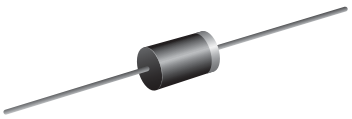
Glass Passivated Junction Rectifier

SUPERECTIFIER®



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 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to 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-204AL, 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}	200 V to 1000 V
I_{FSM}	25 A
I_R	1.0 µA
V_F	1.2 V
T_J max.	175 °C

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted) (1)							
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

Note
(1) JEDEC registered values

For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS		SYMBOL	1N4245GP	1N4246GP	1N4247GP	1N4248GP	1N4249GP	UNIT
Maximum instantaneous forward voltage	1.0 A		V_F (1)	1.2					V
Maximum reverse current at rated DC blocking voltage		T_A = 25 °C	I_R (1)	1.0					µA
		T_A = 125 °C		25					
Typical junction capacitance	4.0 V, 1 MHz		C_J	8.0					pF

Note

(1) JEDEC registered values

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	1N4245GP	1N4246GP	1N4247GP	1N4248GP	1N4249GP	UNIT
Typical thermal resistance	$R_{\theta JA}$ (1)	55					°C/W
	$R_{\theta JL}$ (1)	25					

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
1N4247GP-E3/54	0.335	54	5500	13" diameter paper tape and reel
1N4247GP-E3/73	0.335	73	3000	Ammo pack packaging
1N4247GPHE3/54 (1)	0.335	54	5500	13" diameter paper tape and reel
1N4247GPHE3/73 (1)	0.335	73	3000	Ammo pack packaging

Note

(1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

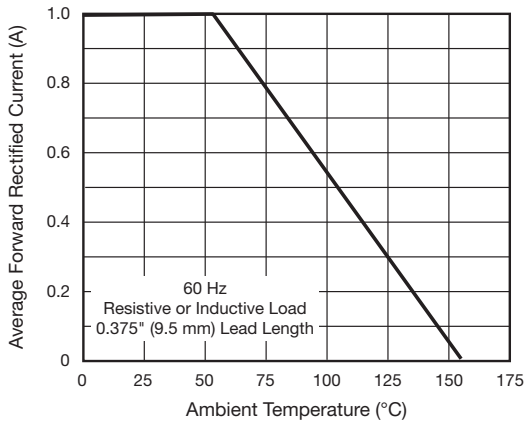


Fig. 1 - Forward Current Derating Curve

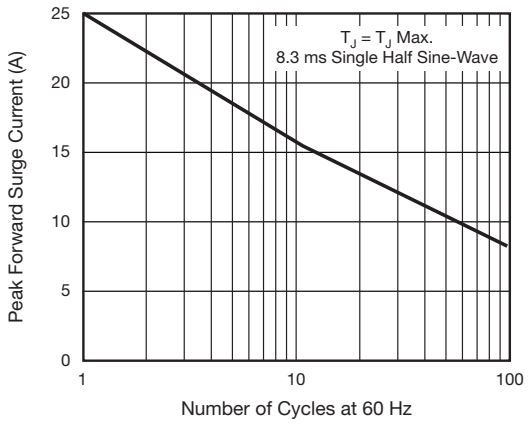


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

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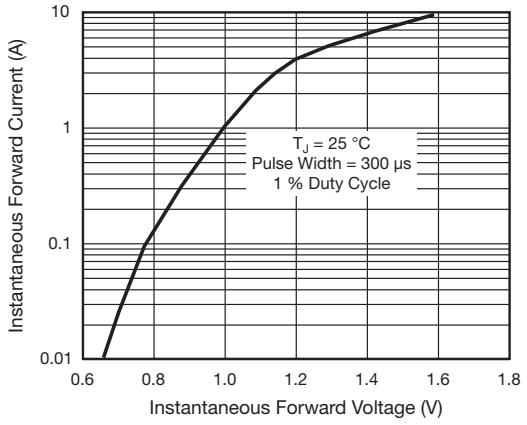


Fig. 3 - Typical Instantaneous Forward Characteristics

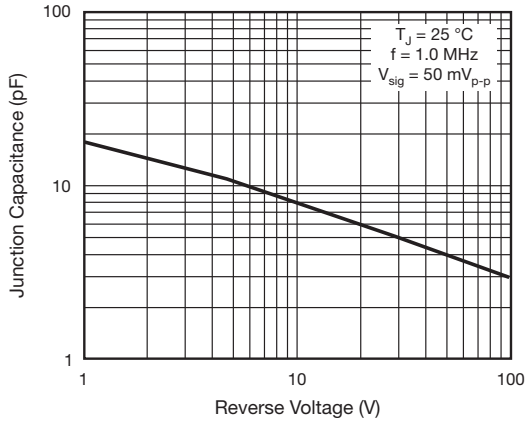


Fig. 5 - Typical Junction Capacitance

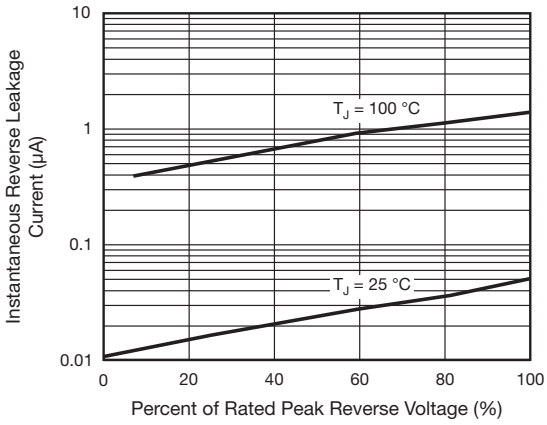


Fig. 4 - Typical Reverse Characteristics

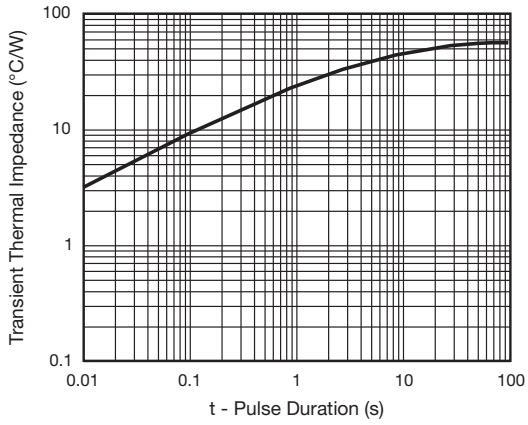
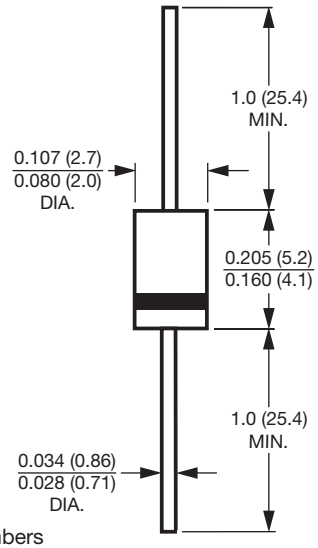


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)



Note

• Lead diameter is $\frac{0.026\ (0.66)}{0.023\ (0.58)}$ for suffix “E” part numbers

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