



General Purpose Plastic Rectifier



DO-201AD

FEATURES

- Low forward voltage drop
- Low leakage current, I_R less than 0.1 μA
- 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



TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes application.

MECHANICAL DATA

Case: DO-201AD, molded epoxy 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} | 50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V |
| I_{FSM} | 200 A |
| I_R | 5.0 μA |
| V_F at $I_F = 3.0 A$ | 1.2 V |
| T_J max. | 150 °C |
| Package | DO-201AD |
| Circuit configuration | Single |

| MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted) | | | | | | | | | |
|--|----------------|-------------|-------|-------|-------|-------|-------|-------|------|
| PARAMETER | SYMBOL | P300A | P300B | P300D | P300G | P300J | P300K | P300M | UNIT |
| Max. repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Max. RMS voltage | V_{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Max. DC blocking voltage | V_{DC} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Max. average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55\text{ °C}$ | $I_{F(AV)}$ | 3.0 | | | | | | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 200 | | | | | | | A |
| Operating junction and storage temperature range | T_J, T_{STG} | -50 to +150 | | | | | | | °C |

| ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ °C}$ unless otherwise noted) | | | | | | | | | | |
|---|---|----------|-------|-------|-------|-------|-------|-------|-------|---------|
| PARAMETER | TEST CONDITIONS | SYMBOL | P300A | P300B | P300D | P300G | P300J | P300K | P300M | UNIT |
| Max. instantaneous forward voltage | 3.0 A | V_F | | | | | 1.2 | | | V |
| Max. DC reverse current at rated DC blocking voltage | $T_A = 25\text{ °C}$ | I_R | | | | | 5.0 | | | μA |
| | $T_A = 100\text{ °C}$ | | | | | | 25 | | | |
| Typical reverse recovery time | $I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A$ | t_{rr} | | | | | 2.0 | | | μs |
| Typical junction capacitance | 4.0 V, 1 MHz | C_J | | | | | 30 | | | pF |



| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | | | | |
|--|--------------------------------|-------|-------|-------|-------|-------|-------|-------|--------------------|
| PARAMETER | SYMBOL | P300A | P300B | P300D | P300G | P300J | P300K | P300M | UNIT |
| Typical thermal resistance | $R_{\theta JA}$ ⁽¹⁾ | 20 | | | | | | | $^\circ\text{C/W}$ |
| | $R_{\theta JL}$ ⁽¹⁾ | 5.0 | | | | | | | |

Note

⁽¹⁾ Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5 mm) lead length, PCB mounted with 0.8" x 0.8" (20 mm x 20 mm) copper heatsinks

| ORDERING INFORMATION (Example) | | | | |
|--------------------------------|-----------------|------------------------|---------------|----------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| P300J-E3/54 | 1.1 | 54 | 1400 | 13" diameter paper tape and reel |
| P300J-E3/73 | 1.1 | 73 | 1000 | Ammo pack packaging |

