



## Clamper/Damper Glass Passivated Plastic Rectifier



### FEATURES

- Superrectifier structure
- Cavity-free glass passivated junction
- Low forward voltage drop
- Typical  $I_R$  less than 0.1  $\mu\text{A}$
- 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)



### 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-201AD, 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 |                   |
|-------------------------|-------------------|
| $I_{F(AV)}$             | 3.0 A             |
| $V_{RRM}$               | 1400 V, 1500 V    |
| $I_{FSM}$               | 100 A             |
| $I_R$                   | 5.0 $\mu\text{A}$ |
| $V_F$                   | 1.2 V             |
| $T_J$ max.              | 175 °C            |
| Package                 | DO-201AD          |
| Circuit configuration   | Single            |

| MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)   |                |             |       |               |
|--|----------------|-------------|-------|---------------|
| PARAMETER  | SYMBOL         | CGP30       | DGP30 | 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 lengths at $T_A = 50\text{ °C}$            | $I_{F(AV)}$    | 3.0         |       | A             |
| Peak forward surge current 8.3 ms single half<br>sine-wave superimposed on rated load                        | $I_{FSM}$      | 100         |       | A             |
| Maximum full load reverse current, full cycle average<br>0.375" (9.5 mm) lead length at $T_A = 70\text{ °C}$ | $I_{R(AV)}$    | 200         |       | $\mu\text{A}$ |
| Operating junction and storage temperature range   | $T_J, T_{STG}$ | -65 to +175 |       | °C            |



| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) |  |             |                                   |       |               |
|--|--|-------------|-----------------------------------|-------|---------------|
| PARAMETER  | TEST CONDITIONS  | SYMBOL      | CGP30                             | DGP30 | UNIT          |
| Maximum instantaneous forward voltage  | $I_F = 3.0\text{ A}$   | $V_F^{(1)}$ | 1.2                               |       | V             |
| Maximum reverse current  | Rated $V_R$  | $I_R$       | $T_A = 25\text{ }^\circ\text{C}$  |       | 5.0           |
|  |  |             | $T_A = 100\text{ }^\circ\text{C}$ |       | 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  | $I_F = 0.5\text{ A}, I_R = 1.0\text{ A}, I_{rr} = 0.25\text{ A}$ | $t_{rr}$    | Typical                           |       | 1.0           |
|  |  |             | Maximum                           |       | 2.0           |
| Typical junction capacitance   | 4.0 V, 1 MHz   | $C_J$       | 40                                |       | pF            |

**Note**

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

| <b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) |                       |       |       |                    |
|---|-----------------------|-------|-------|--------------------|
| PARAMETER   | SYMBOL                | CGP30 | DGP30 | UNIT               |
| Typical thermal resistance  | $R_{\theta JA}^{(1)}$ | 20    |       | $^\circ\text{C/W}$ |

**Note**

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, with leads attached to heat sink

| <b>ORDERING INFORMATION</b> (Example) |                 |                        |               |                                  |
|---------------------------------------|-----------------|------------------------|---------------|----------------------------------|
| PREFERRED P/N                         | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                    |
| CGP30-E3/54                           | 1.28            | 54                     | 1400          | 13" diameter paper tape and reel |
| CGP30-E3/73                           | 1.28            | 73                     | 1000          | Ammo pack packaging              |



