

Soft Recovery 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
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC


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 | |
|-------------------------|----------------|
| $I_{F(AV)}$ | 2.0 A |
| V_{RRM} | 100 V to 800 V |
| I_{FSM} | 70 A |
| t_{rr} | 500 ns |
| I_R | 10 μ A |
| V_F | 1.3 V |
| T_J max. | 125 °C |

| MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted) | | | | | | |
|---|-------------|---------------|--------|--------|--------|------|
| PARAMETER | SYMBOL | BY296P | BY297P | BY298P | BY299P | UNIT |
| Maximum repetitive peak reverse voltage | V_{RRM} | 100 | 200 | 600 | 800 | V |
| Maximum RMS voltage | V_{RMS} | 70 | 140 | 420 | 560 | V |
| Maximum DC blocking voltage | V_{DC} | 100 | 200 | 600 | 800 | V |
| Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55$ °C | $I_{F(AV)}$ | 2.0 | | | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 70 | | | | 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 | BY296P | BY297P | BY298P | BY299P | UNIT |
| Maximum instantaneous forward voltage | 3.0 A | V _F | 1.3 | | | | V |
| Maximum DC reverse current at rated DC blocking voltage | T _A = 25 °C | I _R | 10 | | | | μA |
| | 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 | I _F = 100 mA | t _{rr} | 1.0 | | | | μs |
| Typical junction capacitance | 4.0 V, 1 MHz | C _J | 28 | | | | pF |

| THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | |
|---|---------------------------------|--------|--------|--------|--------|------|--|
| PARAMETER | SYMBOL | BY296P | BY297P | BY298P | BY299P | UNIT | |
| Typical thermal resistance | R _{θJA} ⁽¹⁾ | 15 | | | | °C/W | |

Note

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

| ORDERING INFORMATION (Example) | | | | |
|--------------------------------|-----------------|------------------------|---------------|----------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| BY298P-E3/54 | 1.1 | 54 | 1400 | 13" diameter paper tape and reel |
| BY298P-E3/73 | 1.1 | 73 | 1000 | Ammo pack packaging |

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

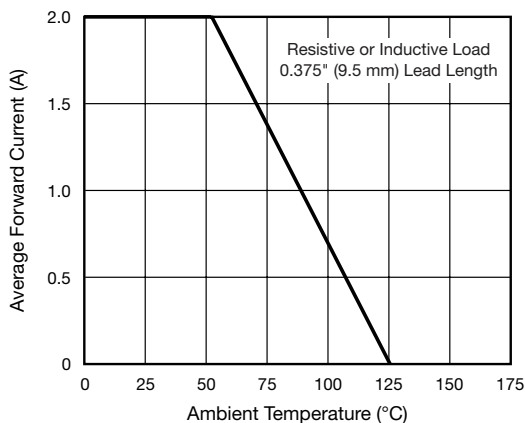


Fig. 1 - Forward Current Derating Curve

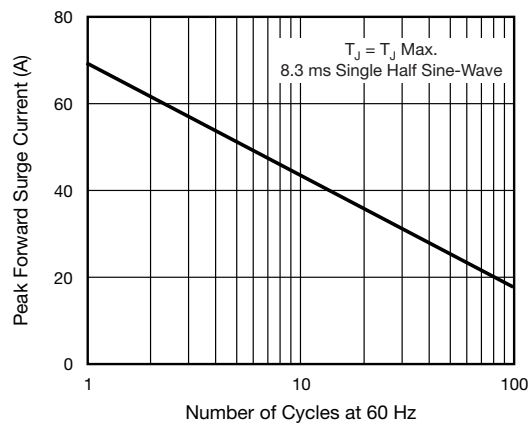


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

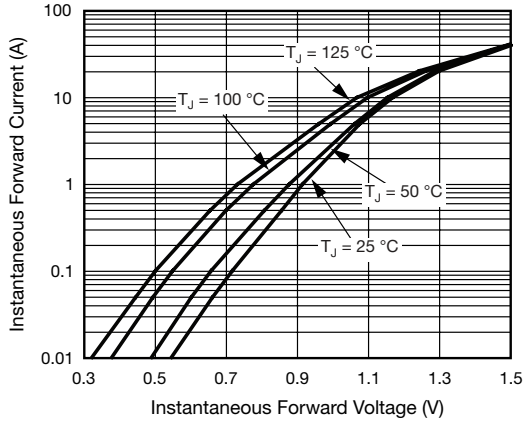


Fig. 3 - Typical Instantaneous Forward Characteristics

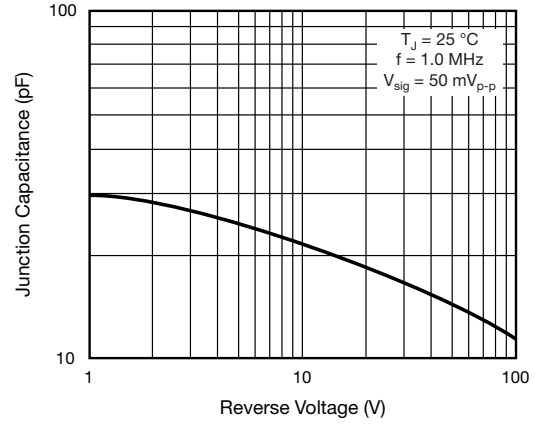


Fig. 5 - Typical Junction Capacitance

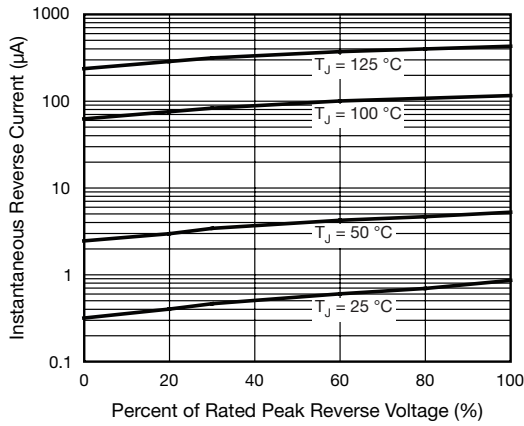
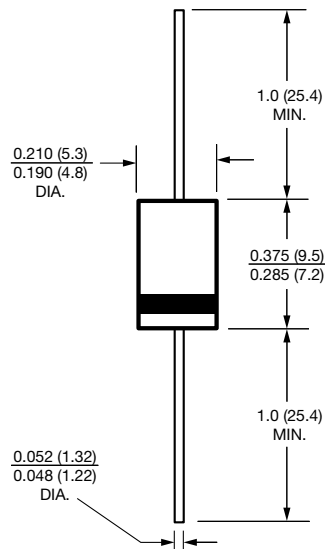


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)
DO-201AD





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