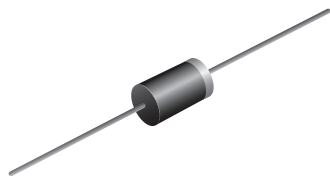


## Schottky Barrier Plastic Rectifier


**DO-201AD**

### FEATURES

- Guardring for overvoltage protection
- Very small conduction losses
- Extremely fast switching
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- 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 low voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

### MECHANICAL DATA

**Case:** DO-201AD

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 the cathode end

| PRIMARY CHARACTERISTICS |                              |
|-------------------------|------------------------------|
| $I_{F(AV)}$             | 3.0 A                        |
| $V_{RRM}$               | 20 V, 30 V, 40 V, 50 V, 60 V |
| $I_{FSM}$               | 120 A                        |
| $V_F$                   | 0.49 V, 0.68 V               |
| $T_J$ max.              | 125 °C, 150 °C               |
| Package                 | DO-201AD                     |
| Diode variations        | Single                       |

| MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)                    |                    |               |       |       |               |       |      |
|--|--------------------|---------------|-------|-------|---------------|-------|------|
| PARAMETER  | SYMBOL             | SB320         | SB330 | SB340 | SB350         | SB360 | UNIT |
| Maximum repetitive peak reverse voltage  | V <sub>RRM</sub>   | 20            | 30    | 40    | 50            | 60    | V    |
| Maximum RMS voltage  | V <sub>RMS</sub>   | 14            | 21    | 28    | 35            | 42    | V    |
| Maximum DC blocking voltage  | V <sub>DC</sub>    | 20            | 30    | 40    | 50            | 60    | V    |
| Maximum average forward rectified current at 0.375" (9.5 mm) lead length (fig. 1)  | I <sub>F(AV)</sub> | 3.0           |       |       |               |       | A    |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I <sub>FSM</sub>   | 120           |       |       |               |       | A    |
| Operating junction temperature range   | T <sub>J</sub>     | - 65 to + 125 |       |       | - 65 to + 150 |       | °C   |
| Storage temperature range  | T <sub>STG</sub>   | - 65 to + 150 |       |       |               |       | °C   |

| ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                         |                               |       |       |       |       |       |      |
|--|-------------------------|-------------------------------|-------|-------|-------|-------|-------|------|
| PARAMETER  | TEST CONDITIONS         | SYMBOL                        | SB320 | SB330 | SB340 | SB350 | SB360 | UNIT |
| Maximum instantaneous forward voltage                                      | 3.0 A                   | V <sub>F</sub> <sup>(1)</sup> | 0.49  |       |       | 0.68  |       | V    |
| Maximum instantaneous reverse current at rated DC blocking voltage         | T <sub>A</sub> = 25 °C  | I <sub>R</sub> <sup>(1)</sup> | 0.5   |       |       |       |       | mA   |
|  | T <sub>A</sub> = 100 °C |                               | 20    |       | 10    |       |       |      |

#### Note

(1) Pulse test: 300  $\mu$ s pulse width, 1 % duty cycle



| THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                                 |       |       |       |       |       |      |
|---|---------------------------------|-------|-------|-------|-------|-------|------|
| PARAMETER   | SYMBOL                          | SB320 | SB330 | SB340 | SB350 | SB360 | UNIT |
| Typical thermal resistance  | R <sub>θJA</sub> <sup>(1)</sup> | 30    |       |       |       |       | °C/W |
|   | R <sub>θJL</sub> <sup>(1)</sup> | 10    |       |       |       |       |      |

## Note

(1) Thermal resistance from junction to lead vertical PCB mounting, 0.500" (12.7 mm) lead length with 2.5" x 2.5" (63.5 mm x 63.5 mm) copper pad

| ORDERING INFORMATION (Example) |                 |                        |               |                                  |
|--------------------------------|-----------------|------------------------|---------------|----------------------------------|
| PREFERRED P/N                  | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                    |
| SB340-E3/54                    | 1.08            | 54                     | 1400          | 13" diameter paper tape and reel |
| SB340-E3/73                    | 1.08            | 73                     | 1000          | Ammo pack packaging              |