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

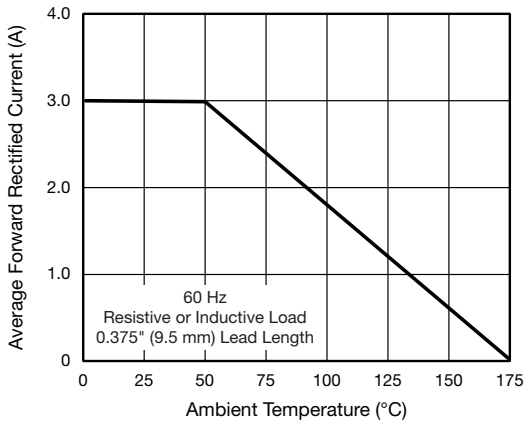


Fig. 1 - Forward Current Derating Curve

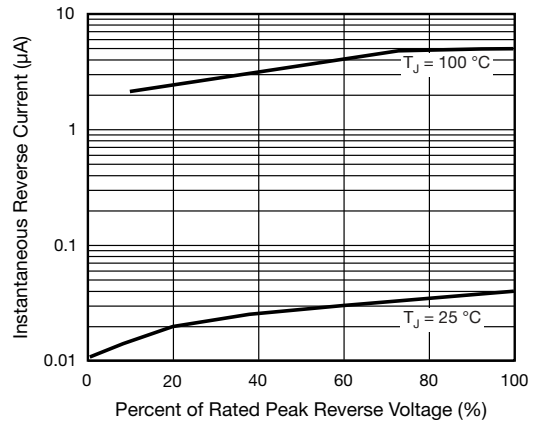


Fig. 4 - Typical Reverse Characteristics

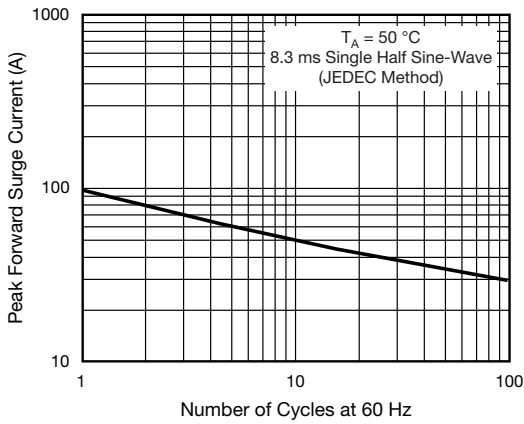


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

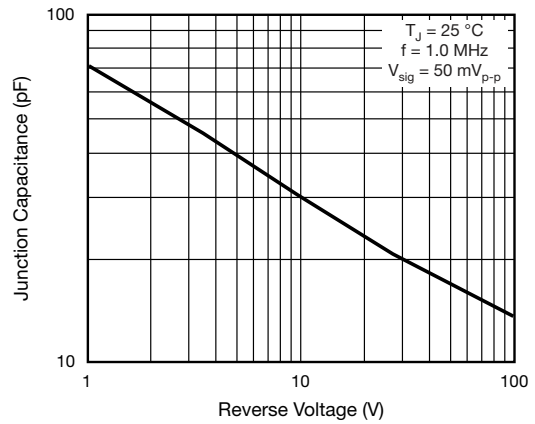


Fig. 5 - Typical Junction Capacitance

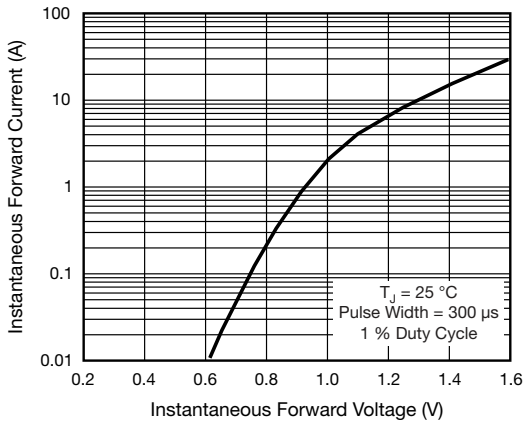
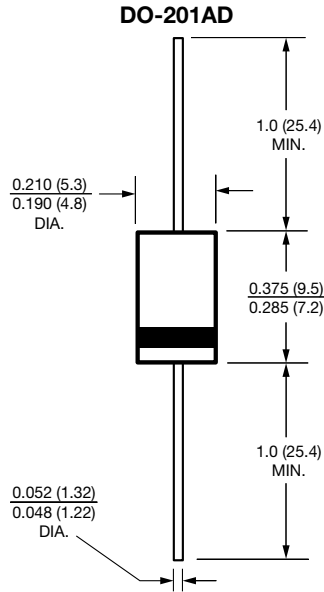


Fig. 3 - Typical Instantaneous Forward Characteristics



**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)





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