

Ultrafast Plastic Rectifier


DO-201AD

FEATURES

- Glass passivated pellet chip junction
- Ultrafast reverse recovery time
- Low forward voltage drop
- Low switching losses, high efficiency
- 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



RoHS
COMPLIANT
HALOGEN
FREE

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

Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 1A whisker test

Polarity: color band denotes cathode end

PRIMARY CHARACTERISTICS

| | |
|-----------------------|----------|
| $I_{F(AV)}$ | 3.0 A |
| V_{RRM} | 600 V |
| I_{FSM} | 90 A |
| t_{rr} | 30 ns |
| V_F | 1.6 V |
| T_J max. | 150 °C |
| Package | DO-201AD |
| Circuit configuration | Single |

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

| PARAMETER | SYMBOL | VALUE | UNIT |
|--|----------------|-------------|------|
| Maximum repetitive peak reverse voltage | V_{RRM} | 600 | V |
| Maximum RMS voltage | V_{RMS} | 420 | |
| Maximum DC blocking voltage | V_{DC} | 600 | |
| Maximum average forward rectified current, 0.375" (9.5 mm) lead length at $T_L = 110$ °C | $I_{F(AV)}$ | 3.0 | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 90 | |
| 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 ($T_A = 25$ °C unless otherwise noted)

| PARAMETER | TEST CONDITIONS | SYMBOL | VALUE | UNIT |
|---|---|-------------|-------|---------|
| Minimum reverse breakdown voltage | 10 μ A | V_{BR} | 600 | V |
| Maximum instantaneous forward voltage | 3.0 A | $V_F^{(1)}$ | 1.6 | |
| Maximum DC reverse current at rated DC blocking voltage | | I_R | 20 | μ A |
| Maximum reverse recovery time | $I_F = 0.5$ A, $I_R = 1.0$ A, $I_{rr} = 0.25$ A | t_{rr} | 30 | ns |

Note

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



| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted) | | | |
|--|-----------------------|-------|----------------------|
| PARAMETER | SYMBOL | VALUE | UNIT |
| Typical thermal resistance | $R_{\theta JA}^{(1)}$ | 30 | $^{\circ}\text{C/W}$ |
| | $R_{\theta JL}^{(1)}$ | 8.0 | |

Note

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

| ORDERING INFORMATION (Example) | | | | |
|--------------------------------|-----------------|------------------------|---------------|----------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| 31GF6-M3/54 | 1.13 | 54 | 1400 | 13" diameter paper tape and reel |
| 31GF6-M3/73 | 1.13 | 73 | 1000 | Ammo pack packaging |

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

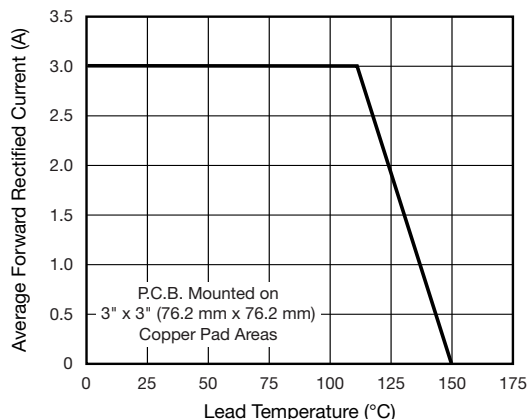


Fig. 1 - Maximum Forward Current Derating Curve

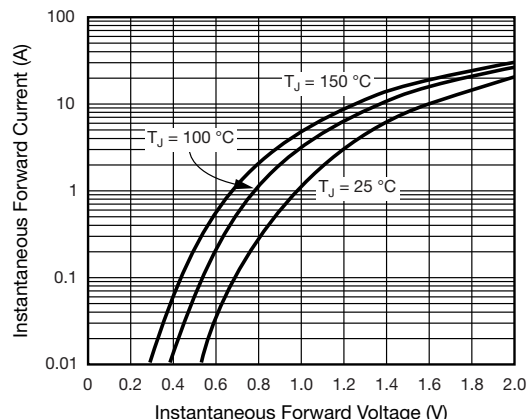


Fig. 3 - Typical Forward Voltage

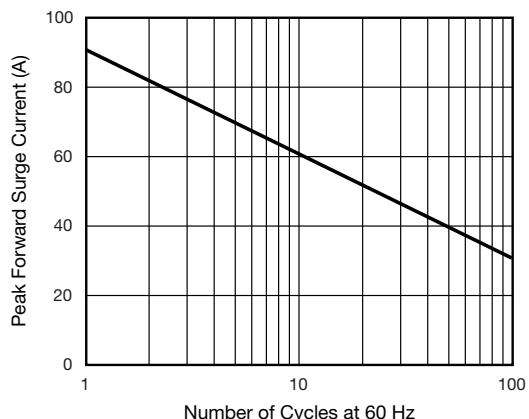


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

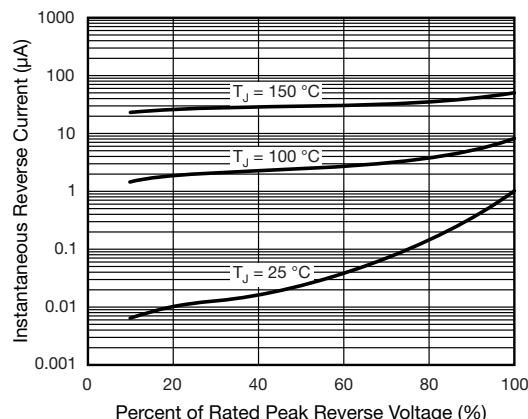


Fig. 4 - Typical Reverse Current

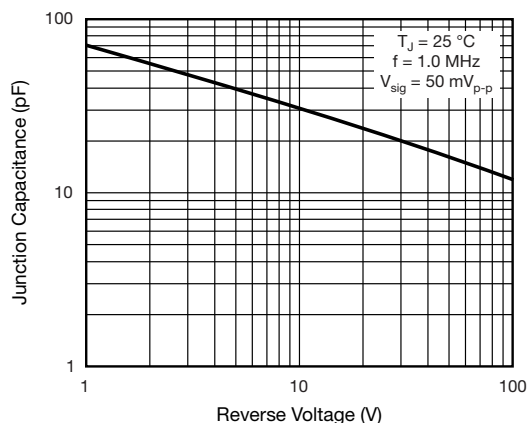
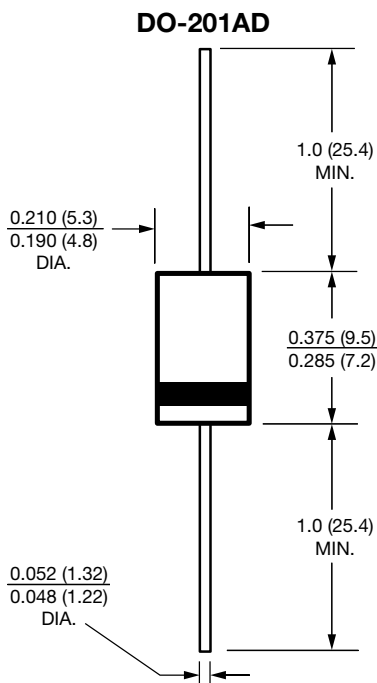


Fig. 5 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)




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