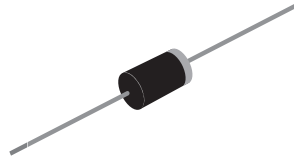


Ultrafast Plastic Rectifier



DO-201AD

FEATURES

- Glass passivated chip junction
- Ultrafast reverse recovery time
- Low forward voltage drop
- Low switching losses, high efficiency
- High forward surge capability
- 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 high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and telecommunication.

MECHANICAL DATA

Case: DO-201AD

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

Polarity: Color band denotes cathode end

| PRIMARY CHARACTERISTICS | |
|-------------------------|--------|
| $I_{F(AV)}$ | 3.0 A |
| V_{RRM} | 400 V |
| I_{FSM} | 60 A |
| t_{rr} | 30 ns |
| V_F | 1.25 V |
| $T_J \text{ max.}$ | 150 °C |

| MAXIMUM RATINGS ($T_A = 25 \text{ °C}$ unless otherwise noted) | | | |
|--|----------------|------------------------|------|
| PARAMETER | SYMBOL | VALUE | UNIT |
| Maximum repetitive peak reverse voltage | V_{RRM} | 400 | V |
| Maximum RMS voltage | V_{RMS} | 280 | V |
| Maximum DC blocking voltage | V_{DC} | 400 | V |
| Maximum average forward rectified current, 0.375" (9.5 mm) lead length | $I_{F(AV)}$ | with FIN 3.0 | A |
| | | without FIN/PCB 1.5 | |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 60 | A |
| Operating junction and storage temperature range | T_J, T_{STG} | - 40 to + 150 | °C |
| Reverse avalanche energy (8/20 μ s surge) | E_{AR} | 10 | mJ |

| ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | |
|--|---|----------|-------|---------------|
| PARAMETER | TEST CONDITIONS | SYMBOL | VALUE | UNIT |
| Minimum reverse breakdown voltage | 10 μA | V_{BR} | 400 | V |
| Maximum instantaneous forward voltage ⁽¹⁾ | 3.0 A | V_F | 1.25 | V |
| Maximum DC reverse current at rated DC blocking voltage | | I_R | 20 | 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} | 30 | ns |

Note:

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | |
|---|-----------------|-------|--------------------|
| PARAMETER | SYMBOL | VALUE | UNIT |
| Typical thermal resistance, junction to ambient ⁽¹⁾ | $R_{\theta JA}$ | 80 | $^\circ\text{C/W}$ |

Note:

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

| ORDERING INFORMATION (Example) | | | | |
|---------------------------------------|-----------------|------------------------|---------------|----------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| 31GF4-E3/54 | 1.13 | 54 | 1400 | 13" diameter paper tape and reel |
| 31GF4-E3/73 | 1.13 | 73 | 1000 | Ammo pack packaging |

RATINGS AND CHARACTERISTICS CURVES

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

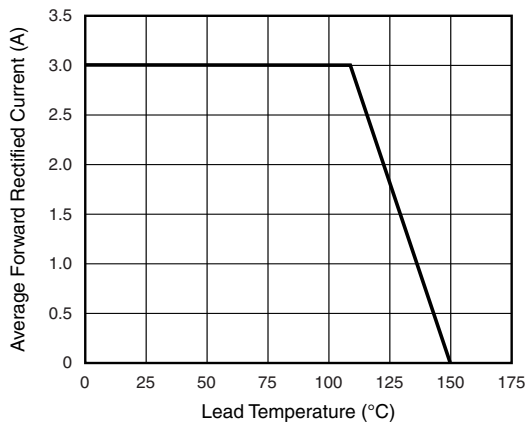


Figure 1. Maximum Forward Current Derating Curve

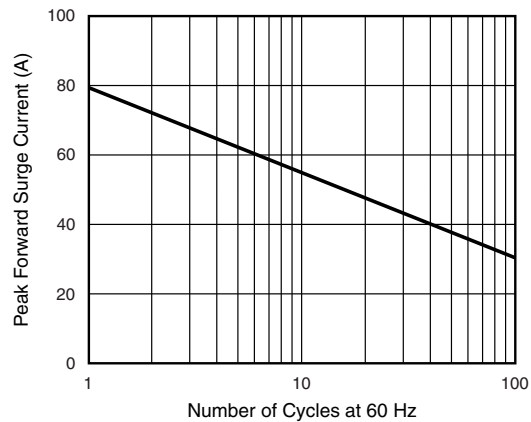


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

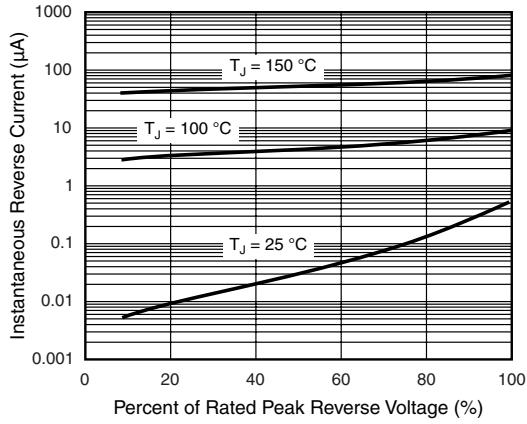


Figure 3. Typical Reverse Characteristics

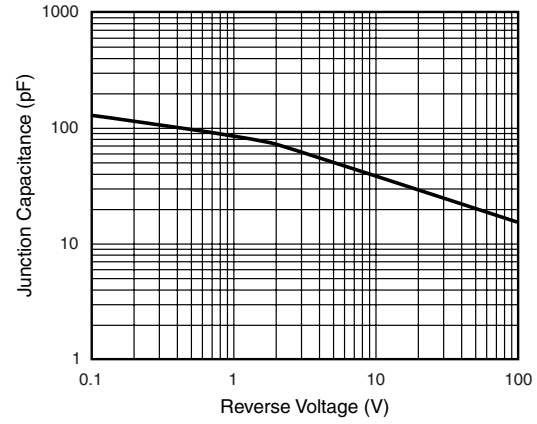


Figure 5. Typical Junction Capacitance

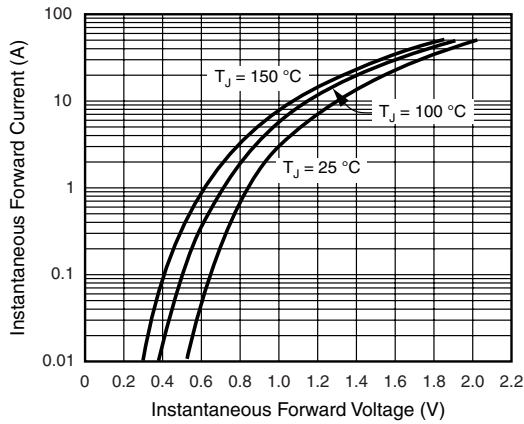
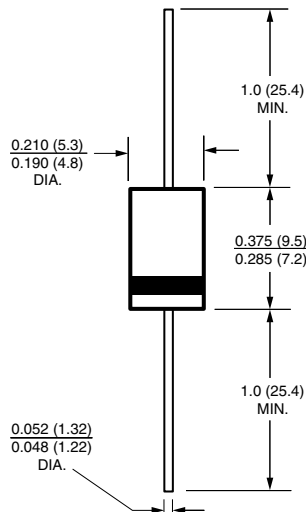


Figure 4. Typical Instantaneous Forward Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-201AD




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