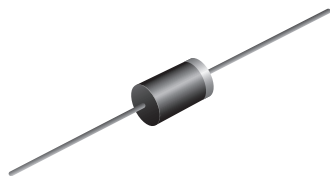




Soft Recovery Fast Switching Plastic Rectifier



DO-201AD

FEATURES

- Fast switching for high efficiency
- Low forward voltage drop
- Low leakage current
- 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

TYPICAL APPLICATIONS

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

Note

- These devices are not AEC-Q101 qualified.

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} | 100 V, 200 V, 400 V, 800 V |
| I_{FSM} | 100 A |
| t_{rr} | 500 ns |
| I_R | 10 μ A |
| V_F | 1.25 V |
| T_J max. | 125 °C |
| Package | DO-201AD |
| Diode variation | Single die |

| MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted) | | | | | | |
|---|-------------|---------------|--------|--------|--------|------|
| PARAMETER | SYMBOL | BY396P | BY397P | BY398P | BY399P | UNIT |
| Maximum repetitive peak reverse voltage | V_{RRM} | 100 | 200 | 400 | 800 | V |
| Maximum RMS voltage | V_{RMS} | 70 | 140 | 280 | 560 | V |
| Maximum DC blocking voltage | V_{DC} | 100 | 200 | 400 | 800 | V |
| Maximum average forward rectified current 0.375" (9.5 mm) lead lengths at $T_A = 50$ °C | $I_{F(AV)}$ | 3.0 | | | | A |
| Peak forward surge current 10 ms single half sine-wave superimposed on rated load at $T_A = 50$ °C | I_{FSM} | 100 | | | | A |
| Maximum repetitive peak forward surge at $f < 15$ kHz | I_{FRM} | 10 | | | | A |
| Operating junction temperature range | T_J | - 50 to + 125 | | | | °C |
| Storage temperature range | T_{STG} | - 50 to + 150 | | | | °C |

| ELECTRICAL CHARACTERISTICS ($T_A = 25$ °C unless otherwise noted) | | | | | | | |
|--|---|----------|--------|--------|--------|--------|---------|
| PARAMETER | TEST CONDITIONS | SYMBOL | BY396P | BY397P | BY398P | BY399P | UNIT |
| Maximum instantaneous forward voltage | 3.0 A | V_F | 1.25 | | | | V |
| Maximum DC reverse current at rated DC blocking voltage | $T_A = 25$ °C | I_R | 10 | | | | μ A |
| | $T_A = 100$ °C | | 500 | | | | |
| Maximum reverse recovery time | $I_F = 10$ mA, $I_R = 10$ mA, $I_{rr} = 1.0$ mA | t_{rr} | 500 | | | | ns |
| Maximum forward recovery time | 100 mA, $di/dt = 50$ A/ μ s | t_{fr} | 1.0 | | | | μ s |
| Typical junction capacitance | 4.0 V, 1 MHz | C_J | 28 | | | | pF |



| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | |
|--|-----------------------|--------|--------|--------|--------|--------------------|
| PARAMETER | SYMBOL | BY396P | BY397P | BY398P | BY399P | UNIT |
| Typical thermal resistance | $R_{\theta JA}^{(1)}$ | 22 | | | | $^\circ\text{C/W}$ |

Note

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length with both leads to heat sink

| ORDERING INFORMATION (Example) | | | | |
|--------------------------------|-----------------|------------------------|---------------|----------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| BY398P-E3/54 | 1.1 | 54 | 1400 | 13" diameter paper tape and reel |
| BY398P-E3/73 | 1.1 | 73 | 1000 | Ammo pack packaging |

