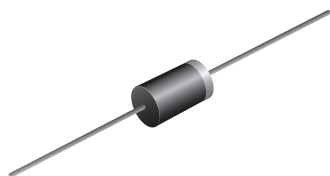




## General Purpose Plastic Rectifier



DO-201AD

## FEATURES

- 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](http://www.vishay.com/doc?99912)

RoHS  
COMPLIANT

## TYPICAL APPLICATIONS

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

## 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                                                     |
| $V_{RRM}$               | 50 V, 100 V, 200 V, 300 V, 500 V,<br>600 V, 800 V, 1000 V |
| $I_{FSM}$               | 200 A                                                     |
| $I_R$                   | 5.0 $\mu$ A                                               |
| $V_F$                   | 1.2 V                                                     |
| $T_J$ max.              | 150 °C                                                    |
| Package                 | DO-201AD                                                  |
| Diode variations        | Single die                                                |

| MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ 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 $T_L = 105\text{ °C}$             | $I_{F(AV)}$    | 3.0           |        |        |        |        |        |        |        |        | A       |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load                        | $I_{FSM}$      | 200           |        |        |        |        |        |        |        |        | A       |
| Maximum full load reverse current, full cycle average 0.5" (12.5 mm) lead length at $T_L = 105\text{ °C}$ | $I_{R(AV)}$    | 500           |        |        |        |        |        |        |        |        | $\mu$ A |
| Operating junction and storage temperature range                                                          | $T_J, T_{STG}$ | - 50 to + 150 |        |        |        |        |        |        |        |        | °C      |

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

| PARAMETER                                               | TEST CONDITIONS         | SYMBOL         | 1N5400 | 1N5401 | 1N5402 | 1N5403 | 1N5404 | 1N5405 | 1N5406 | 1N5407 | 1N5408 | UNIT |
|---------------------------------------------------------|-------------------------|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| Maximum instantaneous forward voltage                   | 3.0 A                   | V <sub>F</sub> | 1.2    |        |        |        |        |        |        |        |        | V    |
| Maximum DC reverse current at rated DC blocking voltage | T <sub>A</sub> = 25 °C  | I <sub>R</sub> | 5.0    |        |        |        |        |        |        |        |        | μA   |
|                                                         | T <sub>A</sub> = 150 °C |                | 500    |        |        |        |        |        |        |        |        |      |
| Typical junction capacitance                            | 4.0 V, 1 MHz            | C <sub>J</sub> | 30     |        |        |        |        |        |        |        |        | pF   |

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

| PARAMETER                  | SYMBOL                | 1N5400 | 1N5401 | 1N5402 | 1N5403 | 1N5404 | 1N5405 | 1N5406 | 1N5407 | 1N5408 | UNIT                 |
|----------------------------|-----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------------------|
| Typical thermal resistance | $R_{\theta JA}^{(1)}$ | 20     |        |        |        |        |        |        |        |        | $^{\circ}\text{C/W}$ |

**Note**

(1) Thermal resistance from junction to ambient 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                    |
|---------------|-----------------|------------------------|---------------|----------------------------------|
| 1N5404-E3/54  | 1.1             | 54                     | 1400          | 13" diameter paper tape and reel |
| 1N5404-E3/73  | 1.1             | 73                     | 1000          | Ammo pack packaging              |

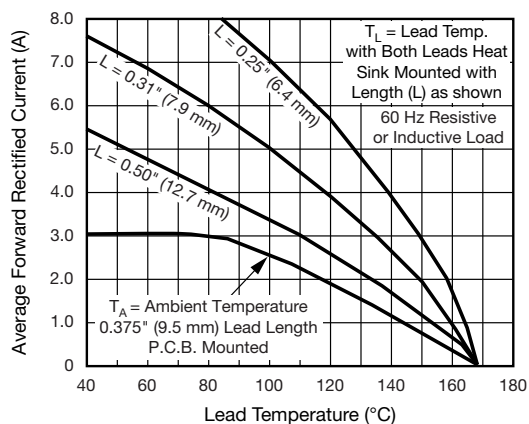
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

