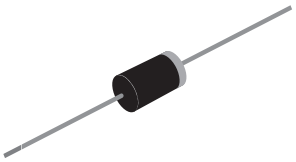
# Schottky Barrier Rectifier



DO-201AD

## FEATURES

- Guardring for overvoltage protection
- Extremely fast switching
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

RoHS COMPLIANT

## TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, dc-to-dc converters, and polarity protection applications.

## MECHANICAL DATA

**Case:** DO-201AD

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test

**Polarity:** Color band denotes the cathode end

| PRIMARY CHARACTERISTICS | |
|---|---|
| $I_{F(AV)}$ | 5.0 A |
| $V_{RRM}$ | 20 V to 60 V |
| $I_{FSM}$ | 220 A |
| $V_F$ | 0.48 V, 0.65 V |
| $T_J$ max. | 150 °C |

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

| PARAMETER | SYMBOL | SB520 | SB530 | SB540 | SB550 | SB560 | UNIT |
|---|---|---|---|---|---|---|---|
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 20 | 30 | 40 | 50 | 60 | V |
| Maximum RMS voltage | $V_{RMS}$ | 14 | 21 | 28 | 35 | 42 | V |
| Maximum DC blocking voltage | $V_{DC}$ | 20 | 30 | 40 | 50 | 60 | V |
| Maximum average forward rectified current 0.375" (9.5 mm) lead length (Fig. 1) | $I_{F(AV)}$ | 5.0 | | | | | A |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$ | 220 | | | | | A |
| Operating junction temperature range | $T_J$ | - 65 to + 150 | | | | | °C |
| Storage temperature range | $T_{STG}$ | - 65 to + 150 | | | | | °C |

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

| PARAMETER | TEST CONDITIONS | | SYMBOL | SB520 | SB530 | SB540 | SB550 | SB560 | UNIT |
|---|---|---|---|---|---|---|---|---|---|
| Maximum instantaneous forward voltage (1) | 5.0 A | | $V_F$ | 0.48 | | | 0.65 | | V |
| Maximum instantaneous reverse current at rated DC blocking voltage (1) | | $T_A$ = 25 °C | $I_R$ | 0.5 | | | | | mA |
| | | $T_A$ = 100 °C | | 50 | | | 25 | | |

**Note:**

(1) Pulse test: 300 µs pulse width, 1 % duty cycle


For technical questions within your region, please contact one of the following:
PDD-Americas@vishay.com, PDD-Asia@vishay.com, PDD-Europe@vishay.com

| THERMAL CHARACTERISTICS ($T_A$ = 25 °C unless otherwise noted) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **PARAMETER** | **SYMBOL** | **SB520** | **SB530** | **SB540** | **SB550** | **SB560** | **UNIT** |
| Typical thermal resistance (1) | $R_{\theta JA}$<br>$R_{\theta JL}$ | 25<br>8 | | | | | °C/W |

**Note:**

(1) Thermal resistance from junction to lead vertical P.C.B. mounting, 0.375" (9.5 mm) lead length

| ORDERING INFORMATION (Example) | | | | |
|---|---|---|---|---|
| **PREFERRED P/N** | **UNIT WEIGHT (g)** | **PREFERRED PACKAGE CODE** | **BASE QUANTITY** | **DELIVERY MODE** |
| SB540-E3/54 | 1.09 | 54 | 1400 | 13" diameter paper tape and reel |
| SB540-E3/73 | 1.09 | 73 | 1000 | Ammo pack packaging |

## RATINGS AND CHARACTERISTICS CURVES

($T_A$ = 25 °C unless otherwise noted)

