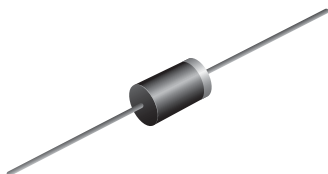


## High Voltage Schottky Plastic Rectifier

High Barrier Technology for Improved High Temperature Performance



DO-201AD

### FEATURES

- Guardring for overvoltage protection
- Low power losses and high efficiency
- Low forward voltage drop
- Low leakage current
- 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 middle 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       |
| $V_{RRM}$               | 90 V, 100 V |
| $I_{FSM}$               | 100 A       |
| $V_F$                   | 0.65 V      |
| $I_R$                   | 20 $\mu$ A  |
| $T_J$ max.              | 175 °C      |
| Package                 | DO-201AD    |
| Diode variations        | Single      |

| MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)                            |             |               |         |            |
|--|-------------|---------------|---------|------------|
| PARAMETER  | SYMBOL      | SB3H90        | SB3H100 | UNIT       |
| Maximum repetitive peak reverse voltage  | $V_{RRM}$   | 90            | 100     | V          |
| Maximum working reverse voltage  | $V_{RWM}$   | 90            | 100     | V          |
| Maximum DC blocking voltage  | $V_{DC}$    | 90            | 100     | V          |
| Maximum average forward rectified current at $T_L = 90$ °C                         | $I_{F(AV)}$ | 3.0           |         | A          |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$   | 100           |         | A          |
| Peak repetitive reverse surge current at $t_p = 2.0$ $\mu$ s, 1 kHz                | $I_{RRM}$   | 1.0           |         | A          |
| Critical rate of rise of reverse voltage   | $dV/dt$     | 10 000        |         | V/ $\mu$ s |
| Storage temperature range  | $T_{STG}$   | - 55 to + 175 |         | °C         |
| Maximum operating junction temperature   | $T_J$       | 175           |         | °C         |

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

| PARAMETER                              | TEST CONDITIONS      |                                     | SYMBOL      | SB3H90 | SB3H100 | UNIT          |
|--|----------------------|-------------------------------------|-------------|--------|---------|---------------|
| Maximum instantaneous forward voltage  | $I_F = 3.0\text{ A}$ | $T_J = 25\text{ }^{\circ}\text{C}$  | $V_F^{(1)}$ | 0.80   |         | V             |
|  |                      | $T_J = 125\text{ }^{\circ}\text{C}$ |             | 0.65   |         |               |
| Maximum reverse current at rated $V_R$ |                      | $T_J = 25\text{ }^{\circ}\text{C}$  | $I_R^{(2)}$ | 20     |         | $\mu\text{A}$ |
|  |                      | $T_J = 125\text{ }^{\circ}\text{C}$ |             | 4.0    |         | mA            |

**Notes**(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle(2) Pulse test: Pulse width  $\leq 40\text{ ms}$ **THERMAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

| PARAMETER                  | SYMBOL                | SB3H90 | SB3H100 | UNIT |
|----------------------------|-----------------------|--------|---------|------|
| Maximum thermal resistance | $R_{\theta JA}^{(1)}$ | 50     |         | °C/W |
|                            | $R_{\theta JL}^{(1)}$ | 20     |         |      |

**Note**

(1) PCB mounted with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

**ORDERING INFORMATION** (Example)

| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                    |
|---------------|-----------------|------------------------|---------------|----------------------------------|
| SB3H100-E3/54 | 1.09            | 54                     | 1400          | 13" diameter paper tape and reel |
| SB3H100-E3/73 | 1.09            | 73                     | 1000          | Ammo pack packaging              |

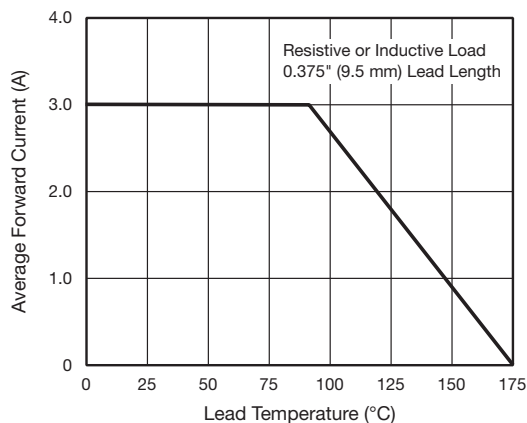
**RATINGS AND CHARACTERISTICS CURVES**( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

