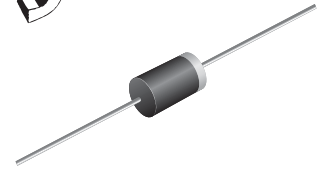




Glass Passivated Junction Fast Switching Rectifier

Major Ratings and Characteristics

| | |
|-------------|------------------------|
| $I_{F(AV)}$ | 3.0 A |
| V_{RRM} | 50 V to 1000 V |
| I_{FSM} | 125 A |
| t_{rr} | 150 ns, 250 ns, 500 ns |
| I_R | 5.0 μ A |
| V_F | 1.3 V |
| T_j max. | 175 °C |



DO-201AD

Patented*

* Glass-plastic encapsulation technique is covered by Patent No. 3,996,602, and brazed-lead assembly by Patent No. 3,930,306

Features

- Superrectifier structure for High Reliability condition
- Cavity-free glass-passivated junction
- Fast switching for high efficiency
- Low leakage current, typical I_R less than 0.2 μ A
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder Dip 260 °C, 40 seconds



Mechanical Data

Case: DO-201AD, molded epoxy over glass body
Epoxy meets UL-94V-0 Flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D
E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: Color band denotes cathode end

Typical Applications

For use in fast switching rectification of power supply, inverters, converters and freewheeling diodes for consumer, automotive and Telecommunication

Maximum Ratings

($T_A = 25$ °C unless otherwise noted)

| Parameter | Symbol | RG30A | RG30B | RG30D | RG30G | RG30J | RG30K | RG30M | Unit |
|--|----------------|---------------|-------|-------|-------|-------|-------|-------|---------|
| Maximum repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC blocking voltage | V_{DC} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55$ °C | $I_{F(AV)}$ | 3.0 | | | | | | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 125 | | | | | | | A |
| Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at $T_A = 55$ °C | $I_{R(AV)}$ | 100 | | | | | | | μ 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 condition | Symbol | RGP30A | RGP30B | RGP30D | RGP30G | RGP30J | RGP30K | RGP30M | Unit |
|---|---|----------|------------|--------|--------|--------|--------|--------|--------|---------------|
| Maximum instantaneous forward voltage | at 3.0 A | V_F | 1.3 | | | | | | | V |
| Maximum DC reverse current at rated DC blocking voltage | $T_A = 25\text{ }^\circ\text{C}$ $T_A = 125\text{ }^\circ\text{C}$ | I_R | 5.0 100 | | | | | | | μA |
| Maximum reverse recovery time | $I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$ | t_{rr} | 150 | | | | | 250 | 500 | ns |
| Typical junction capacitance | at 4.0 V, 1 MHz | C_J | 60 | | | | | | | pF |

Thermal Characteristics

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

| Parameter | Symbol | RGP30A | RGP30B | RGP30D | RGP30G | RGP30J | RGP30K | RGP30M | Unit |
|---|-----------------|--------|--------|--------|--------|--------|--------|--------|--------------------|
| Typical thermal resistance ⁽¹⁾ | $R_{\theta JA}$ | 20 | | | | | | | $^\circ\text{C/W}$ |

Notes:

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, P.C.B. mounted

Ratings and Characteristics Curves

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

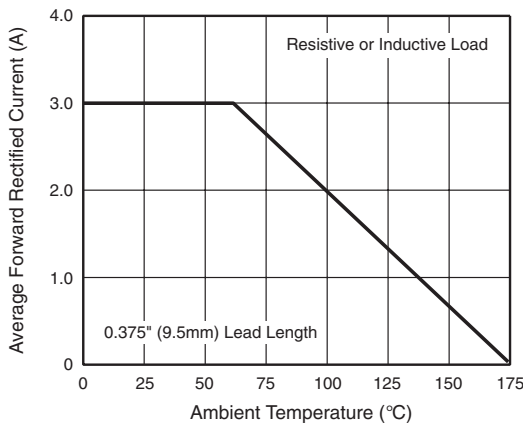


Figure 1. Forward Current Derating Curve

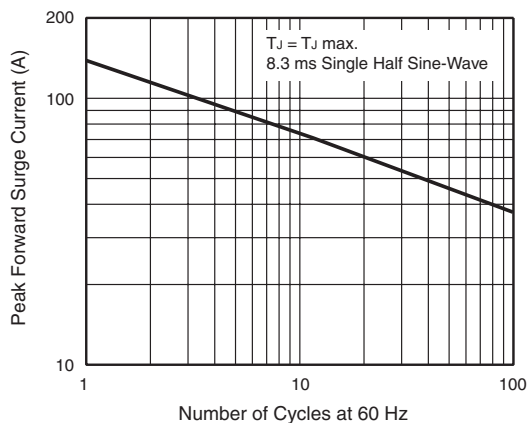


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

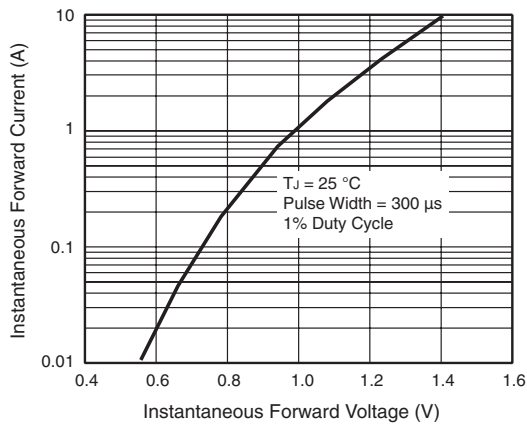


Figure 3. Typical Instantaneous Forward Characteristics

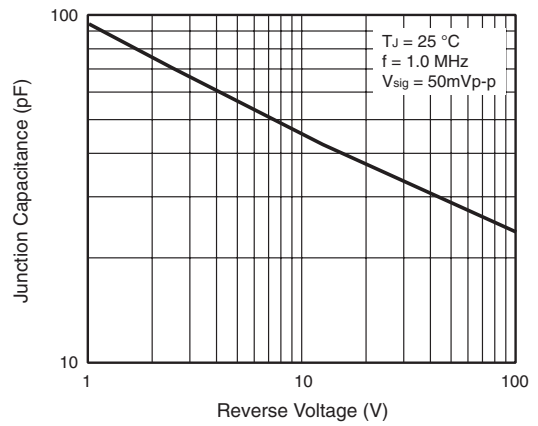


Figure 5. Typical Junction Capacitance

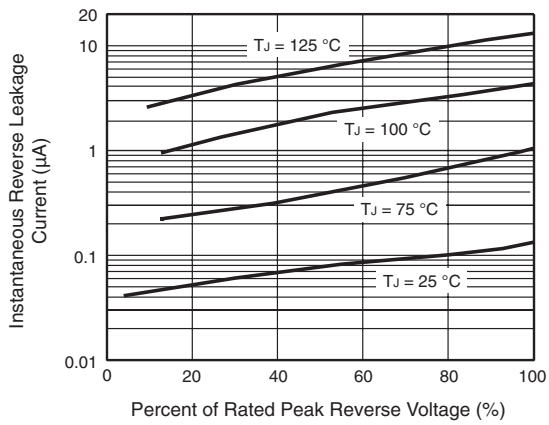
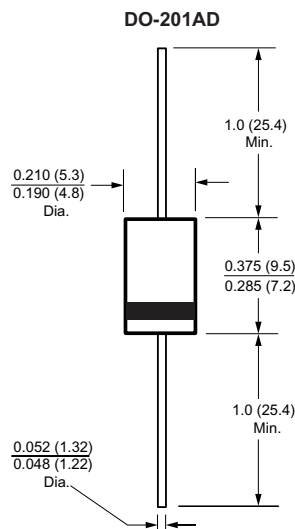


Figure 4. Typical Reverse Characteristics

Package outline dimensions in inches (millimeters)





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