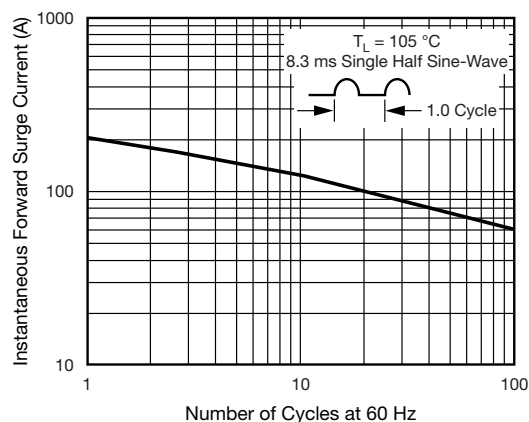


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

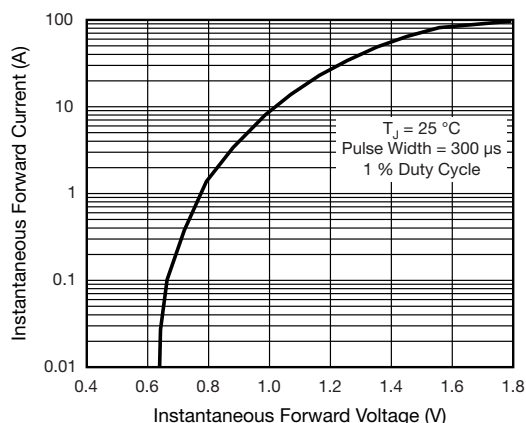


Fig. 3 - Typical Instantaneous Forward Characteristics

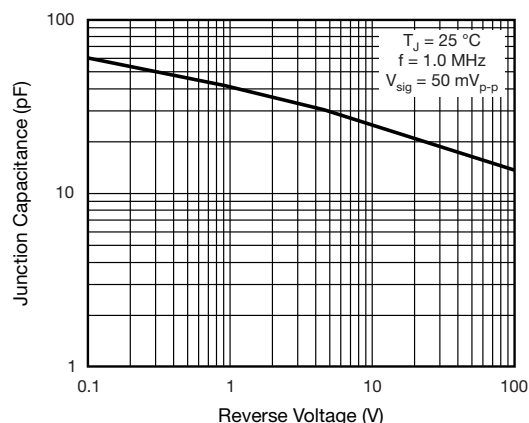


Fig. 5 - Typical Junction Capacitance

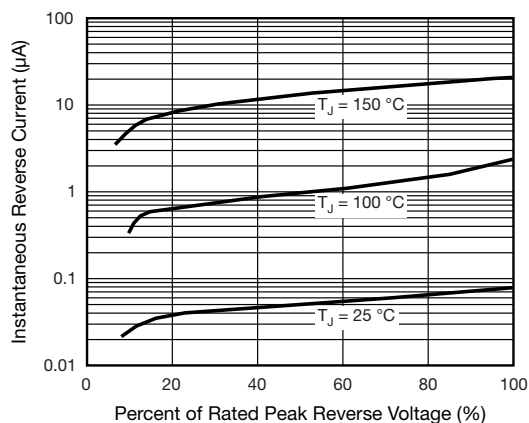


Fig. 4 - Typical Reverse Characteristics

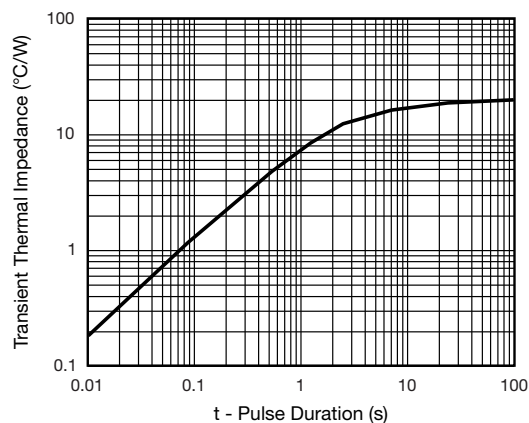
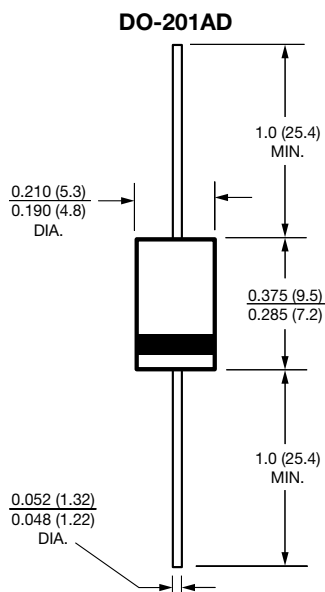


Fig. 6 - Typical Transient Thermal Impedance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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