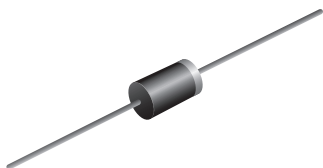


# Miniature Clamper/Damper Glass Passivated Plastic Rectifier

**SUPERECTIFIER®**

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

## FEATURES

- Superectifier structure
- Cavity-free glass passivated junction
- Low forward voltage drop
- Typical  $I_R$  less than 0.1  $\mu A$
- 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 high voltage rectification of power supplies, inverters, converters and freewheeling diodes specially designed for clamping circuits, horizontal deflection systems, and damper applications.

## 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

|                  |                  |
|------------------|------------------|
| $I_{F(AV)}$      | 1.5 A            |
| $V_{RRM}$        | 1400 V, 1500 V   |
| $I_{FSM}$        | 40 A             |
| $I_R$            | 5.0 $\mu A$      |
| $V_F$            | 1.1 V            |
| $T_J$ max.       | 175 °C           |
| Package          | DO-204AC (DO-15) |
| Diode variations | Single die       |

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

| PARAMETER                                                                                              | SYMBOL         | CGP15         | DGP15 | UNIT    |
|--------------------------------------------------------------------------------------------------------|----------------|---------------|-------|---------|
| Maximum repetitive peak reverse voltage                                                                | $V_{RRM}$      | 1400          | 1500  | V       |
| Maximum RMS voltage                                                                                    | $V_{RMS}$      | 980           | 1050  | V       |
| Maximum DC blocking voltage                                                                            | $V_{DC}$       | 1400          | 1500  | V       |
| Maximum average forward rectified current<br>0.375" (9.5 mm) lead length at $T_A = 50$ °C              | $I_{F(AV)}$    | 1.5           |       | A       |
| Peak forward surge current 8.3 ms single half sine-wave<br>superimposed on rated load                  | $I_{FSM}$      | 40            |       | A       |
| Maximum full load reverse current, full cycle average<br>0.375" (9.5 mm) lead length at $T_A = 100$ °C | $I_{R(AV)}$    | 50            |       | $\mu A$ |
| Operating junction and storage temperature range                                                       | $T_J, T_{STG}$ | - 65 to + 175 |       | °C      |

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

| PARAMETER                             | TEST CONDITIONS                                                           | SYMBOL      | CGP15 | DGP15 | UNIT          |
|---------------------------------------|---------------------------------------------------------------------------|-------------|-------|-------|---------------|
| Maximum instantaneous forward voltage | $I_F = 1.0\text{ A}$                                                      | $V_F^{(1)}$ | 1.1   |       | V             |
| Maximum reverse current               | Rated $V_R$                                                               | $I_R$       | 5.0   |       | $\mu\text{A}$ |
|                                       |                                                                           |             | 100   |       |               |
| Maximum reverse recovery time         | $I_F = 0.5\text{ A}$ , $I_R = 50\text{ mA}$                               | $t_{rr}$    | 15    | 20    | $\mu\text{s}$ |
| Reverse recovery time                 | $I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ ,<br>$I_{rr} = 0.25\text{ A}$ | typical     | 1.0   |       | $\mu\text{s}$ |
|                                       |                                                                           | maximum     | 1.5   |       |               |
| Typical junction capacitance          | 4.0 V, 1 MHz                                                              | $C_J$       | 15    |       | pF            |

**Note**(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle**THERMAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

| PARAMETER                  | SYMBOL                | CGP15 | DGP15 | UNIT                 |
|----------------------------|-----------------------|-------|-------|----------------------|
| Typical thermal resistance | $R_{\theta JA}^{(1)}$ | 55    |       | $^{\circ}\text{C/W}$ |

**Note**

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, PCB mounted

**ORDERING INFORMATION** (Example)

| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                    |
|---------------|-----------------|------------------------|---------------|----------------------------------|
| CGP15-E3/54   | 0.425           | 54                     | 4000          | 13" diameter paper tape and reel |
| CGP15-E3/73   | 0.425           | 73                     | 2000          | Ammo pack packaging              |

