

Ultrafast Plastic Rectifier


DO-201AD

FEATURES

- Glass passivated pellet chip junction
- Ultrafast reverse recovery time
- Low forward voltage drop
- Low leakage current
- 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
Available

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-E3 - RoHS-compliant, commercial grade
Base P/N-M3 - halogen-free, RoHS-compliant, commercial grade

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

E3 and M3 suffix meets JESD 201 class 1A whisker test

Polarity: color band denotes cathode end

| PRIMARY CHARACTERISTICS | |
|--------------------------------|----------|
| $I_{F(AV)}$ | 4.0 A |
| V_{RRM} | 200 V |
| I_{FSM} | 150 A |
| t_{rr} | 25 ns |
| V_F | 0.710 V |
| T_J max. | 175 °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} | 200 | V | |
| Working peak reverse voltage | V_{RWM} | 200 | | |
| Maximum DC blocking voltage | V_{DC} | 200 | | |
| Maximum average forward rectified current at $T_A = 80$ °C (fig. 1) | $I_{F(AV)}$ | 4.0 | A | |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 150 | | |
| Operating junction and storage temperature range | T_J, T_{STG} | -65 to +175 | °C | |

| ELECTRICAL CHARACTERISTICS ($T_A = 25$ °C unless otherwise noted) | | | | |
|---|--|-----------|-------|---------|
| PARAMETER | TEST CONDITIONS | SYMBOL | VALUE | UNIT |
| Maximum instantaneous forward voltage | 3.0 A | V_F (1) | 0.710 | V |
| | | | 0.875 | |
| | 4.0 A | | 0.890 | |
| Maximum instantaneous reverse current at rated DC blocking voltage | | I_R (1) | 5.0 | μ A |
| | | | 150 | |
| Maximum reverse recovery time | $I_F = 0.5$ A, $I_R = 1.0$ A, $I_{rr} = 0.25$ A | t_{rr} | 25 | ns |
| | | | 35 | |
| | $I_F = 1.0$ A, $dI/dt = 50$ A/ μ s, $V_R = 30$ V, $I_{rr} = 10\%$ I_{RM} | | | |
| Maximum forward recovery time | $I_F = 1.0$ A, $dI/dt = 100$ A/ μ s, recovery to 1.0 V | t_{fr} | 25 | |

Note

(1) Pulse test: $t_p = 300$ μ s pulse, duty cycle $\leq 2\%$

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

| PARAMETER | SYMBOL | VALUE | UNIT |
|--|-----------------------|-------|------|
| Typical thermal resistance junction to ambient | $R_{\theta JA}^{(1)}$ | 28 | °C/W |

Note

⁽¹⁾ Lead length = 1/2" on PCB with 1.2" x 1.2" (30.5 mm x 30.5 mm) copper surface

ORDERING INFORMATION (Example)

| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|---------------|-----------------|------------------------|---------------|----------------------------------|
| MUR420-E3/54 | 1.138 | 54 | 1400 | 13" diameter paper tape and reel |
| MUR420-E3/73 | 1.138 | 73 | 1000 | Ammo pack packaging |
| MUR420-M3/54 | 1.138 | 54 | 1400 | 13" diameter paper tape and reel |
| MUR420-M3/73 | 1.138 | 73 | 1000 | Ammo pack packaging |

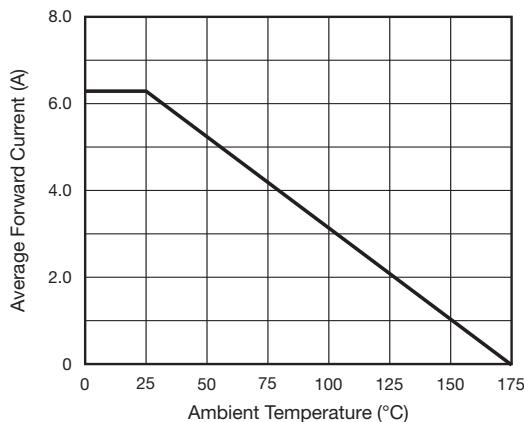
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

