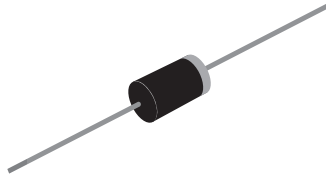


## High-Voltage Schottky Rectifier

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 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

For use in middle 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, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	5.0 A
$V_{RRM}$	90 V, 100 V
$I_{FSM}$	200 A
$V_F$	0.70 V
$I_R$	200 $\mu$ A
$T_J \text{ max.}$	175 °C

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)				
PARAMETER	SYMBOL	SB5H90	SB5H100	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 $T_C = 80$ °C	$I_{F(AV)}$	5.0		A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	200		A
Peak repetitive reverse surge current at $t_p = 2.0$ $\mu$ s, 1 kHz	$I_{RRM}$	1.0		A
Storage temperature range	$T_{STG}$	- 55 to + 175		°C
Maximum operating junction temperature	$T_J$	175		°C

ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SB5H90	SB5H100	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	I <sub>F</sub> = 5.0 A	T <sub>A</sub> = 25 °C	V <sub>F</sub>	0.80		V
	I <sub>F</sub> = 5.0 A	T <sub>A</sub> = 125 °C		0.70		
Maximum reverse current at rated V <sub>R</sub> <sup>(2)</sup>			I <sub>R</sub>	200		μA
				T <sub>A</sub> = 125 °C		

**Notes:**

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	SB5H90	SB5H100	UNIT
Maximum thermal resistance <sup>(1)</sup>	R <sub>θJA</sub>	25		°C/W
	R <sub>θJL</sub>	8		

**Note:**

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

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SB5H100-E3/54	1.1	54	1400	13" diameter paper tape and reel
SB5H100-E3/73	1.1	73	1000	Ammo pack packaging
SB5H100HE3/54 <sup>(1)</sup>	1.1	54	1400	13" diameter paper tape and reel
SB5H100HE3/73 <sup>(1)</sup>	1.1	73	1000	Ammo pack packaging

**Note:**

- (1) Automotive grade AEC Q101 qualified

## RATINGS AND CHARACTERISTICS CURVES

(T<sub>A</sub> = 25 °C unless otherwise noted)

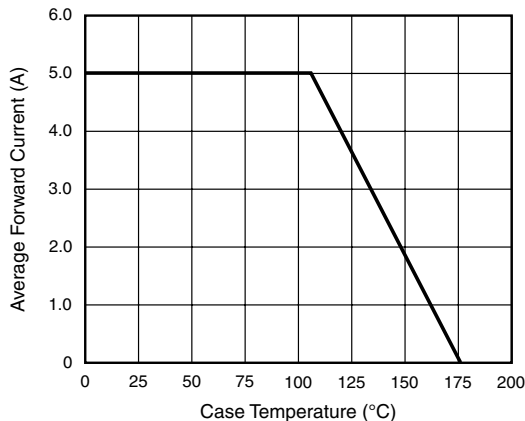


Figure 1. Forward Current Derating Curve

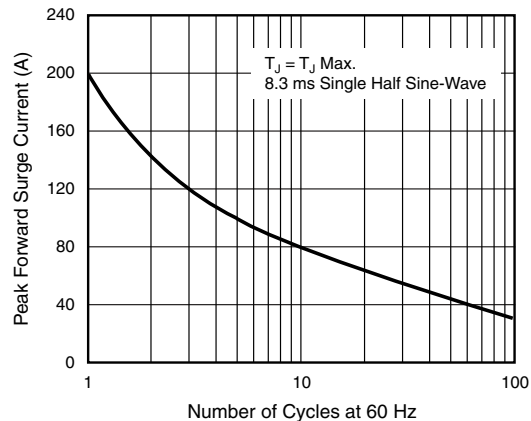


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

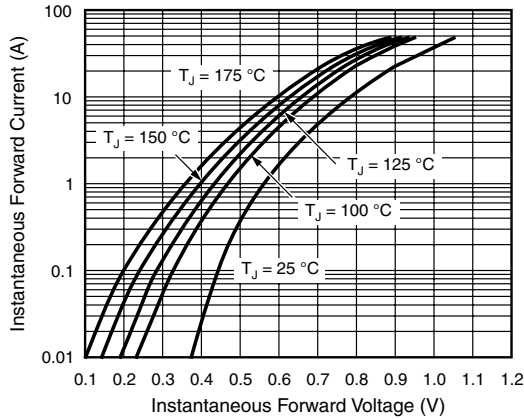


Figure 3. Typical Instantaneous Forward Characteristics

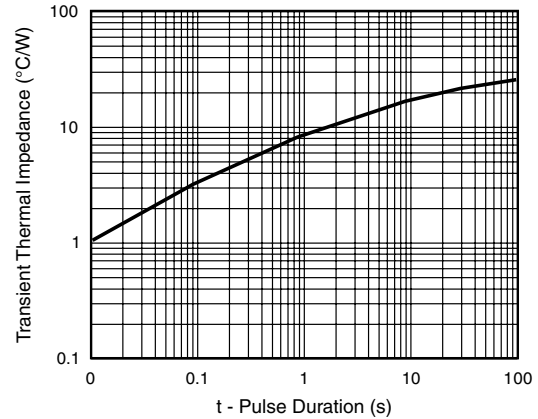


Figure 5. Typical Transient Thermal Impedance

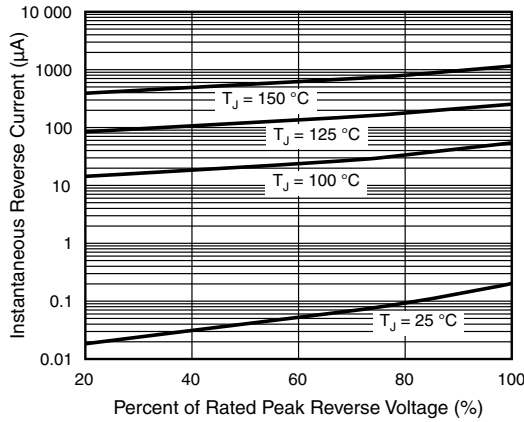


Figure 4. Typical Reverse Characteristics

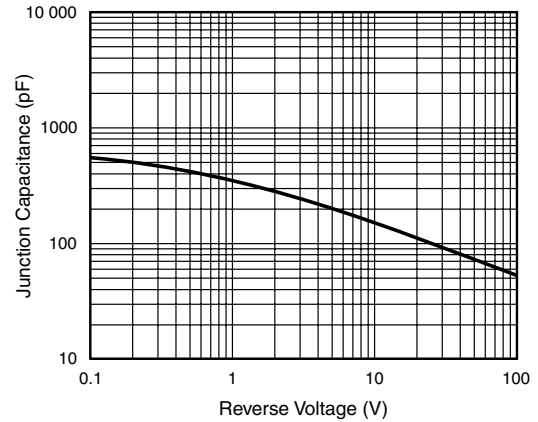
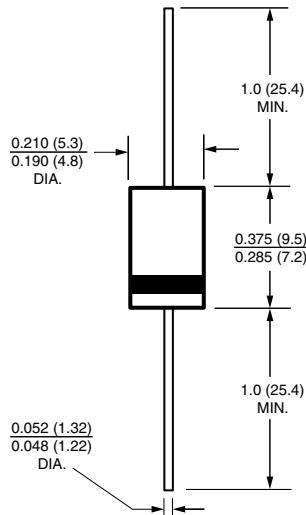


Figure 6. Typical Junction Capacitance

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

#### DO-201AD





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