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February 2015

# SB1245

## Ultra Low VF Schottky Barrier Rectifier

### Applications

- This device is designed for low voltage, high frequency inverters, free-wheeling and polarity protection applications.
- This is also designed as bypass diode for solar modules.

### Features

- UL Flammability Classification 94V-O
- Environment Standards MIL-S-19500/228 Compliant
- Low Power Loss, High Efficiency
- High Surge Capacity
- Pb-free, RoHS Compliant



**DO-201AD**  
COLOR BAND DENOTES CATHODE

### Ordering Information

| Part Number | Top Mark | Package  | Packing Method |
|-------------|----------|----------|----------------|
| SB1245      | SB1245   | DO-201AD | Tape and Reel  |

### Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

| Symbol      | Parameter   | Value                     | Unit                   |    |
|-------------|---|---------------------------|------------------------|----|
| $V_{RRM}$   | Maximum Repetitive Reverse Voltage  | 45                        | V                      |    |
| $V_{RMS}$   | Maximum RMS Voltage   | 31                        | V                      |    |
| $V_{DC}$    | Maximum DC Blocking Voltage   | 45                        | V                      |    |
| $I_{F(AV)}$ | Maximum Average Forward Current   | 12                        | A                      |    |
| $I_{FSM}$   | Peak Forward Surge Current, 8.3 ms Single Half-Sine-Wave, Superimposed on Rated Load (JEDEC Method) | 150                       | A                      |    |
| $V_F$       | Maximum Forward Voltage at $I_F = 12\text{ A}$  | 0.55                      | V                      |    |
| $I_R$       | Maximum DC Reverse Current at Rated $V_{DC}$  | $T_J = 25^\circ\text{C}$  | 0.1                    | mA |
|             |   | $T_J = 100^\circ\text{C}$ | 10                     |    |
| $I^2t$      | Rating for Fusing ( $t < 8.3\text{ ms}$ )   | 3.7                       | $\text{A}^2\text{sec}$ |    |
| $T_J$       | Operating Junction Temperature Range  | -55 to +150               | $^\circ\text{C}$       |    |
|             | Operating Junction Temperature Range, In DC Forward Mode  | -55 to +200               |                        |    |
| $T_{STG}$   | Storage Temperature Range   | -55 to +175               | $^\circ\text{C}$       |    |

**Thermal Characteristics<sup>(1)</sup>**

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

| Symbol          | Parameter                                    | Value | Unit               |
|-----------------|--|-------|--------------------|
| $R_{\theta JL}$ | Typical Thermal Resistance, Junction-to-Lead | 10.5  | $^\circ\text{C/W}$ |

