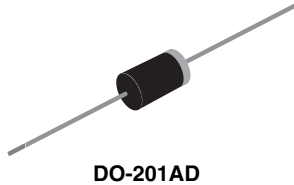


## High-Voltage Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



### 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	
$I_{F(AV)}$	3.0 A
$V_{RRM}$	90 V, 100 V
$I_{FSM}$	100 A
$V_F$	0.65 V
$I_R$	20 $\mu$ A
$T_J$ max.	175 °C

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)				
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 $t_p = 2.0$ $\mu$ 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 ( $T_A = 25$ °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SB3H90	SB3H100	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	$I_F = 3.0$ A	$T_J = 25$ °C	$V_F$	0.80		V
	$I_F = 3.0$ A	$T_J = 125$ °C				
Maximum reverse current at rated $V_R$ <sup>(2)</sup>			$I_R$	20		$\mu$ A
				4.0		mA

**Notes:**

(1) Pulse test: 300  $\mu$ s pulse width, 1 % duty cycle

(2) Pulse test: Pulse width  $\leq$  40 ms



THERMAL CHARACTERISTICS ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	SB3H90	SB3H100	UNIT
Maximum thermal resistance <sup>(1)</sup>	$R_{\theta JA}$		50	$^\circ\text{C/W}$
	$R_{\theta JL}$		20	

**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
SB3H100-E3/54	1.09	54	1400	13" diameter paper tape and reel
SB3H100-E3/73	1.09	73	1000	Ammo pack packaging
SB3H100HE3/54 <sup>(1)</sup>	1.09	54	1400	13" diameter paper tape and reel
SB3H100HE3/73 <sup>(1)</sup>	1.09	73	1000	Ammo pack packaging

**Note:**

(1) Automotive grade AEC Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES**

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

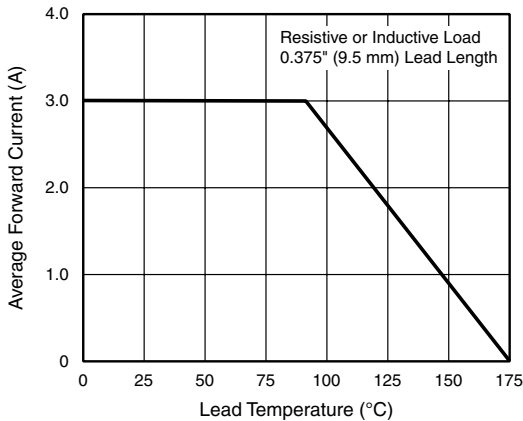


Figure 1. Forward Current Derating Curve

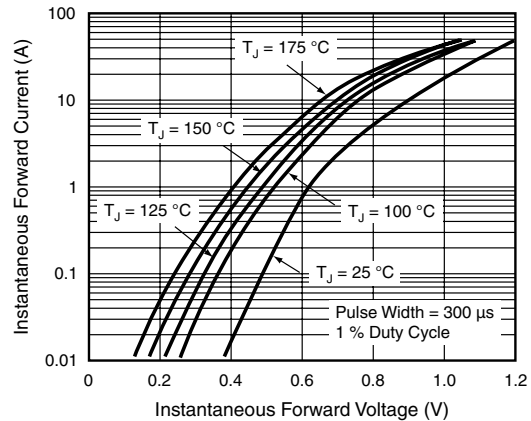


Figure 3. Typical Instantaneous Forward Characteristics

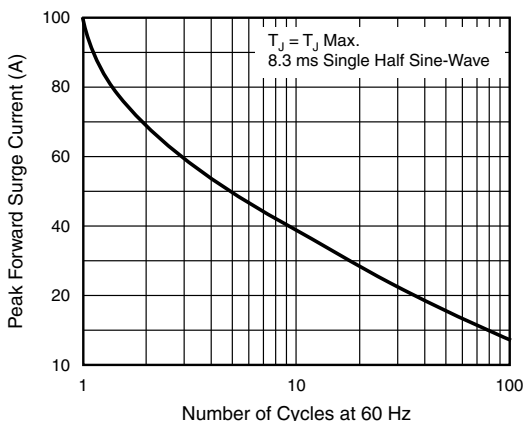


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

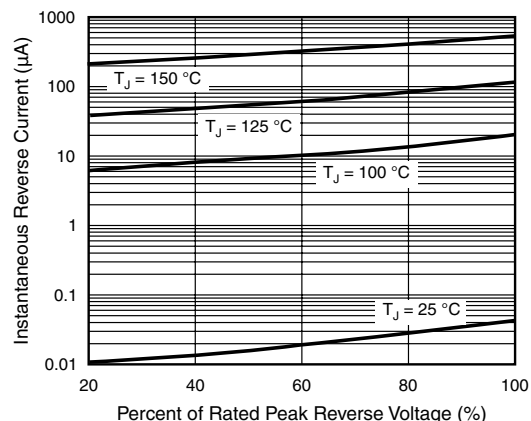


Figure 4. Typical Reverse Characteristics

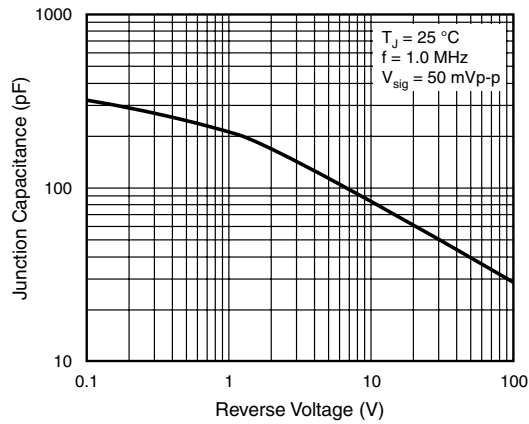


Figure 5. Typical Junction Capacitance

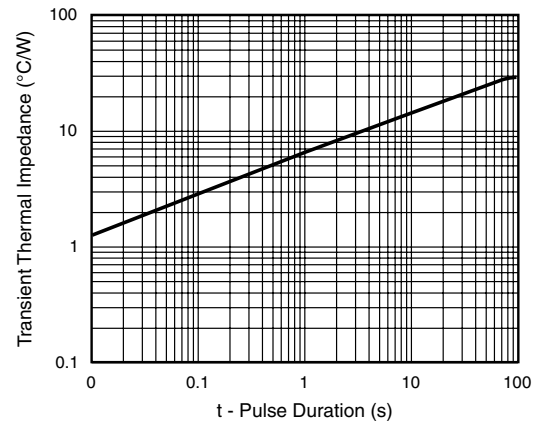
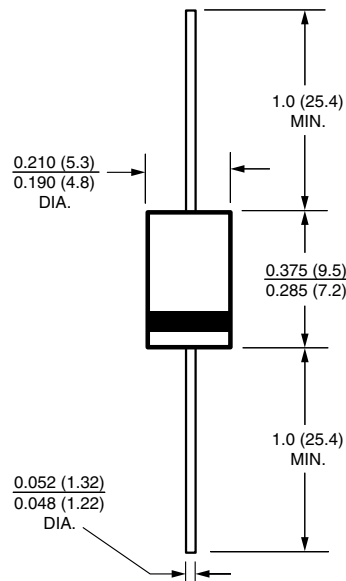


Figure 6. Typical Transient Thermal Impedance

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

**DO-201AD**





## Disclaimer

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