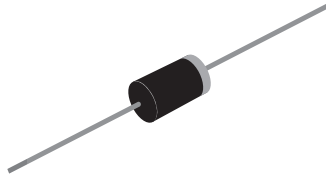


High-Voltage Schottky Rectifier

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 μ A
T_J 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 $t_p = 2.0$ μ 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 _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SB5H90	SB5H100	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	I _F = 5.0 A	T _A = 25 °C	V _F	0.80		V
	I _F = 5.0 A	T _A = 125 °C		0.70		
Maximum reverse current at rated V _R ⁽²⁾			I _R	200		μA
				T _A = 125 °C		

Notes:

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

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	SB5H90	SB5H100	UNIT
Maximum thermal resistance ⁽¹⁾	R _{θJA}	25		°C/W
	R _{θJL}	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 ⁽¹⁾	1.1	54	1400	13" diameter paper tape and reel
SB5H100HE3/73 ⁽¹⁾	1.1	73	1000	Ammo pack packaging

Note:

- (1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

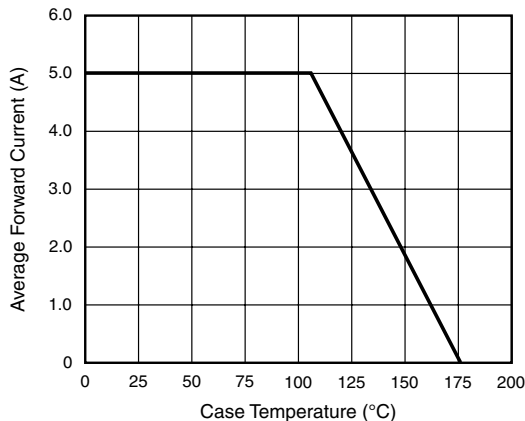


Figure 1. Forward Current Derating Curve

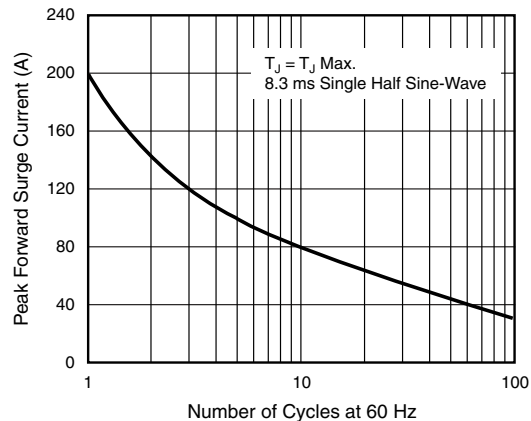


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

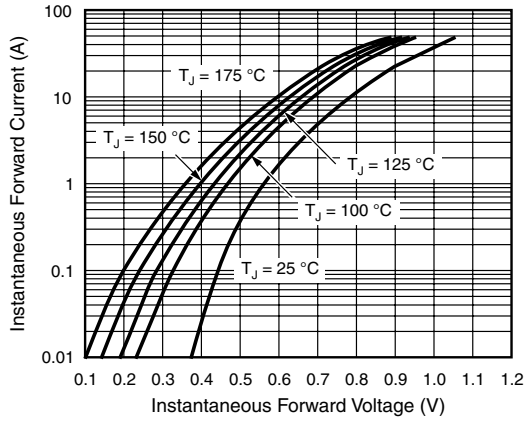


Figure 3. Typical Instantaneous Forward Characteristics

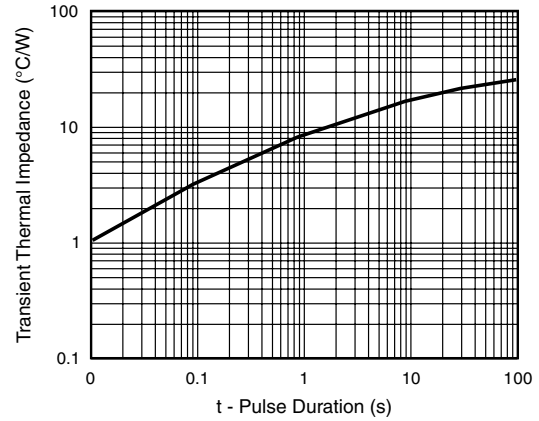


Figure 5. Typical Transient Thermal Impedance

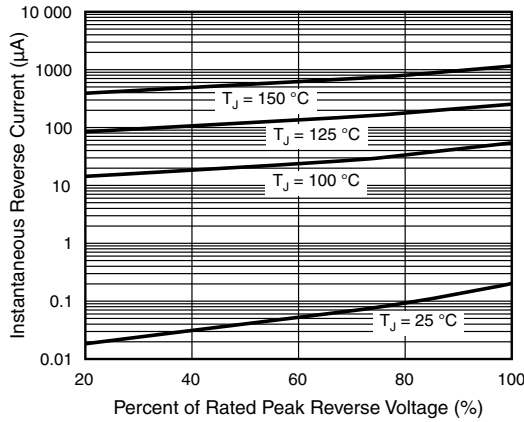


Figure 4. Typical Reverse Characteristics

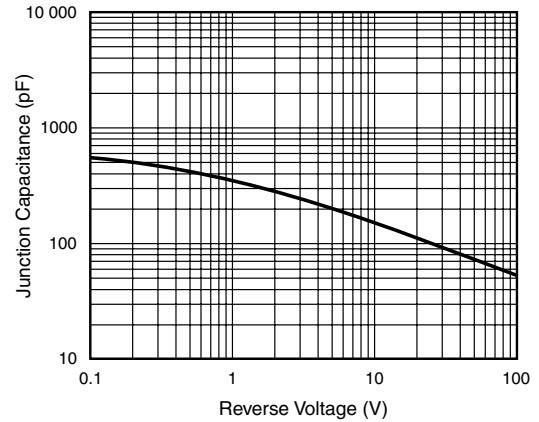
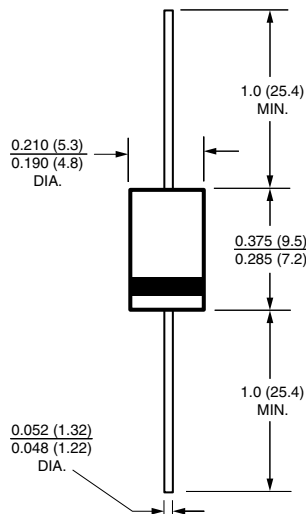


Figure 6. Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-201AD





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