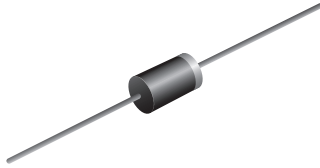




## Glass Passivated Junction Plastic Rectifier

**SUPERECTIFIER®**



**DO-204AC (DO-15)**

### FEATURES

- Superectifier structure for high reliability application
- Cavity-free glass-passivated junction
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

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

### MECHANICAL DATA

**Case:** DO-204AC, molded epoxy over glass body  
Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

**Polarity:** Color band denotes cathode end

| PRIMARY CHARACTERISTICS |                            |
|-------------------------|----------------------------|
| $I_{F(AV)}$             | 1.0 A                      |
| $V_{RRM}$               | 200 V, 400 V, 600 V, 800 V |
| $I_{FSM}$               | 50 A                       |
| $I_R$                   | 5.0 $\mu$ A                |
| $V_F$                   | 1.2 V                      |
| $T_J$ max.              | 175 °C                     |
| Package                 | DO-204AC (DO-15)           |
| Diode variations        | Single die                 |

| MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)                                   |                      |             |          |          |          |         |
|--|----------------------|-------------|----------|----------|----------|---------|
| PARAMETER  | SYMBOL               | 1N5059GP    | 1N5060GP | 1N5061GP | 1N5062GP | UNIT    |
| Maximum repetitive peak reverse voltage  | $V_{RRM}^{(1)}$      | 200         | 400      | 600      | 800      | V       |
| Maximum RMS voltage  | $V_{RMS}$            | 140         | 280      | 420      | 560      | V       |
| Maximum DC blocking voltage  | $V_{DC}^{(1)}$       | 200         | 400      | 600      | 800      | V       |
| Maximum average forward rectified current<br>0.375" (9.5 mm) lead length at $T_A = 75\text{ °C}$ | $I_{F(AV)}^{(1)}$    | 1.0         |          |          |          | A       |
| Peak forward surge current 8.3 ms single half<br>sine-wave superimposed on rated load            | $I_{FSM}^{(1)}$      | 50          |          |          |          | A       |
| Maximum full load reverse current, full cycle<br>average 0.375" (9.5 mm) lead length at          | $T_A = 25\text{ °C}$ | 5.0         |          |          |          | $\mu$ A |
|  | $T_A = 75\text{ °C}$ | 150         |          |          |          |         |
| Operating junction and storage temperature range   | $T_J, T_{STG}$       | -65 to +175 |          |          |          | °C      |

#### Note

(1) JEDEC® registered values



| ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |  |                        |                               |          |          |          |          |      |
|--|--|------------------------|-------------------------------|----------|----------|----------|----------|------|
| PARAMETER  | TEST CONDITIONS  |                        | SYMBOL                        | 1N5059GP | 1N5060GP | 1N5061GP | 1N5062GP | UNIT |
| Max. instantaneous forward voltage   | 1.0 A  | T <sub>A</sub> = 75 °C | V <sub>F</sub> <sup>(1)</sup> | 1.2      |          |          |          | V    |
| Maximum DC reverse current at rated DC blocking voltage                    | T <sub>A</sub> = 25 °C   |                        | I <sub>R</sub> <sup>(1)</sup> | 5.0      |          |          |          | μA   |
|  | T <sub>A</sub> = 175 °C  |                        |                               | 300      |          |          |          |      |
| Typical reverse recovery time  | I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A |                        | t <sub>rr</sub>               | 2.0      |          |          |          | μs   |
| Typical junction capacitance   | 4.0 V, 1 MHz   |                        | C <sub>J</sub>                | 15       |          |          |          | pF   |

**Note**

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

| THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                                 |          |          |          |          |      |      |
|---|---------------------------------|----------|----------|----------|----------|------|------|
| PARAMETER   | SYMBOL                          | 1N5059GP | 1N5060GP | 1N5061GP | 1N5062GP | UNIT |      |
| Typical thermal resistance  | R <sub>θJA</sub> <sup>(1)</sup> | 45       |          |          |          |      | °C/W |
|   | R <sub>θJL</sub> <sup>(1)</sup> | 20       |          |          |          |      |      |

**Note**

<sup>(1)</sup> 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                    |
| 1N5061GP-E3/54                 | 0.425           | 54                     | 4000          | 13" diameter paper tape and reel |
| 1N5061GP-E3/73                 | 0.425           | 73                     | 2000          | Ammo pack packaging              |

**RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)**

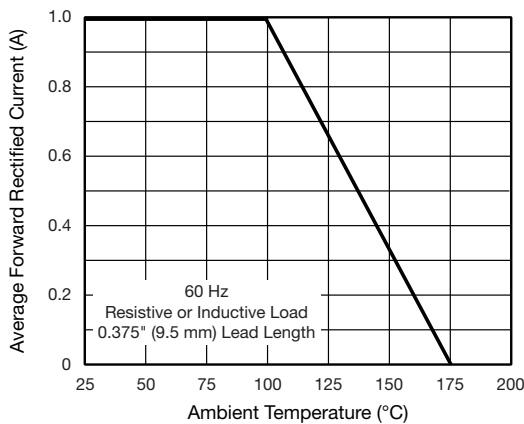


Fig. 1 - Forward Current Derating Curve

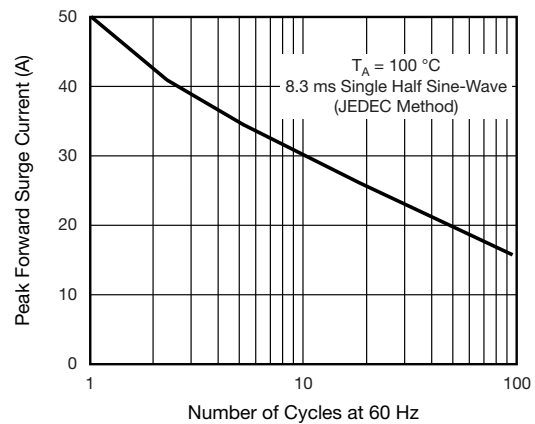


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

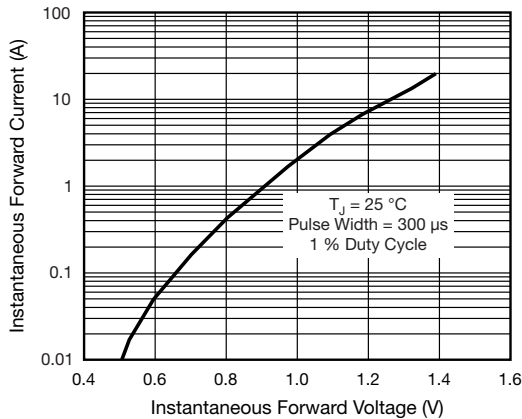


Fig. 3 - Typical Instantaneous Forward Characteristics

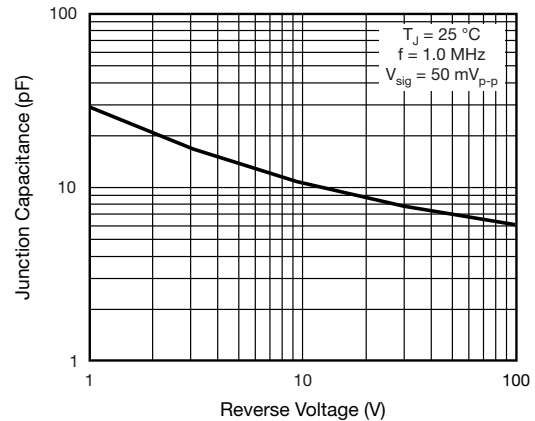


Fig. 5 - Typical Junction Capacitance

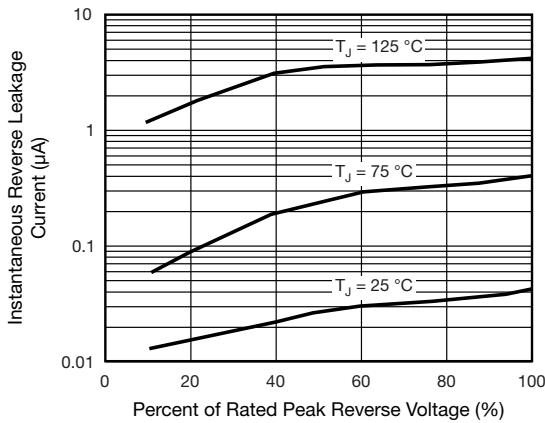


Fig. 4 - Typical Reverse Characteristics

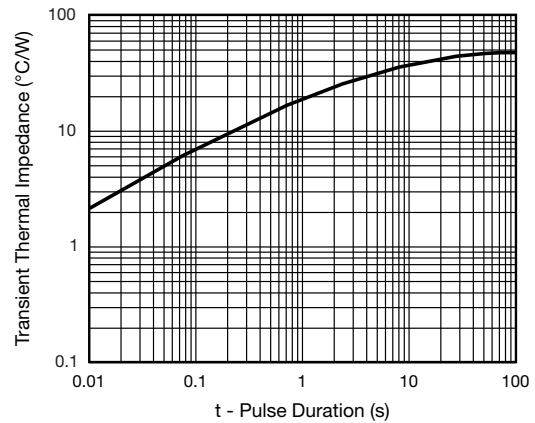
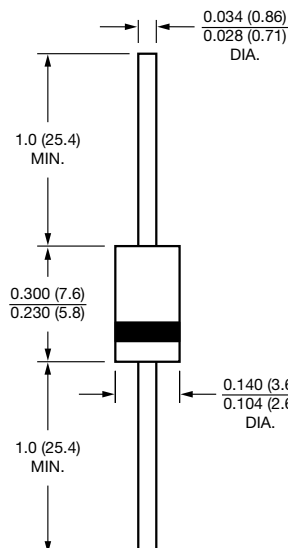


Fig. 6 - Typical Transient Thermal Impedance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### DO-204AC (DO-15)





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