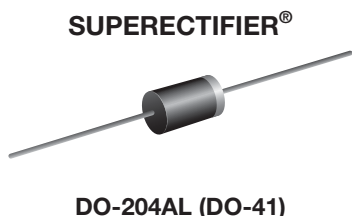


## Glass Passivated Junction Rectifier



### 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 $\mu$ A     |
| $V_F$                   | 1.2 V           |
| $T_J$ max.              | 175 °C          |

| MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted) <sup>(1)</sup>                                |             |               |          |          |          |          |         |
|--------------------------------------------------------------------------------------------------------------|-------------|---------------|----------|----------|----------|----------|---------|
| 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<br>0.375" (9.5 mm) lead length at $T_A = 55\text{ °C}$             | $I_{F(AV)}$ | 1.0           |          |          |          |          | A       |
| Peak forward surge current 8.3 ms single half<br>sine-wave superimposed on rated load                        | $I_{FSM}$   | 25            |          |          |          |          | A       |
| Maximum full load reverse current, full cycle<br>average 0.375" (9.5 mm) lead length at $T_A = 55\text{ °C}$ | $I_{R(AV)}$ | 50            |          |          |          |          | $\mu$ A |
| Operating junction temperature range                                                                         | $T_J$       | - 65 to + 160 |          |          |          |          | °C      |
| Storage temperature range                                                                                    | $T_{STG}$   | - 65 to + 175 |          |          |          |          | °C      |

#### Note

<sup>(1)</sup> JEDEC registered values

# 1N4245GP thru 1N4249GP

Vishay General Semiconductor



| ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                 |                         |                               |          |          |          |          |          |      |
|----------------------------------------------------------------------------|-----------------|-------------------------|-------------------------------|----------|----------|----------|----------|----------|------|
| PARAMETER                                                                  | TEST CONDITIONS |                         | SYMBOL                        | 1N4245GP | 1N4246GP | 1N4247GP | 1N4248GP | 1N4249GP | UNIT |
| Maximum instantaneous forward voltage                                      | 1.0 A           |                         | V <sub>F</sub> <sup>(1)</sup> | 1.2      |          |          |          |          | V    |
| Maximum reverse current at rated DC blocking voltage                       |                 | T <sub>A</sub> = 25 °C  | I <sub>R</sub> <sup>(1)</sup> | 1.0      |          |          |          |          | μA   |
|                                                                            |                 | T <sub>A</sub> = 125 °C |                               | 25       |          |          |          |          |      |
| Typical junction capacitance                                               | 4.0 V, 1 MHz    |                         | C <sub>J</sub>                | 8.0      |          |          |          |          | pF   |

## Note

(1) JEDEC registered values

| THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                                 |          |          |          |          |          |      |
|-------------------------------------------------------------------------|---------------------------------|----------|----------|----------|----------|----------|------|
| PARAMETER                                                               | SYMBOL                          | 1N4245GP | 1N4246GP | 1N4247GP | 1N4248GP | 1N4249GP | UNIT |
| Typical thermal resistance                                              | R <sub>θJA</sub> <sup>(1)</sup> | 55       |          |          |          |          | °C/W |
|                                                                         | R <sub>θJL</sub> <sup>(1)</sup> | 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

