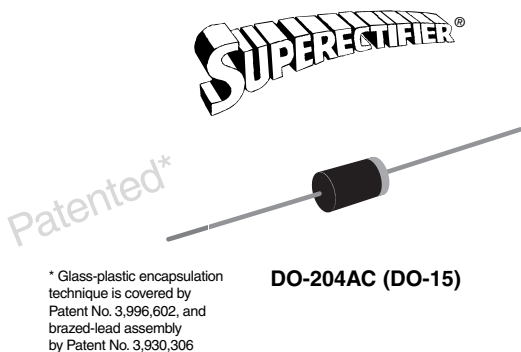


## Glass Passivated Junction Rectifier



### 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 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and 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-204AC, molded epoxy over glass body  
Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), 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 800 V |
| $I_{FSM}$               | 50 A           |
| $I_R$                   | 5.0 $\mu$ A    |
| $V_F$                   | 1.2 V          |
| $T_J$ max.              | 175 °C         |

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

**Note:**

(1) JEDEC registered values

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

| PARAMETER                                                              | TEST CONDITIONS                                                           | SYMBOL   | 1N5059GP   | 1N5060GP | 1N5061GP | 1N5062GP | UNIT          |
|------------------------------------------------------------------------|---------------------------------------------------------------------------|----------|------------|----------|----------|----------|---------------|
| Max. instantaneous forward voltage <sup>(1)</sup>                      | 1.0 A, $T_A = 75\text{ }^{\circ}\text{C}$                                 | $V_F$    | 1.2        |          |          |          | V             |
| Maximum DC reverse current at rated DC blocking voltage <sup>(1)</sup> | $T_A = 25\text{ }^{\circ}\text{C}$<br>$T_A = 175\text{ }^{\circ}\text{C}$ | $I_R$    | 5.0<br>300 |          |          |          | $\mu\text{A}$ |
| Typical reverse recovery time                                          | $I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ ,<br>$t_{rr} = 0.25\text{ A}$ | $t_{rr}$ | 2.0        |          |          |          | $\mu\text{s}$ |
| Typical junction capacitance                                           | 4.0 V, 1 MHz                                                              | $C_J$    | 15         |          |          |          | pF            |

**Note:**

(1) JEDEC registered values

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

| PARAMETER                                 | SYMBOL                             | 1N5059GP | 1N5060GP | 1N5061GP | 1N5062GP | UNIT                 |
|-------------------------------------------|------------------------------------|----------|----------|----------|----------|----------------------|
| Typical thermal resistance <sup>(1)</sup> | $R_{\theta JA}$<br>$R_{\theta JL}$ | 45<br>20 |          |          |          | $^{\circ}\text{C/W}$ |

**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                    |
|-------------------------------|-----------------|------------------------|---------------|----------------------------------|
| 1N5061GP-E3/54                | 0.425           | 54                     | 4000          | 13" diameter paper tape and reel |
| 1N5061GP-E3/73                | 0.425           | 73                     | 2000          | Ammo pack packaging              |
| 1N5061GPHE3/54 <sup>(1)</sup> | 0.425           | 54                     | 4000          | 13" diameter paper tape and reel |
| 1N5061GPHE3/73 <sup>(1)</sup> | 0.425           | 73                     | 2000          | Ammo pack packaging              |

**Note:**

(1) Automotive grade AEC Q101 qualified

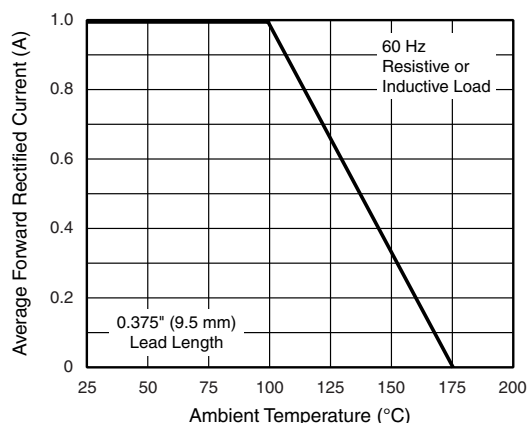
**RATINGS AND CHARACTERISTICS CURVES**( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Figure 1. Forward Current Derating Curve

