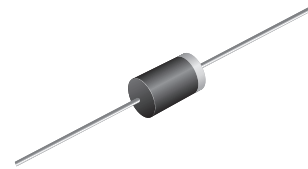


High-Voltage Schottky Rectifier

High Barrier Technology for improved high temperature performance

Major Ratings and 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 μ A |
| T_j max. | 175 °C |



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 260 °C, 40 seconds



Mechanical Data

Case: DO-201AD

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade

Polarity: Color band denotes the cathode end

Typical Applications

For use in middle voltage high frequency inverters, free wheeling, dc-to-dc converters, and polarity protection applications

Maximum Ratings

$T_A = 25$ °C unless otherwise specified

| 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 $t_p = 2.0$ μ s, 1 KHz | I_{RRM} | 1.0 | | A |
| Critical rate of rise of reverse voltage | dv/dt | 10000 | | V/ μ 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 specified

| Parameter | Test condition | Symbol | SB3H90 | SB3H100 | Unit |
|--|--|--------|--------|---------|---------------------|
| Maximum instantaneous forward voltage at: ⁽¹⁾ | $I_F = 3.0\text{ A}$, $T_J = 25\text{ }^\circ\text{C}$ | V_F | 0.80 | | V |
| | $I_F = 3.0\text{ A}$, $T_J = 125\text{ }^\circ\text{C}$ | | 0.65 | | |
| Maximum DC reverse current at rated DC blocking voltage | $T_J = 25\text{ }^\circ\text{C}$ | I_R | 20 | | μA mA |
| | $T_J = 125\text{ }^\circ\text{C}$ | | 4.0 | | |

Notes:

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

Thermal Characteristics

$T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified

| Parameter | Symbol | SB3H90 | SB3H100 | Unit |
|---|-----------------|--------|---------|--------------------|
| Maximum thermal resistance ⁽¹⁾ | $R_{\theta JA}$ | 50 | | $^\circ\text{C/W}$ |
| | $R_{\theta JL}$ | 20 | | |

Notes:

(1) P.C.B. mounted with 0.2 x 0.2" (5.0 x 5.0 mm) copper pad areas

Ratings and Characteristics Curves

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

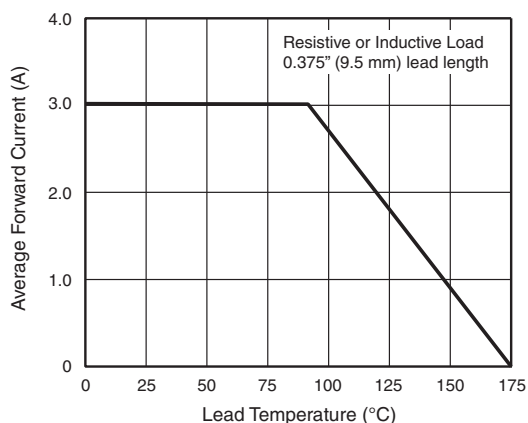


Figure 1. Forward Current Derating Curve

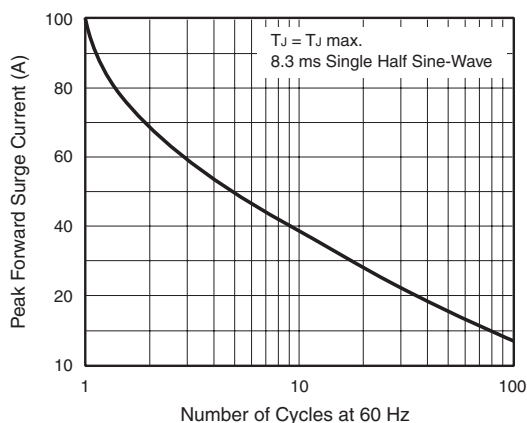


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

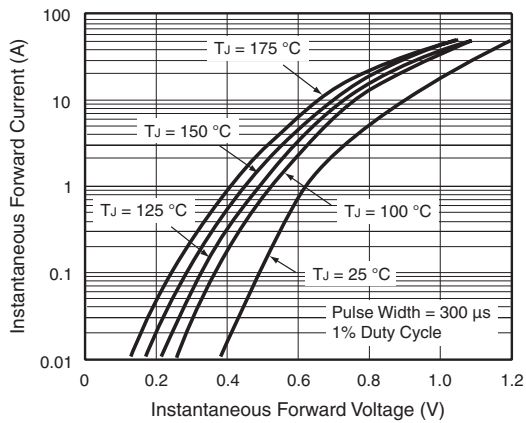


Figure 3. Typical Instantaneous Forward Characteristics

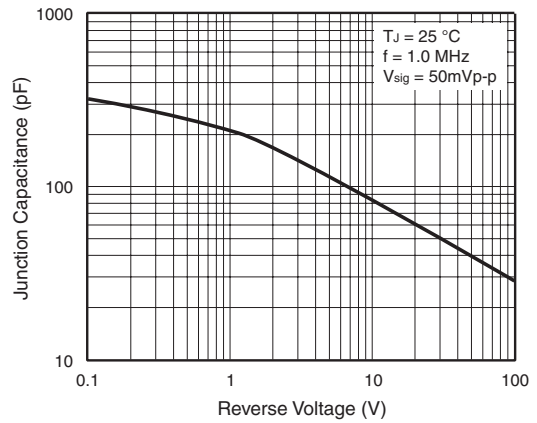


Figure 5. Typical Junction Capacitance

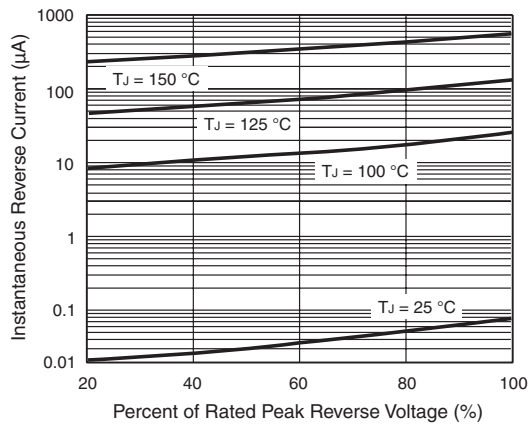


Figure 4. Typical Reverse Characteristics

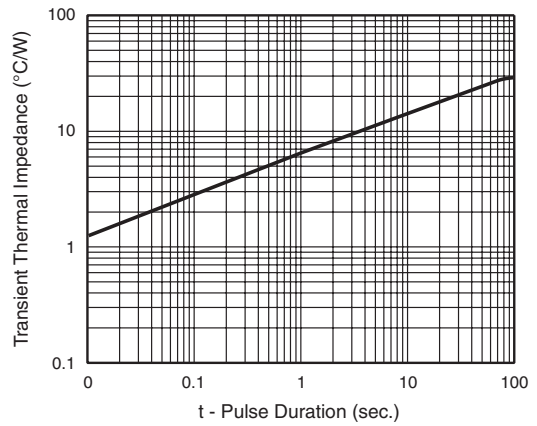
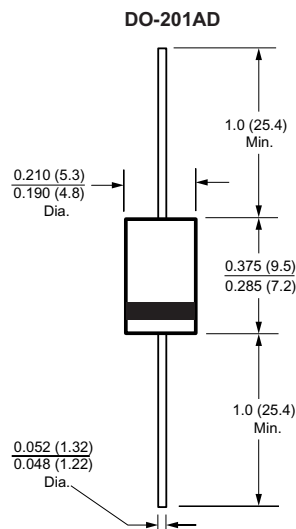


Figure 6. Typical Transient Thermal Impedance

Package outline dimensions in inches (millimeters)





Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.