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

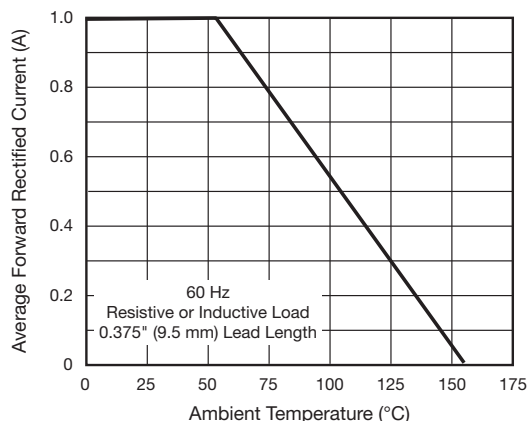


Fig. 1 - Forward Current Derating Curve

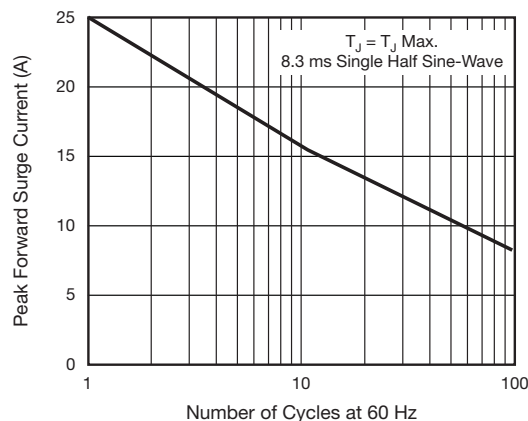


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

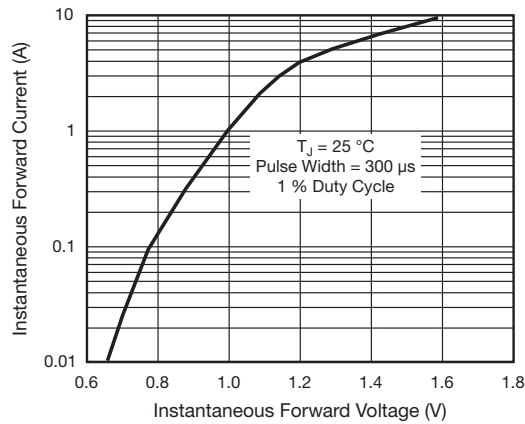


Fig. 3 - Typical Instantaneous Forward Characteristics

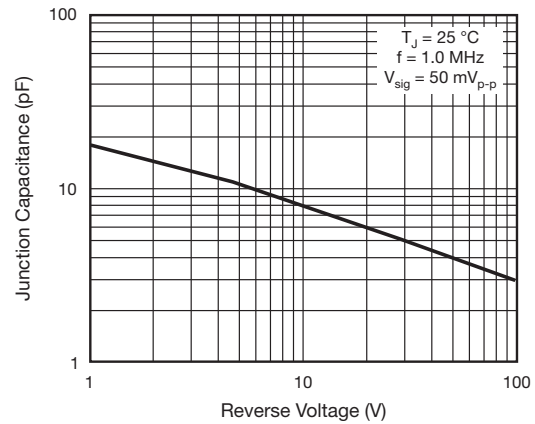


Fig. 5 - Typical Junction Capacitance

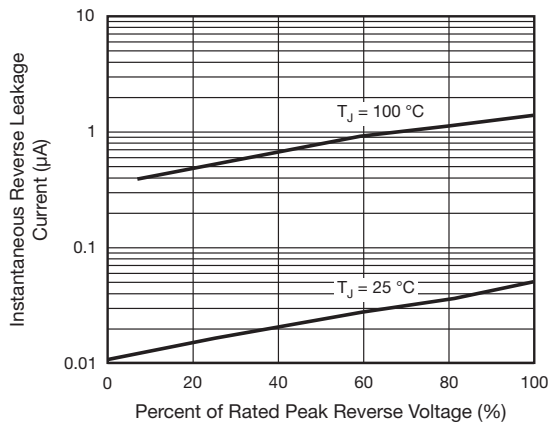


Fig. 4 - Typical Reverse Characteristics

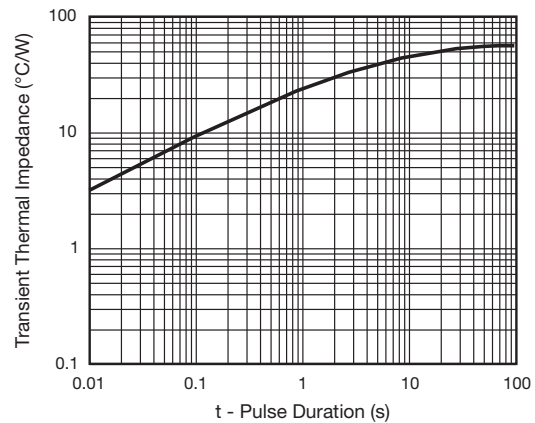
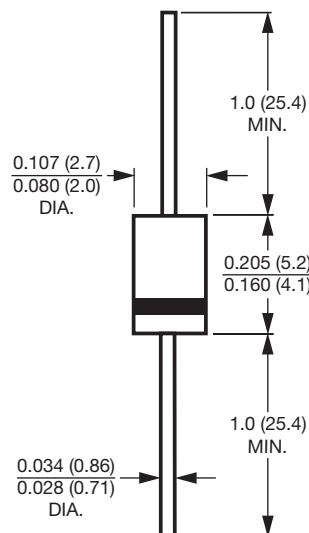


Fig. 6 - Typical Transient Thermal Impedance

### 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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