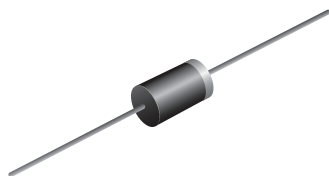


## General Purpose Plastic Rectifier



DO-201AD

### FEATURES

- Low forward voltage drop
- Low leakage current,  $I_R$  less than 0.1  $\mu A$
- 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)



### TYPICAL APPLICATIONS

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

### 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, 400 V, 600 V, 800 V, 1000 V |
| $I_{FSM}$              | 200 A                                           |
| $I_R$                  | 5.0 $\mu A$                                     |
| $V_F$ at $I_F = 3.0 A$ | 1.2 V                                           |
| $T_J$ max.             | 150 °C                                          |
| Package                | DO-201AD                                        |
| Circuit configuration  | Single                                          |

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

| PARAMETER                                                                           | SYMBOL         | P300A       | P300B | P300D | P300G | P300J | P300K | P300M | UNIT |
|-------------------------------------------------------------------------------------|----------------|-------------|-------|-------|-------|-------|-------|-------|------|
| Max. repetitive peak reverse voltage                                                | $V_{RRM}$      | 50          | 100   | 200   | 400   | 600   | 800   | 1000  | V    |
| Max. RMS voltage                                                                    | $V_{RMS}$      | 35          | 70    | 140   | 280   | 420   | 560   | 700   | V    |
| Max. DC blocking voltage                                                            | $V_{DC}$       | 50          | 100   | 200   | 400   | 600   | 800   | 1000  | V    |
| Max. average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55$ °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    |
| Operating junction and storage temperature range                                    | $T_J, T_{STG}$ | -50 to +150 |       |       |       |       |       |       | °C   |

### ELECTRICAL CHARACTERISTICS ( $T_A = 25$ °C unless otherwise noted)

| ELECTRICAL CHARACTERISTICS (TA = 25 °C unless otherwise noted) |                                      |             |        |       |       |       |       |       |       |       |      |
|----------------------------------------------------------------|--------------------------------------|-------------|--------|-------|-------|-------|-------|-------|-------|-------|------|
| PARAMETER                                                      | TEST CONDITIONS                      |             | SYMBOL | P300A | P300B | P300D | P300G | P300J | P300K | P300M | UNIT |
| Max. instantaneous forward voltage                             | 3.0 A                                |             | VF     | 1.2   |       |       |       |       |       |       | V    |
| Max. DC reverse current at rated DC blocking voltage           |                                      | TA = 25 °C  | IR     | 5.0   |       |       |       |       |       |       | μA   |
|                                                                |                                      | TA = 100 °C |        | 25    |       |       |       |       |       |       |      |
| Typical reverse recovery time                                  | IF = 0.5 A, IR = 1.0 A, Itr = 0.25 A |             | trr    | 2.0   |       |       |       |       |       |       | μs   |
| Typical junction capacitance                                   | 4.0 V, 1 MHz                         |             | CJ     | 30    |       |       |       |       |       |       | pF   |

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

| PARAMETER                  | SYMBOL                          | P300A | P300B | P300D | P300G | P300J | P300K | P300M | UNIT |
|----------------------------|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|
| Typical thermal resistance | R <sub>θJA</sub> <sup>(1)</sup> | 20    |       |       |       |       |       |       | °C/W |
|                            | R <sub>θJL</sub> <sup>(1)</sup> | 5.0   |       |       |       |       |       |       |      |

**Note**

<sup>(1)</sup> Thermal resistance from junction to ambient and from junction to lead 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                    |
|---------------|-----------------|------------------------|---------------|----------------------------------|
| P300J-E3/54   | 1.1             | 54                     | 1400          | 13" diameter paper tape and reel |
| P300J-E3/73   | 1.1             | 73                     | 1000          | Ammo pack packaging              |

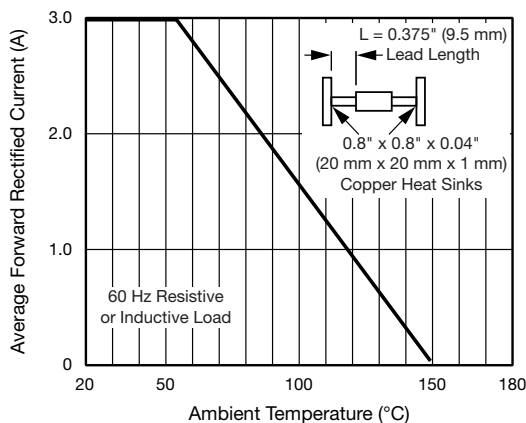
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

