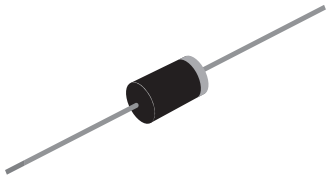
# General Purpose Plastic Rectifier



**DO-201AD**

| MAJOR RATINGS AND CHARACTERISTICS | |
|---|---|
| $I_{F(AV)}$ | 3.0 A |
| $V_{RRM}$ | 50 V to 1000 V |
| $I_{FSM}$ | 200 A |
| $I_R$ | 5.0 µA |
| $V_F$ | 1.2 V |
| $T_j$ max. | 150 °C |

## FEATURES

- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Solder Dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

## TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes application.
(Note: These devices are not Q101 qualified. Therefore, the devices specified in this datasheet have not been designed for use in automotive or Hi-Rel applications.)

## MECHANICAL DATA

**Case:** DO-201AD, molded epoxy body
Epoxy meets UL-94V-0 flammability rating
**Terminals:** Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D
E3 suffix for commercial grade
**Polarity:** Color band denotes cathode end

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

| PARAMETER | SYMBOL | 1N5400 | 1N5401 | 1N5402 | 1N5403 | 1N5404 | 1N5405 | 1N5406 | 1N5407 | 1N5408 | UNIT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 50 | 100 | 200 | 300 | 400 | 500 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | $V_{RMS}$ | 35 | 70 | 140 | 210 | 280 | 350 | 420 | 560 | 700 | V |
| Maximum DC blocking voltage | $V_{DC}$ | 50 | 100 | 200 | 300 | 400 | 500 | 600 | 800 | 1000 | V |
| Maximum average forward rectified current 0.5" (12.5 mm) lead length at $T_L$ = 105 °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 |
| Maximum full load reverse current, full cycle average 0.5" (12.5 mm) lead length at $T_L$ = 105 °C | $I_{R(AV)}$ | 500 | | | | | | | | | µA |
| Operating junction and storage temperature range | $T_J$,$T_{STG}$ | - 50 to + 150 | | | | | | | | | °C |

| ELECTRICAL CHARACTERISTICS ($T_A$ = 25 °C unless otherwise noted) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PARAMETER | TEST CONDITIONS | SYMBOL | 1N5400 | 1N5401 | 1N5402 | 1N5403 | 1N5404 | 1N5405 | 1N5406 | 1N5407 | 1N5408 | UNIT |
| Maximum instantaneous forward voltage | at 3.0 A | $V_F$ | 1.2 | | | | | | | | | V |
| Maximum DC reverse current at rated DC blocking voltage | $T_A$ = 25 °C<br>$T_A$ = 150 °C | $I_R$ | 5.0<br>500 | | | | | | | | | µA |
| Typical junction capacitance | at 4.0 V, 1 MHz | $C_J$ | 30 | | | | | | | | | pF |

| THERMAL CHARACTERISTICS ($T_A$ = 25 °C unless otherwise noted) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PARAMETER | SYMBOL | 1N5400 | 1N5401 | 1N5402 | 1N5403 | 1N5404 | 1N5405 | 1N5406 | 1N5407 | 1N5408 | UNIT |
| Typical thermal resistance (1) | $R_{\theta JA}$ | 20 | | | | | | | | | °C/W |

**Note:**

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

| ORDERING INFORMATION | | | | |
|---|---|---|---|---|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| 1N5404-E3/54 | 1.1 | 54 | 1400 | 13" Diameter Paper Tape & Reel |
| 1N5404-E3/73 | 1.1 | 73 | 1000 | Ammo Pack Packaging |