**Note:**

1. Temperature read point using thermocouple is at 10 mm from case edge.



## Typical Performance Characteristics

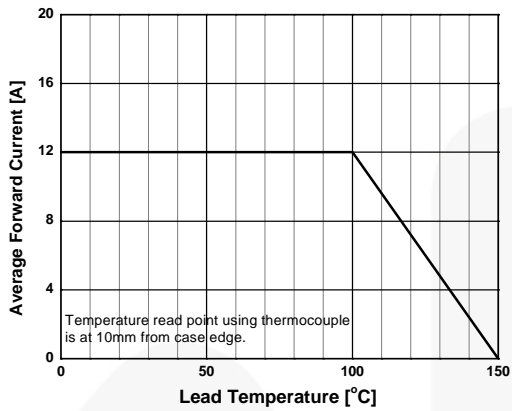


Figure 1a. Average Forward Current Derating Curve

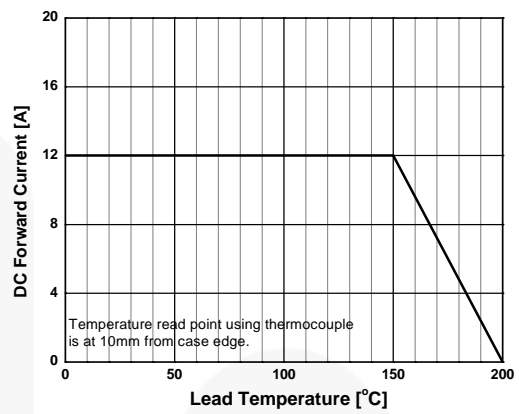


Figure 1b. DC Forward Current Derating Curve

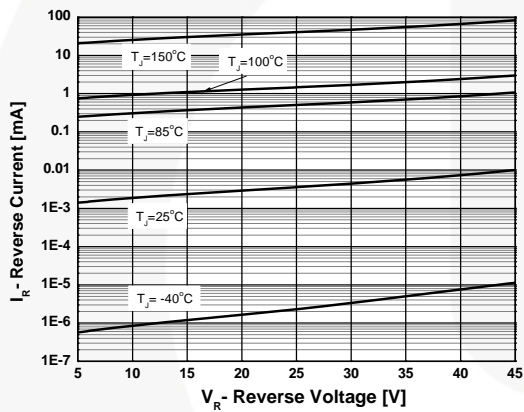


Figure 2. Reverse Current vs. Reverse Voltage

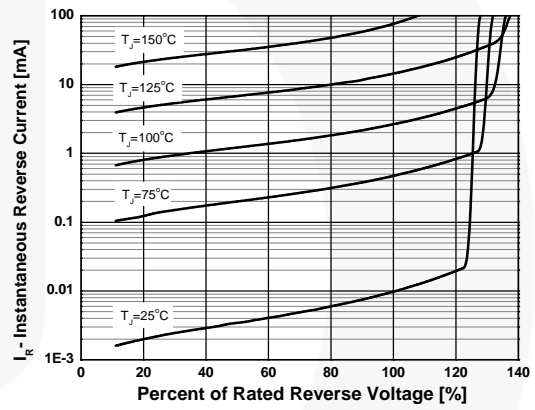


Figure 3. Typical Reverse Characteristics

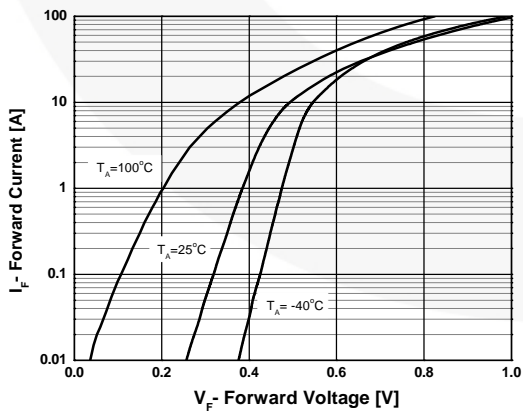


Figure 4. Forward Voltage vs. Forward Current

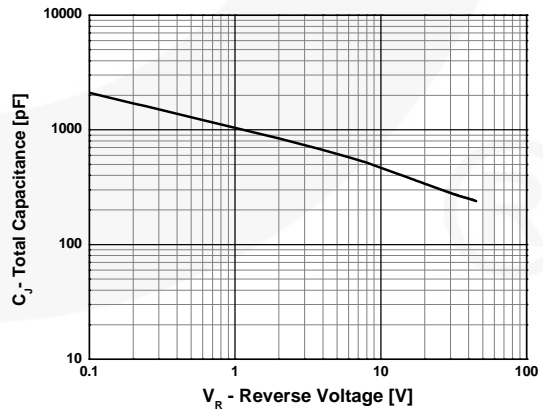
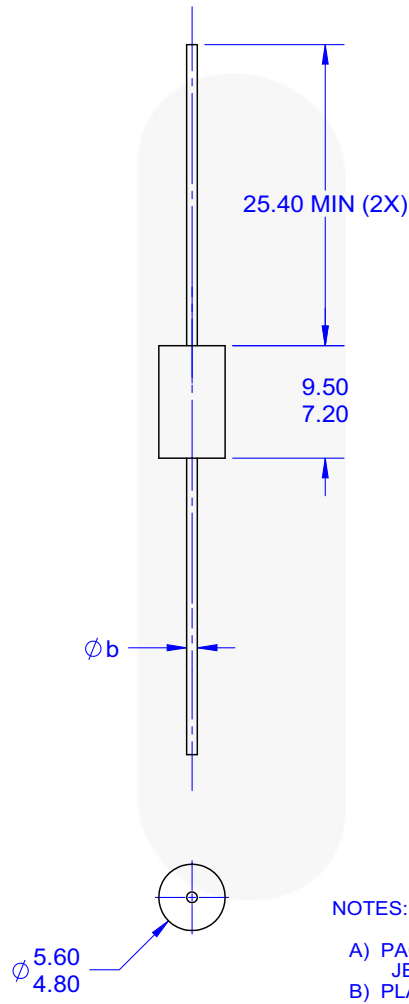


Figure 5. Typical Junction Capacitance

Physical Dimensions



- NOTES: UNLESS OTHERWISE SPECIFIED
- A) PACKAGE STANDARD REFERENCE: JEDEC DO-201 VARIATION AD.
  - B) PLASTIC PACKAGE BODY.
  - D) ALL DIMENSIONS ARE IN MILLIMETERS.
  - E)  $\phi b$  DIMENSION REPRESENT LIKE BELOW:
    - OPTION AD = 1.20MIN TO 1.30MAX
    - OPTION AE = 0.94MIN TO 1.07MAX
  - E) DRAWING FILE NAME: DO201AREV1






Figure 6. AXIAL LEADED, JEDEC DO201, OPTION AD





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