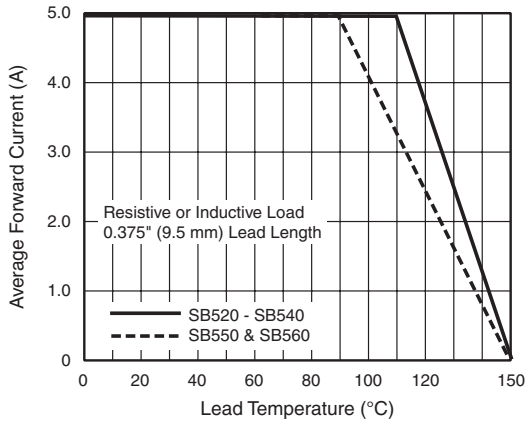



Figure 1. Forward Current Derating Curve

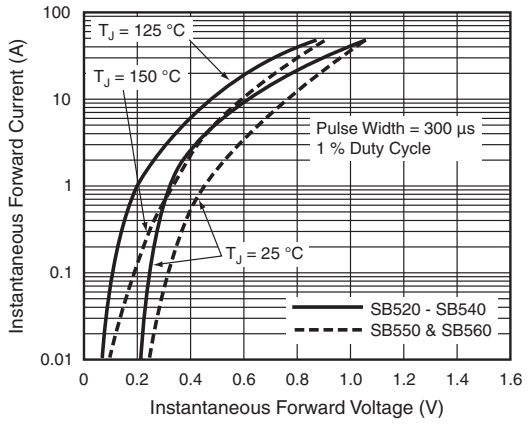



Figure 3. Typical Instantaneous Forward Characteristics

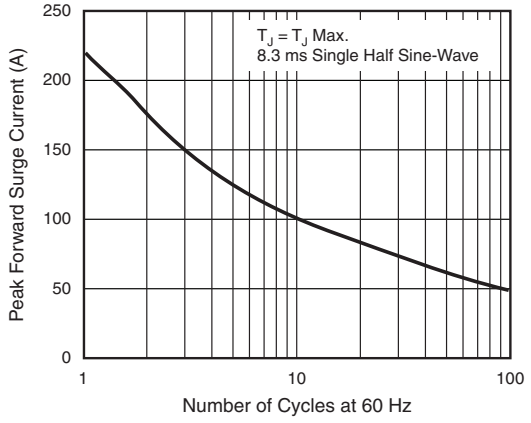



Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

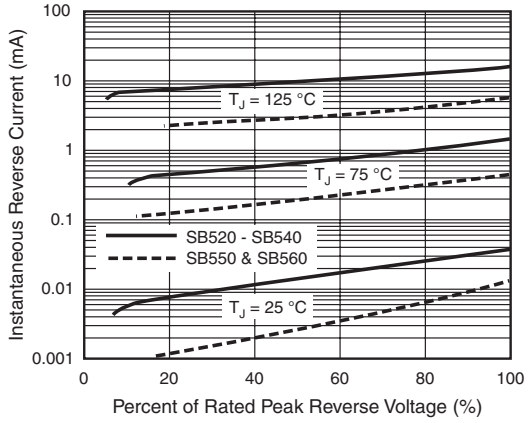



Figure 4. Typical Reverse Characteristics

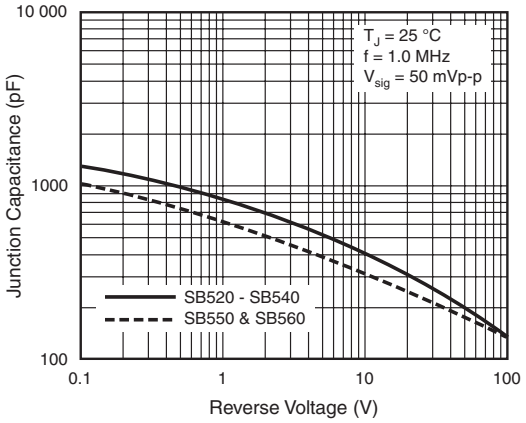



Figure 5. Typical Junction Capacitance

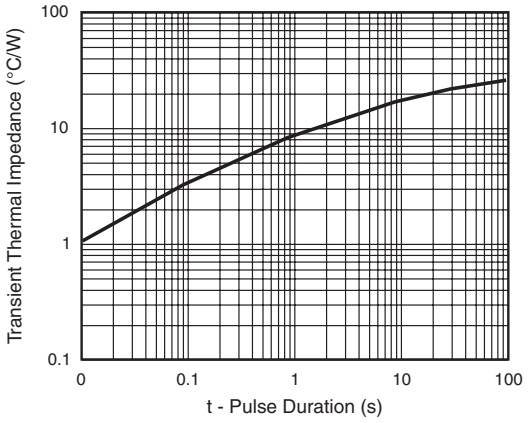
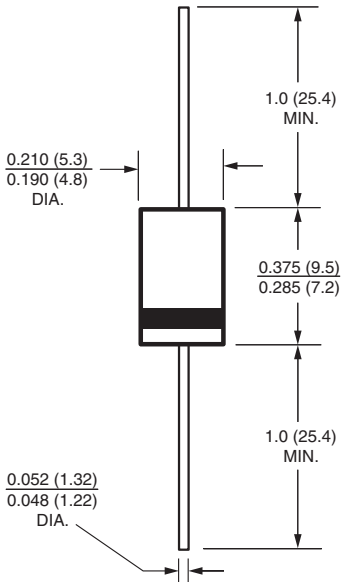



Figure 6. Typical Transient Thermal Impedance

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

**DO-201AD**



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