## RATINGS AND CHARACTERISTICS CURVES

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

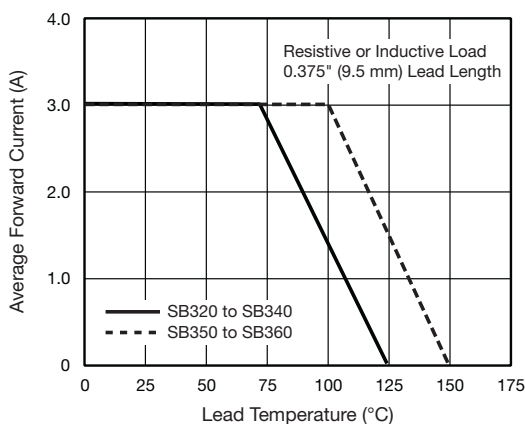


Fig. 1 - Forward Current Derating Curve

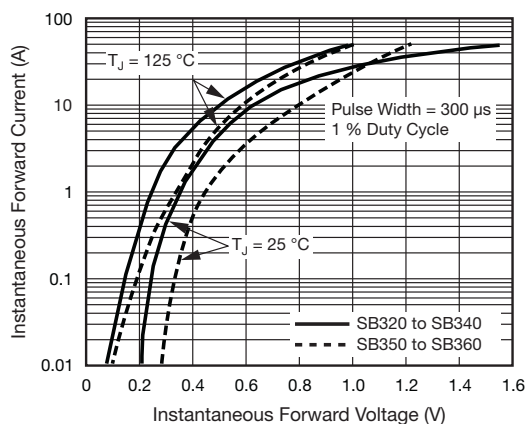


Fig. 3 - Typical Instantaneous Forward Characteristics

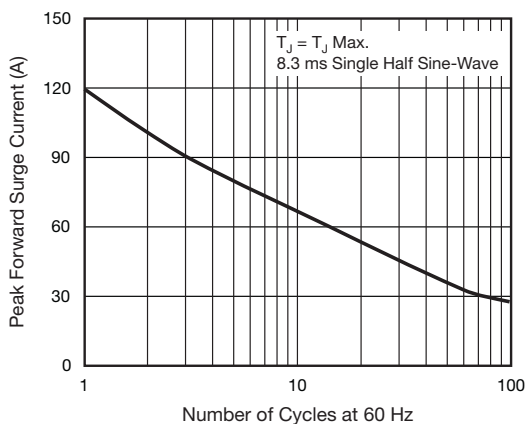


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

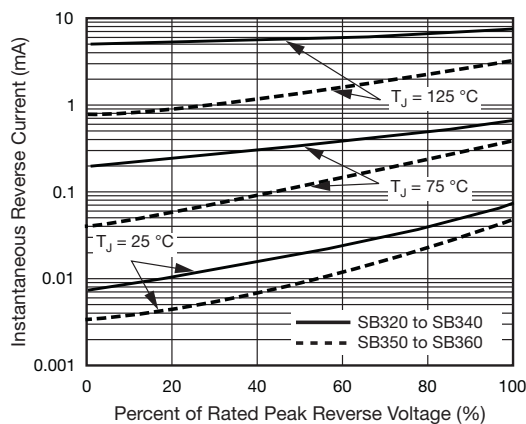


Fig. 4 - Typical Reverse Characteristics

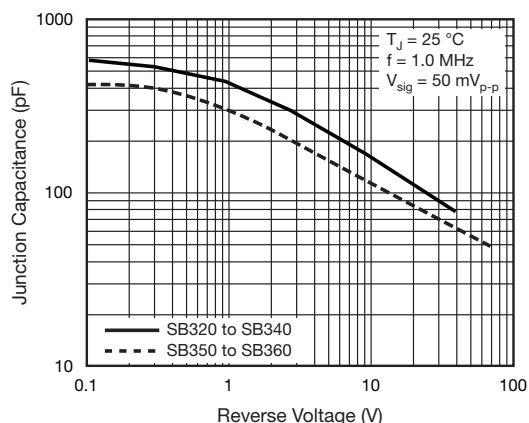


Fig. 5 - Typical Junction Capacitance

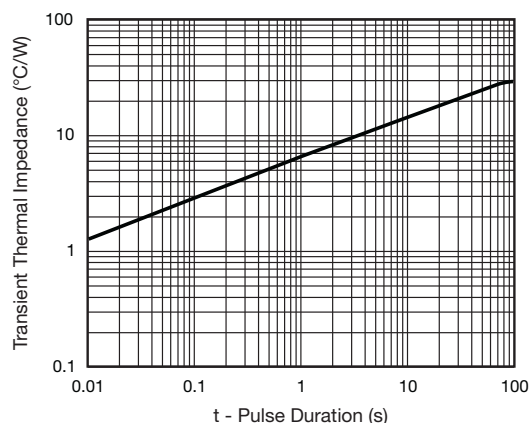
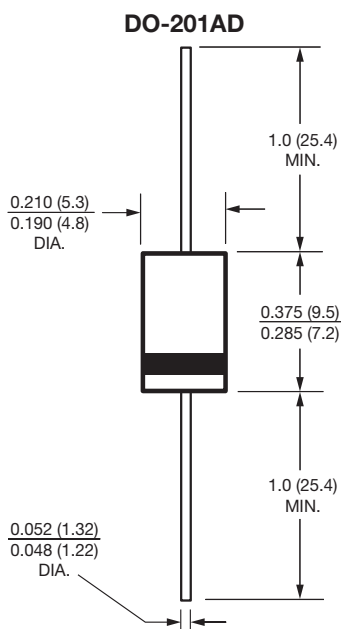


Fig. 6 - Typical Transient Thermal Impedance

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




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