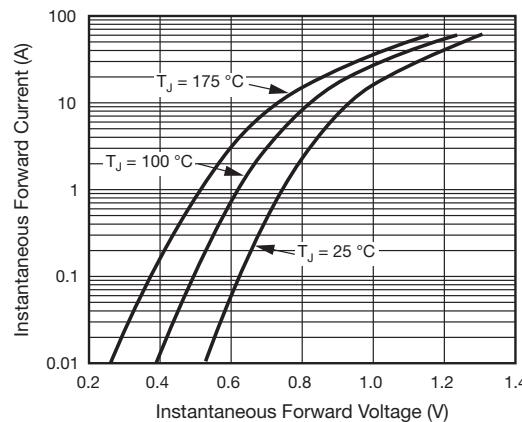


Fig. 3 - Typical Instantaneous Forward Characteristics

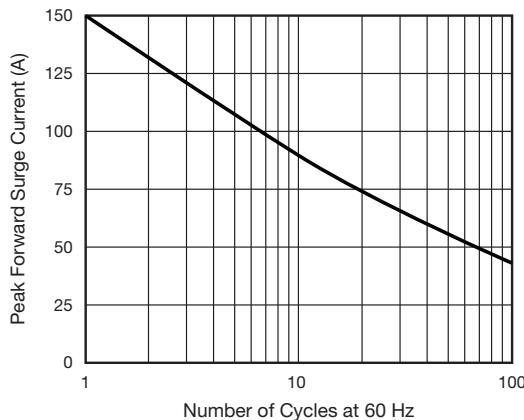


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

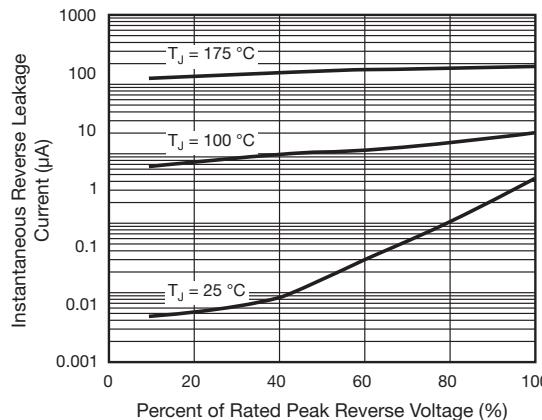


Fig. 4 - Typical Reverse Leakage Characteristics

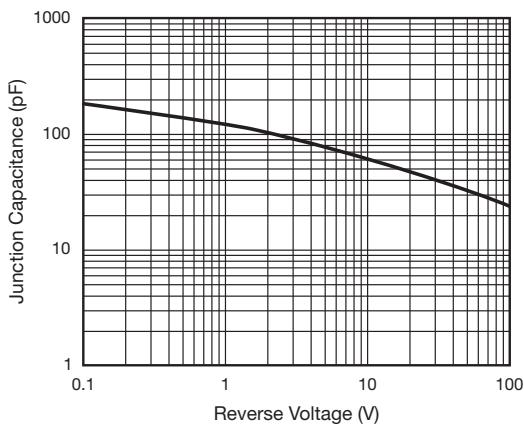
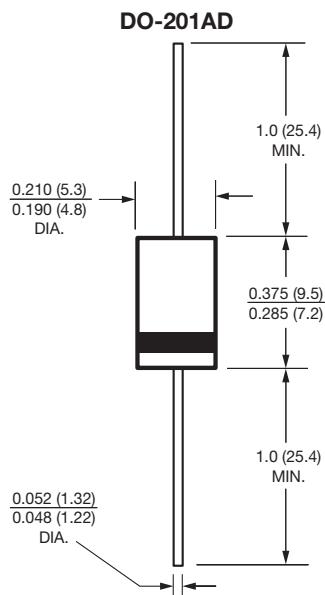


Fig. 5 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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