40 seconds

Typical Applications

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

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

Maximum Ratings

(T_A = 25 °C unless otherwise noted)

Parameter	Symbol	1N4245GP	1N4246GP	1N4247GP	1N4248GP	1N4249GP	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
* Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at T_A = 55 °C	$I_{R(AV)}$	50					µA
* Operating junction temperature range	T_J	- 65 to + 160					°C
* Storage temperature range	T_{STG}	- 65 to + 175					°C

Electrical Characteristics

(T_A = 25 °C unless otherwise noted)

Parameter	Test condition	Symbol	1N4245GP	1N4246GP	1N4247GP	1N4248GP	1N4249GP	Unit
* Maximum instantaneous forward voltage	at 1.0 A	V_F	1.2					V
* Maximum reverse current at rated DC blocking voltage	T_A = 25 °C T_A = 125 °C	I_R	1.0 25					µA
Typical junction capacitance	at 4.0 V, 1 MHz	C_J	8.0					pF

Thermal Characteristics

(T_A = 25 °C unless otherwise noted)

Parameter	Symbol	1N4245GP	1N4246GP	1N4247GP	1N4248GP	1N4249GP	Unit
Typical thermal resistance(1)	$R_{\theta JA}$ $R_{\theta JL}$	55 25					°C/W

Notes:

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

Ratings and Characteristics Curves

(T_A = 25 °C unless otherwise noted)

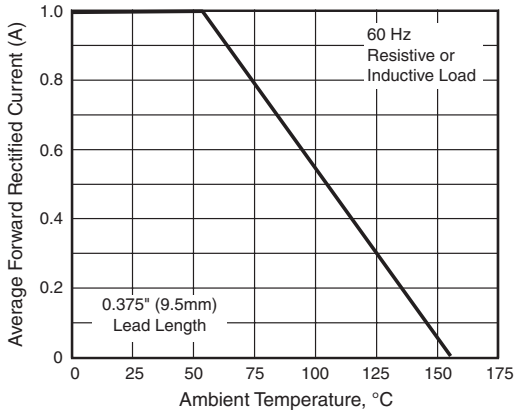


Figure 1. Forward Current Derating Curve

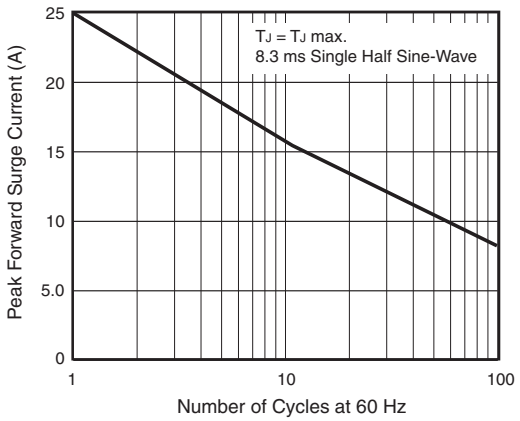


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

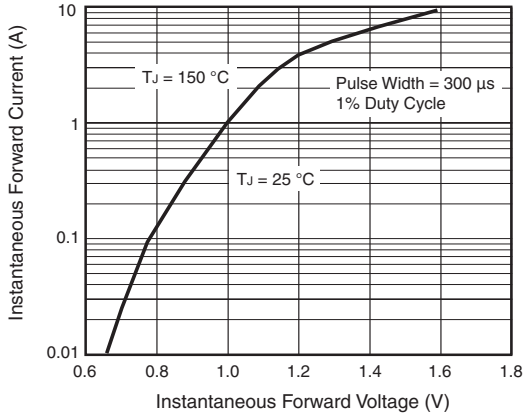


Figure 3. Typical Instantaneous Forward Characteristics

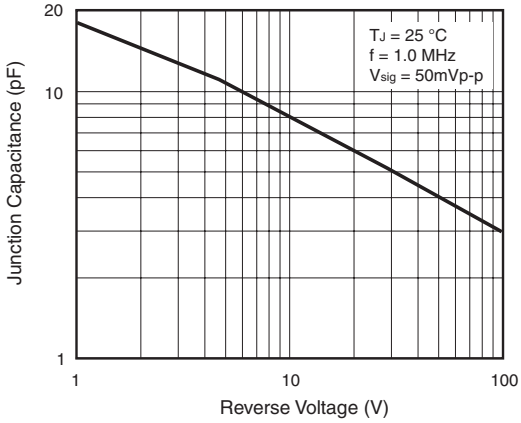


Figure 5. Typical Junction Capacitance

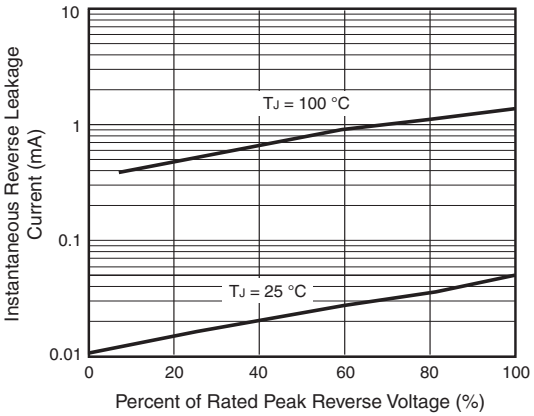


Figure 4. Typical Reverse Characteristics

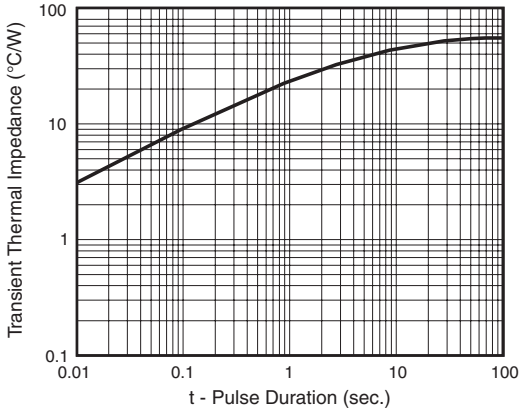
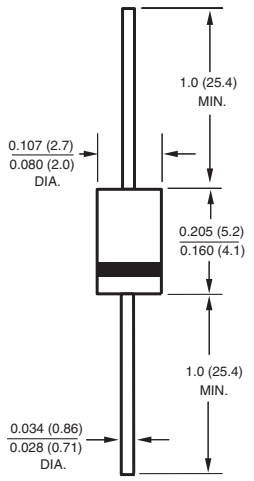


Figure 6. Typical Transient Thermal Impedance

Package outline dimensions in inches (millimeters)

DO-204AL (DO-41)



NOTE: Lead diameter is 0.026 (0.66) / 0.023 (0.58) for suffix "E" part numbers

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