## RATINGS AND CHARACTERISTICS CURVES

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

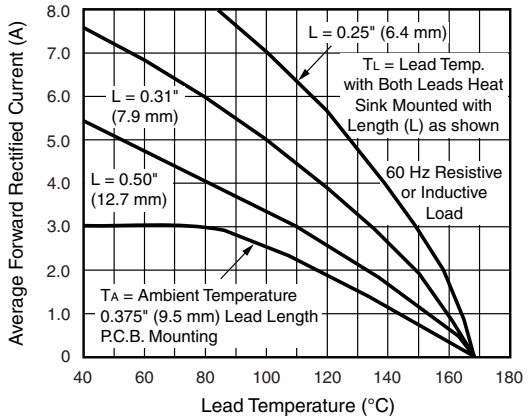



Figure 1. Forward Current Derating Curve

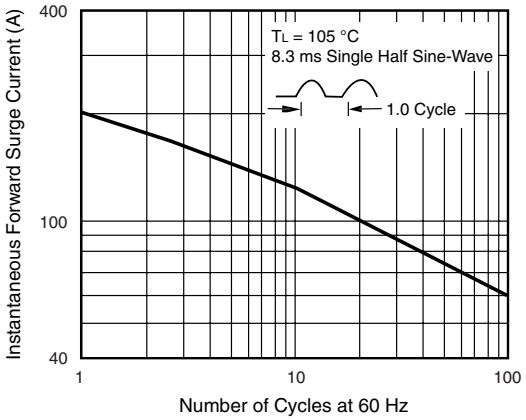



Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

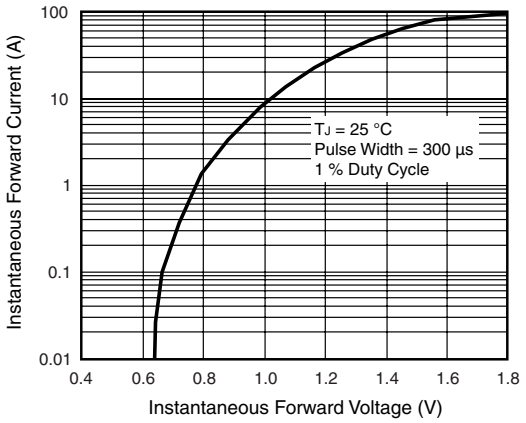



Figure 3. Typical Instantaneous Forward Characteristics

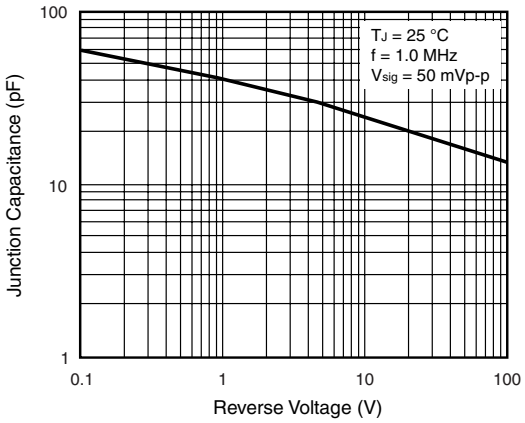



Figure 5. Typical Junction Capacitance

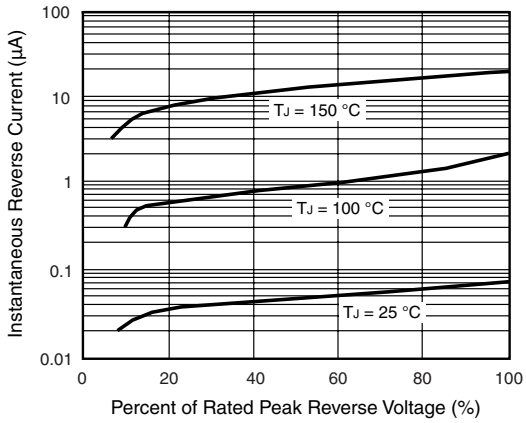



Figure 4. Typical Reverse Characteristics

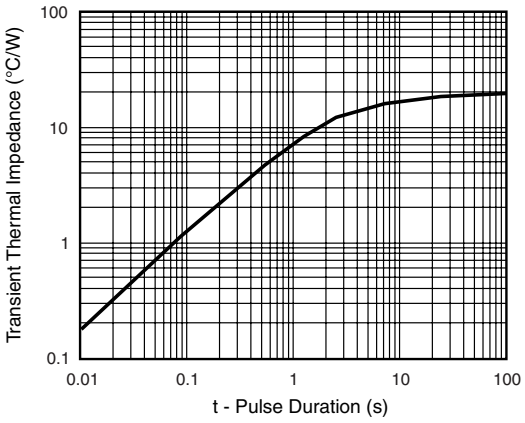
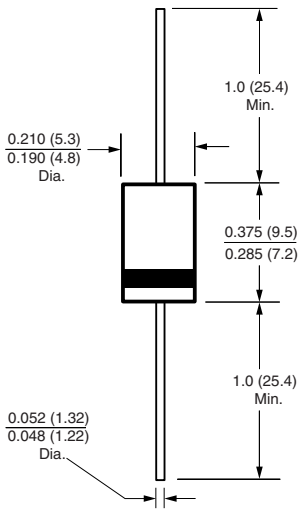



Figure 6. Typical Transient Thermal Impedance

## **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**DO-201AD**



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