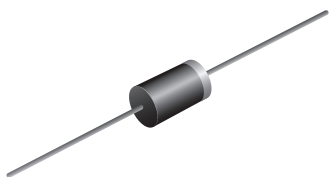


## General Purpose Plastic Rectifier


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


**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           |
| $V_{RRM}$   | 200 V to 1300 V |
| $I_{FSM}$   | 150 A           |
| $I_R$       | 5.0 $\mu A$     |
| $V_F$       | 1.1 V           |
| $T_J$ max.  | 150 °C          |

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

| PARAMETER                                                                            | SYMBOL         | BY251P        | BY252P | BY253P | BY254P | BY255P | UNIT    |
|--------------------------------------------------------------------------------------|----------------|---------------|--------|--------|--------|--------|---------|
| Maximum repetitive peak reverse voltage                                              | $V_{RRM}$      | 200           | 400    | 600    | 800    | 1300   | V       |
| Maximum RMS voltage                                                                  | $V_{RMS}$      | 140           | 280    | 420    | 560    | 910    | V       |
| Maximum DC blocking voltage                                                          | $V_{DC}$       | 200           | 400    | 600    | 800    | 1300   | V       |
| Maximum average forward rectified current<br>10 mm lead length                       | $I_{F(AV)}$    | 3.0           |        |        |        |        | A       |
| Peak forward surge current 10 ms single half<br>sine-wave superimposed on rated load | $I_{FSM}$      | 150           |        |        |        |        | A       |
| Maximum full load reverse current, full cycle average<br>10 mm lead length           | $I_{R(AV)}$    | 100           |        |        |        |        | $\mu A$ |
| Operating junction and storage temperature range                                     | $T_J, T_{STG}$ | - 55 to + 150 |        |        |        |        | °C      |

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

| PARAMETER                                            | TEST CONDITIONS                                    | SYMBOL   | BY251P | BY252P | BY253P | BY254P | BY255P | UNIT    |
|------------------------------------------------------|----------------------------------------------------|----------|--------|--------|--------|--------|--------|---------|
| Maximum instantaneous forward voltage                | 3.0 A                                              | $V_F$    | 1.1    |        |        |        |        | V       |
| Maximum reverse current at rated DC blocking voltage | $T_A = 25$ °C                                      | $I_R$    | 5.0    |        |        |        |        | $\mu A$ |
| Maximum reverse recovery time                        | $I_F = 0.5$ A, $I_R = 1.0$ V,<br>$I_{rr} = 0.25$ A | $t_{rr}$ | 3.0    |        |        |        |        | $\mu s$ |
| Typical junction capacitance                         | 4.0 V, 1 MHz                                       | $C_J$    | 40     |        |        |        |        | pF      |

| THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                                 |        |        |        |        |        |      |
|-------------------------------------------------------------------------|---------------------------------|--------|--------|--------|--------|--------|------|
| PARAMETER                                                               | SYMBOL                          | BY251P | BY252P | BY253P | BY254P | BY255P | UNIT |
| Typical thermal resistance                                              | R <sub>θJA</sub> <sup>(1)</sup> | 20     |        |        |        |        | °C/W |
|                                                                         | R <sub>θJL</sub> <sup>(1)</sup> | 10     |        |        |        |        |      |

### Note

(1) Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5 mm) lead length, P.C.B. mounted

| ORDERING INFORMATION (Example) |                 |                        |               |                                  |
|--------------------------------|-----------------|------------------------|---------------|----------------------------------|
| PREFERRED P/N                  | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                    |
| BY253P-E3/54                   | 1.1             | 54                     | 1400          | 13" diameter paper tape and reel |
| BY253P-E3/73                   | 1.1             | 73                     | 1000          | Ammo pack packaging              |