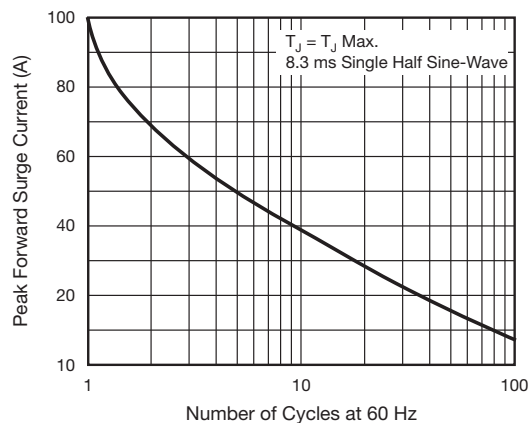


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

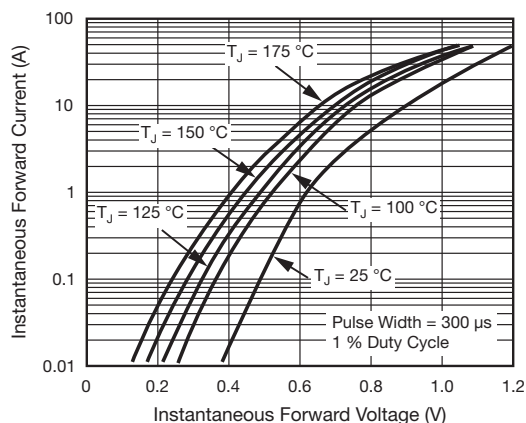


Fig. 3 - Typical Instantaneous Forward Characteristics

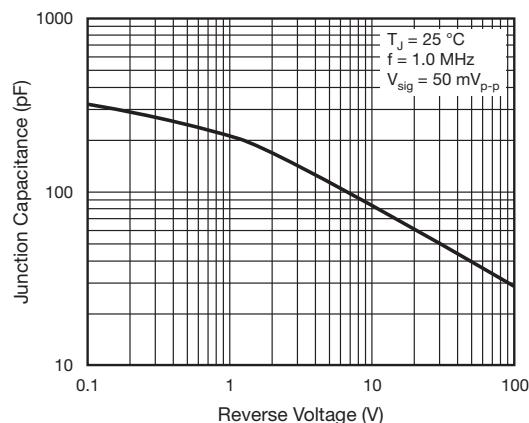


Fig. 5 - Typical Junction Capacitance

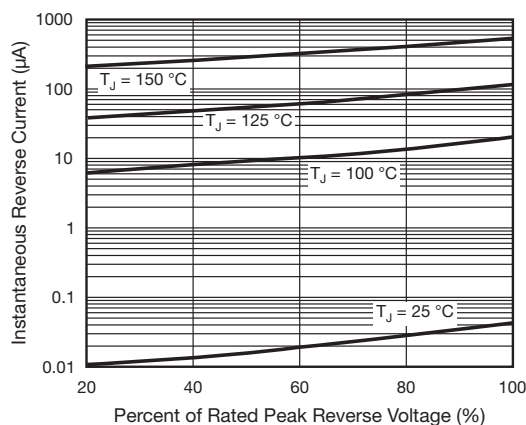


Fig. 4 - Typical Reverse Characteristics

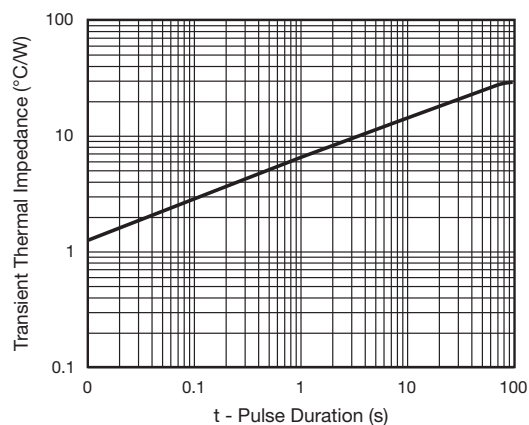
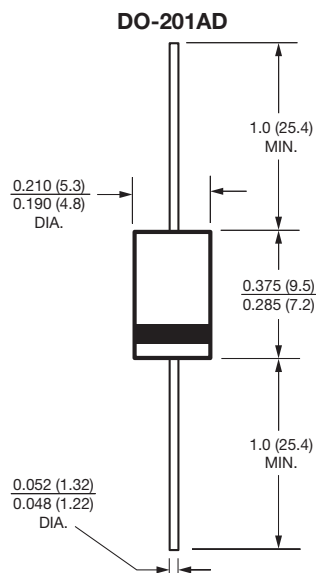


Fig. 6 - Typical Transient Thermal Impedance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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