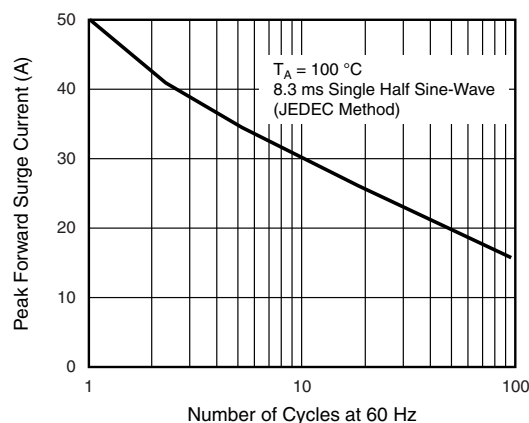


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

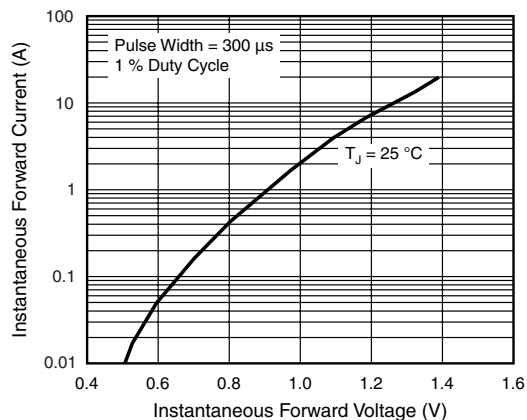


Figure 3. Typical Instantaneous Forward Characteristics

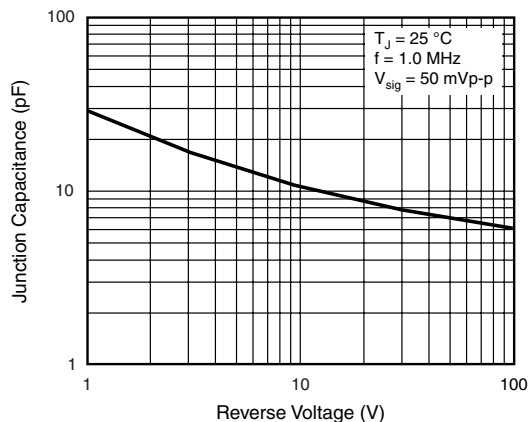


Figure 5. Typical Junction Capacitance

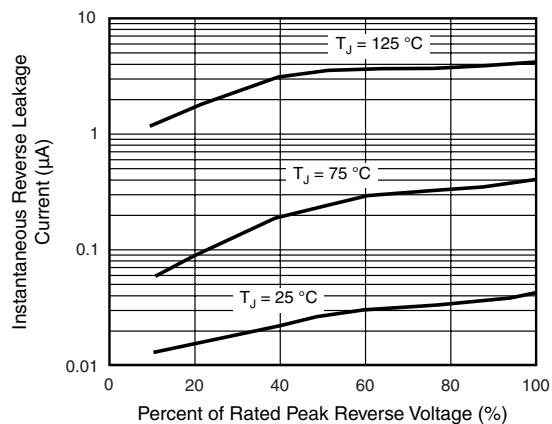


Figure 4. Typical Reverse Characteristics

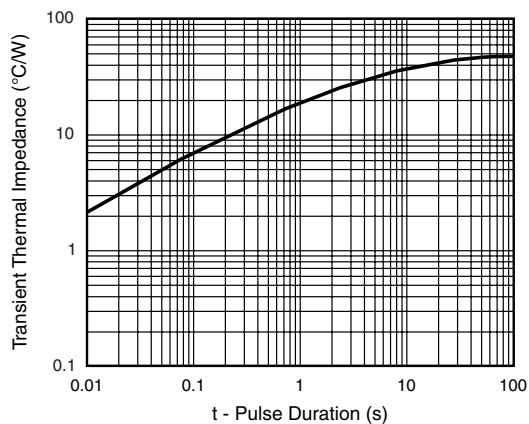
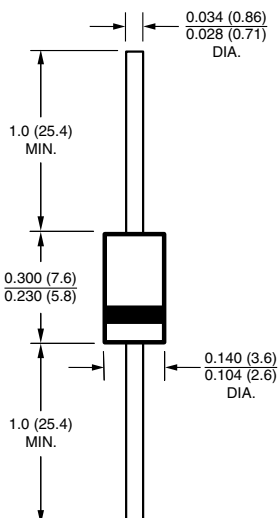


Figure 6. Typical Transient Thermal Impedance

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

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





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