## RATINGS AND CHARACTERISTICS CURVES

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

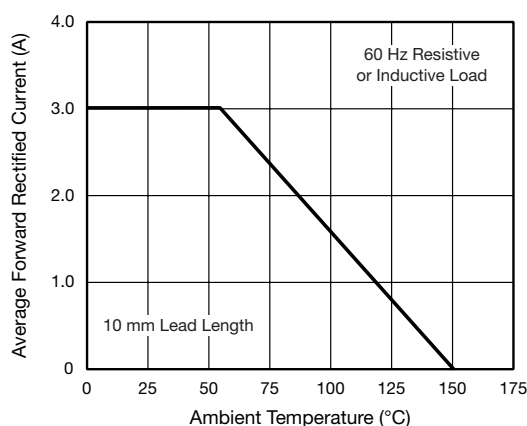


Fig. 1 - Forward Current Derating Curve

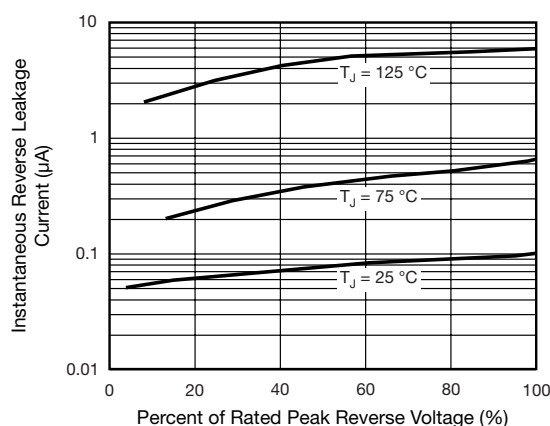


Fig. 3 - Maximum Non-repetitive Peak Forward Surge Current

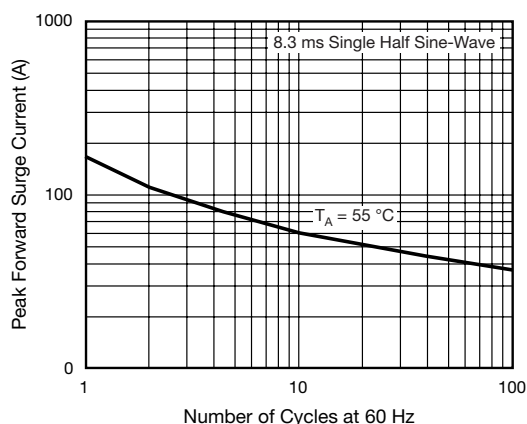


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

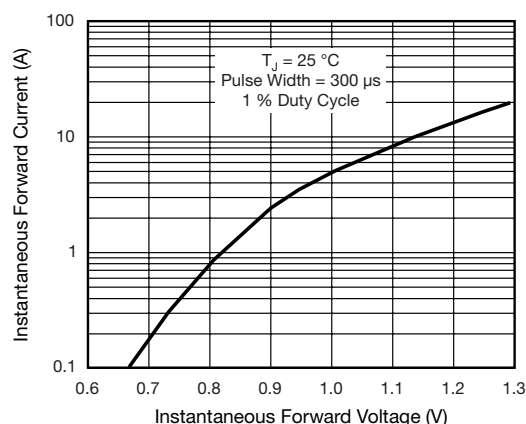


Fig. 4 - Typical Instantaneous Forward Characteristics

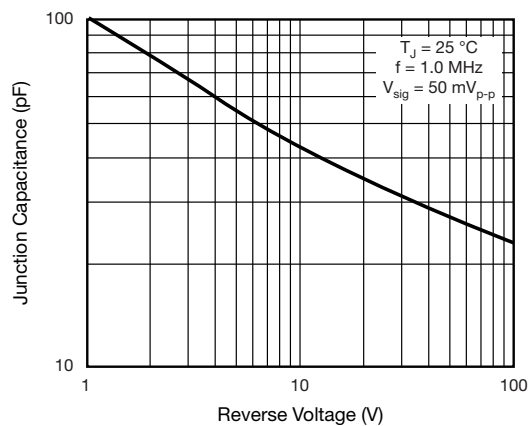
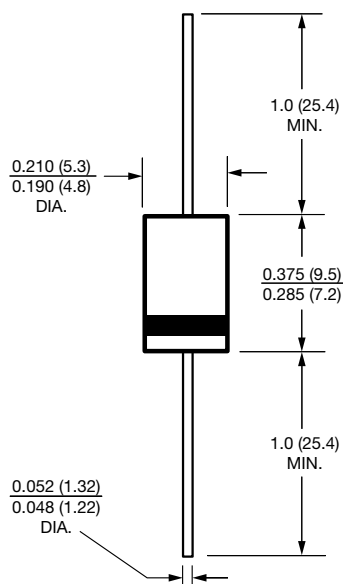


Fig. 5 - Typical Junction Capacitance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### DO-201AD





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