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

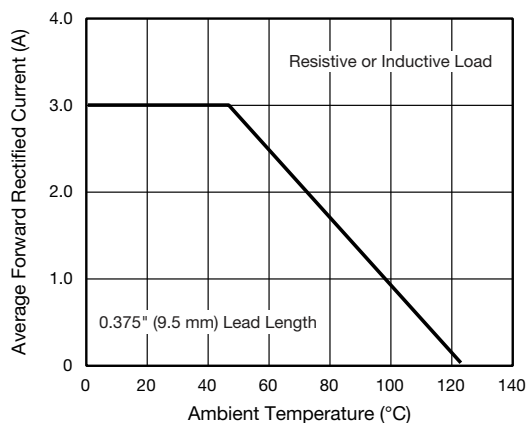


Fig. 1 - Forward Current Derating Curve

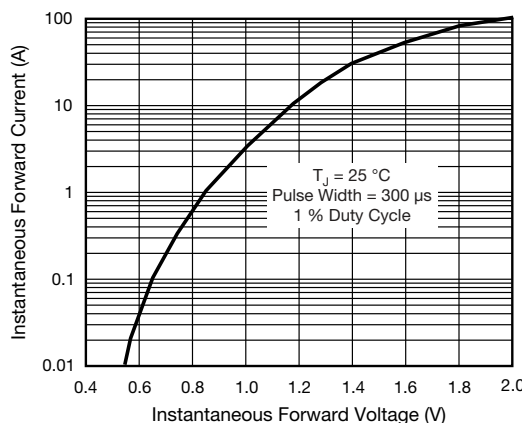


Fig. 3 - Typical Instantaneous Forward Characteristics

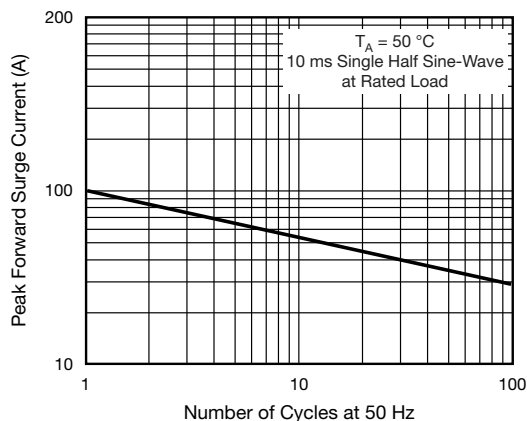


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

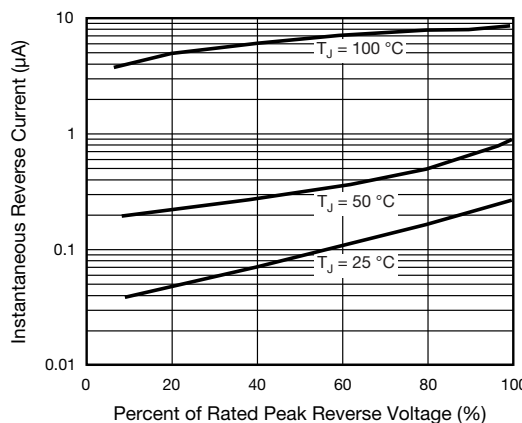


Fig. 4 - Typical Reverse Characteristics

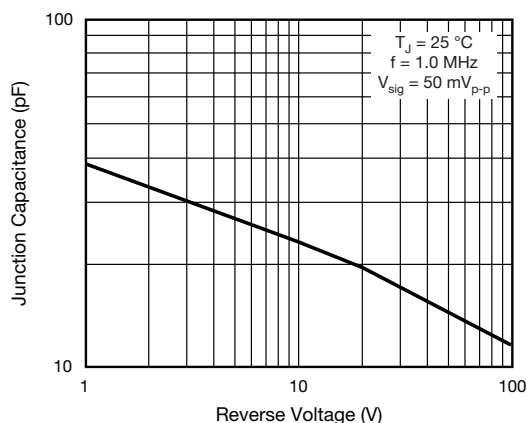
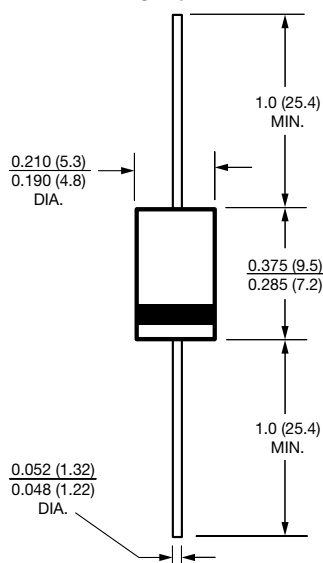


Fig. 5 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-201AD





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