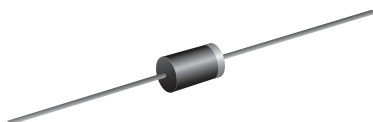


# High Voltage Schottky Plastic Rectifier

High Barrier Technology for Improved High Temperature Performance



DO-15 (DO-204AC)

## 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

## PRIMARY CHARACTERISTICS

|                       |                  |
|-----------------------|------------------|
| $I_{F(AV)}$           | 2.0 A            |
| $V_{RRM}$             | 90 V, 100 V      |
| $I_{FSM}$             | 75 A             |
| $V_F$                 | 0.65 V           |
| $I_R$                 | 10 $\mu$ A       |
| $T_J$ max.            | 175 °C           |
| Package               | DO-15 (DO-204AC) |
| Circuit configuration | Single           |

## TYPICAL APPLICATIONS

For use in middle voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

## MECHANICAL DATA

**Case:** DO-15 (DO-204AC)

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade

### Note

- SB2H100 for commercial grade only

**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

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

| PARAMETER                                                                          | SYMBOL      | SB2H90      | SB2H100 | UNIT       |
|------------------------------------------------------------------------------------|-------------|-------------|---------|------------|
| Maximum repetitive peak reverse voltage                                            | $V_{RRM}$   | 90          | 100     | V          |
| Working peak reverse voltage                                                       | $V_{RWM}$   | 90          | 100     | V          |
| Maximum DC blocking voltage                                                        | $V_{DC}$    | 90          | 100     | V          |
| Maximum average forward rectified current at $T_A = 25$ °C                         | $I_{F(AV)}$ | 2.0         |         | A          |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$   | 75          |         | 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      | SB2H90 | SB2H100 | UNIT          |
|----------------------------------------|----------------------|-------------------------------------|-------------|--------|---------|---------------|
| Maximum instantaneous forward voltage  | $I_F = 2.0\text{ A}$ | $T_J = 25\text{ }^{\circ}\text{C}$  | $V_F^{(1)}$ | 0.79   |         | V             |
|                                        |                      | $T_J = 125\text{ }^{\circ}\text{C}$ |             | 0.65   |         |               |
| Maximum reverse current at rated $V_R$ |                      | $T_J = 25\text{ }^{\circ}\text{C}$  | $I_R^{(2)}$ | 10     |         | $\mu\text{A}$ |
|                                        |                      | $T_J = 125\text{ }^{\circ}\text{C}$ |             | 4.0    |         | mA            |

**Notes**

(1) Pulse test: 300 ms 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                          | SB2H90 | SB2H100 | UNIT |
|----------------------------|---------------------------------|--------|---------|------|
| Typical thermal resistance | R <sub>θJA</sub> <sup>(1)</sup> | 45     |         | °C/W |
|                            | R <sub>θJL</sub> <sup>(1)</sup> | 14     |         |      |

**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                    |
|---------------|-----------------|------------------------|---------------|----------------------------------|
| SB2H90-E3/54  | 0.398           | 54                     | 4000          | 13" diameter paper tape and reel |
| SB2H90-E3/73  | 0.398           | 73                     | 2000          | Ammo pack packaging              |