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

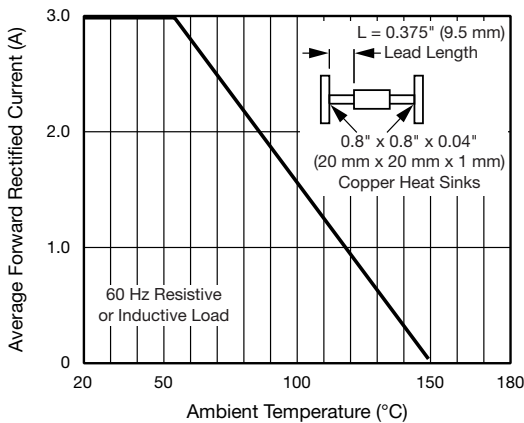


Fig. 1 - Forward Current Derating Curve

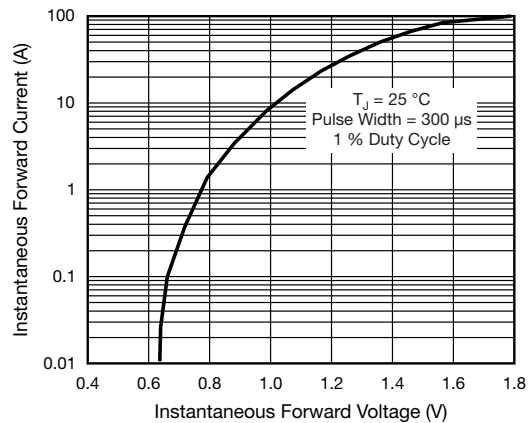


Fig. 3 - Typical Instantaneous Forward Characteristics

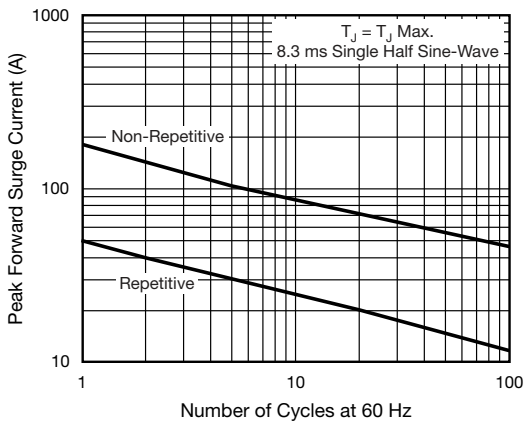


Fig. 2 - Max. Peak Forward Surge Current

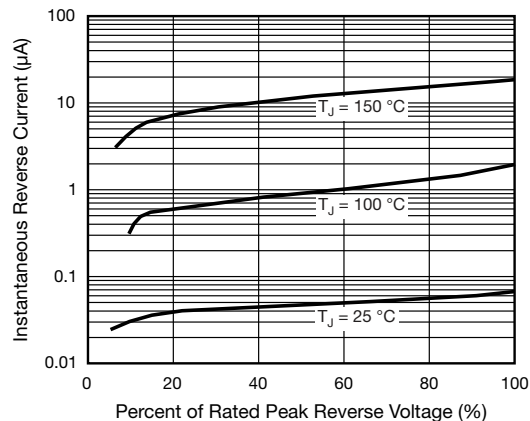


Fig. 4 - Typical Reverse Characteristics

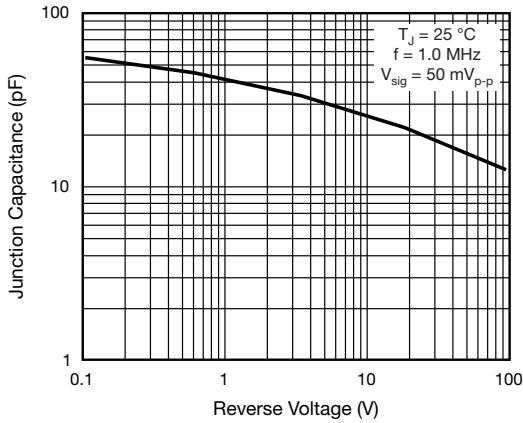


Fig. 5 - Typical Junction Capacitance Per Leg

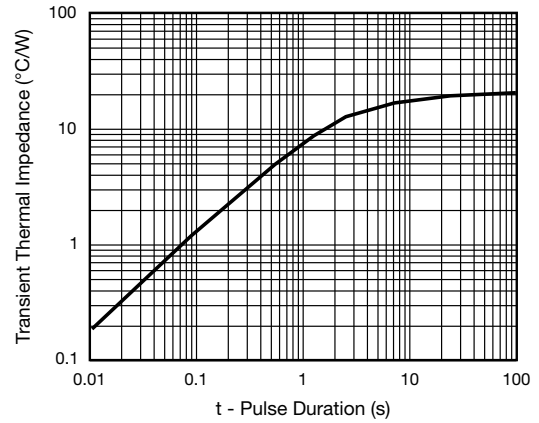
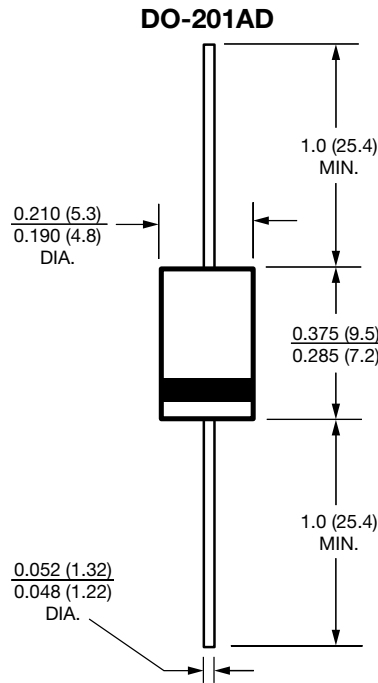


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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