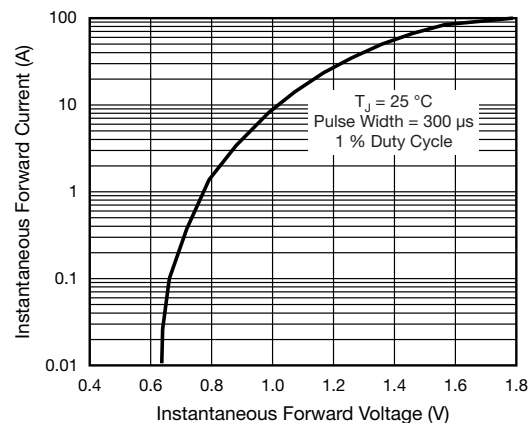


Fig. 3 - Typical Instantaneous Forward Characteristics

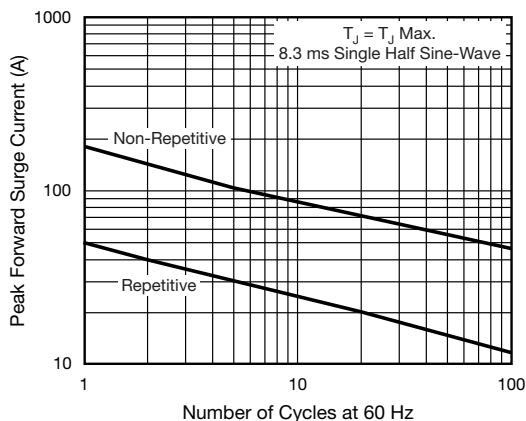


Fig. 2 - Max. Peak Forward Surge Current

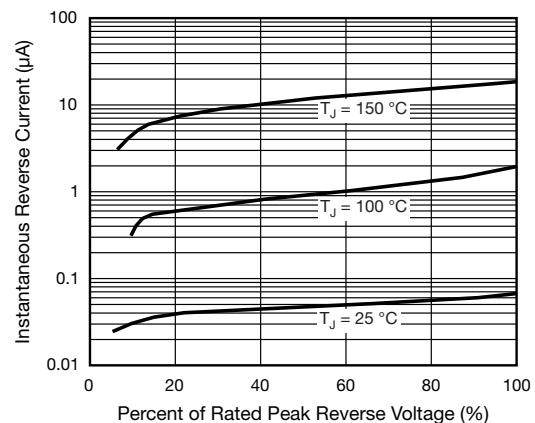


Fig. 4 - Typical Reverse Characteristics

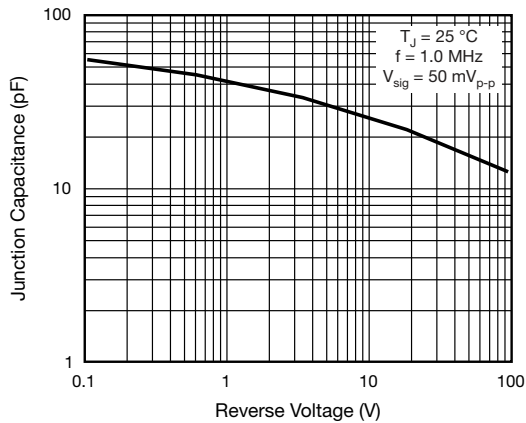


Fig. 5 - Typical Junction Capacitance Per Leg

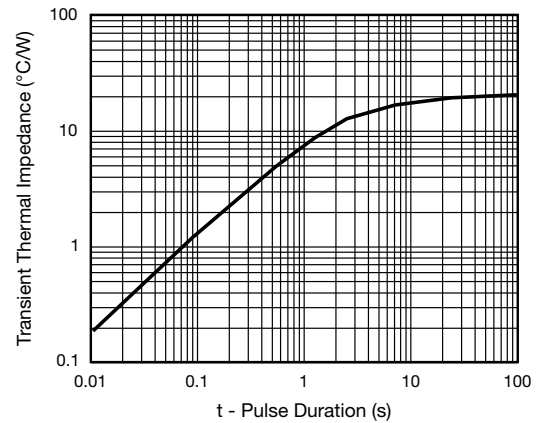
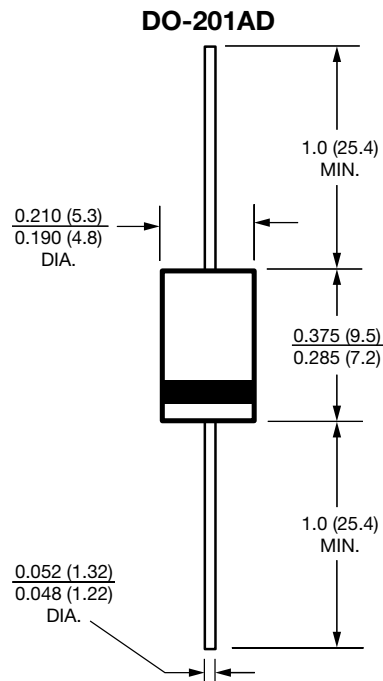


Fig. 6 - Typical Transient Thermal Impedance

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





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