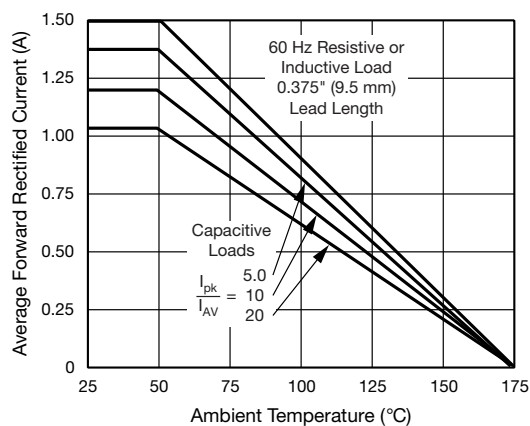
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

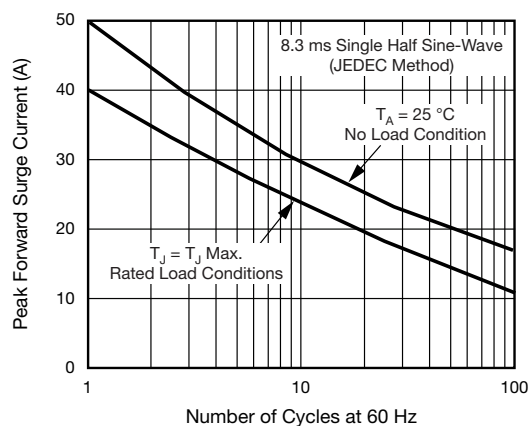


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

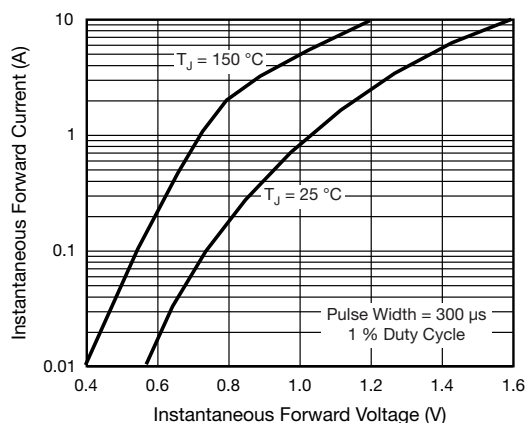


Fig. 3 - Typical Instantaneous Forward Characteristics

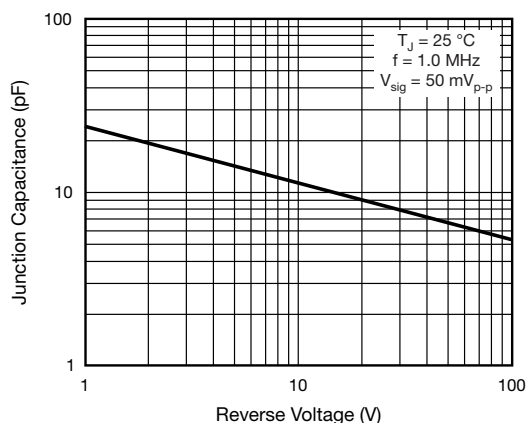


Fig. 5 - Typical Junction Capacitance

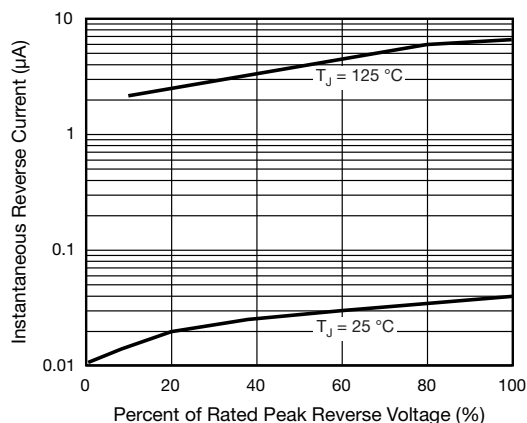
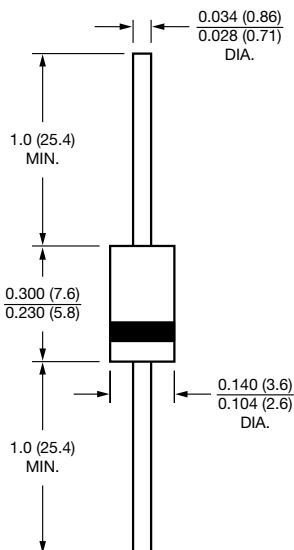


Fig. 4 - Typical Reverse Characteristics

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

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





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