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

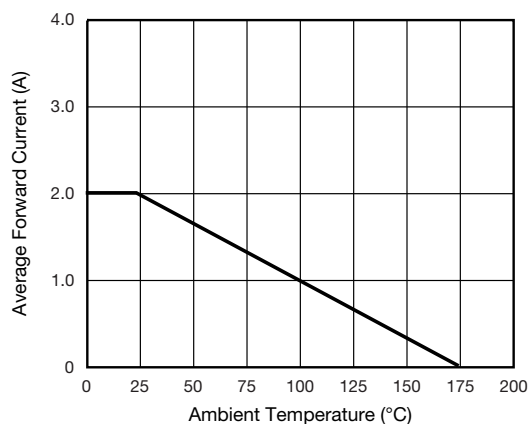


Fig. 1 - Forward Current Derating Curve

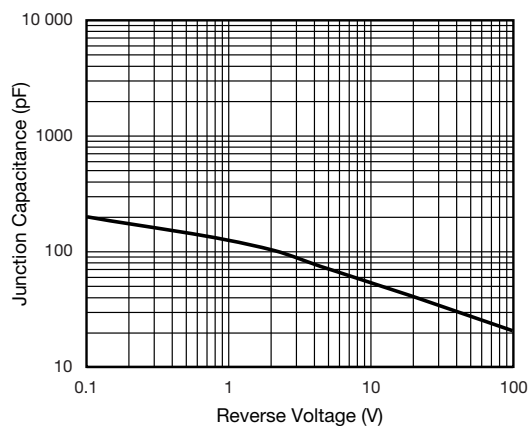


Fig. 4 - Typical Junction Capacitance

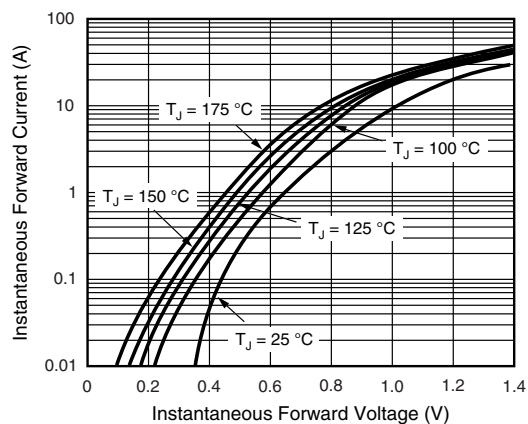


Fig. 2 - Typical Instantaneous Forward Characteristics

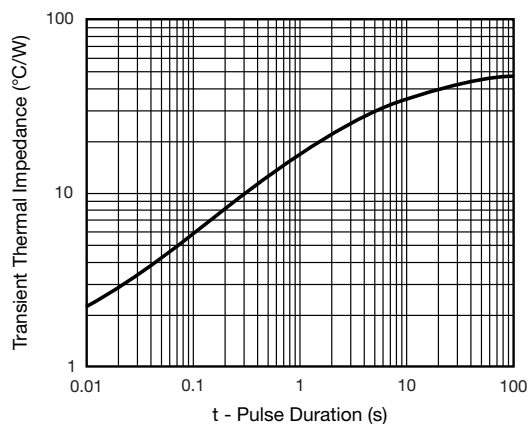


Fig. 5 - Typical Transient Thermal Impedance

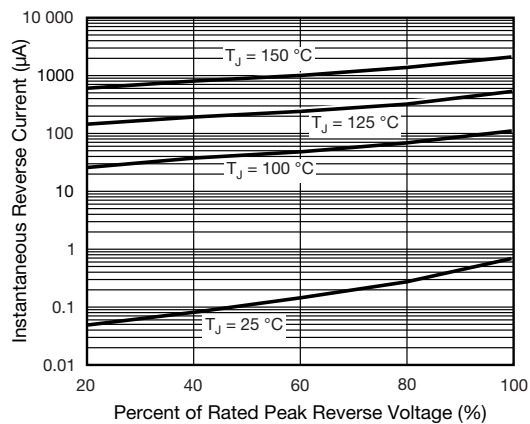
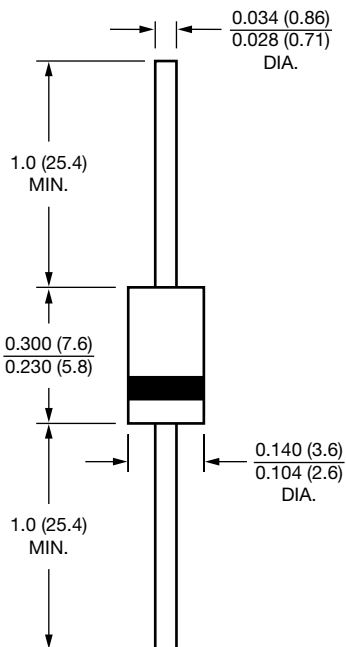


Fig. 3 - Typical Reverse Characteristics



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

**DO-15 (DO-204AC)**





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