

RoHS



## Vishay General Semiconductor

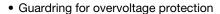
# **High-Voltage Schottky Rectifier**

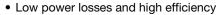
High Barrier Technology for Improved High Temperature Performance



PRIMARY CHARACTERISTICS				
I <sub>F(AV)</sub>	3.0 A			
$V_{RRM}$	90 V, 100 V			
I <sub>FSM</sub>	100 A			
$V_{F}$	0.65 V			
I <sub>R</sub>	20 μΑ			
T <sub>.I</sub> max.	175 °C			

#### **FEATURES**





Low forward voltage drop

· Low leakage current

· High forward surge capabilitmy

• High frequency operation

• Solder dip 275 °C max. 10 s, per JESD 22-B106

 Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

### **TYPICAL APPLICATIONS**

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

### **MECHANICAL DATA**

Case: DO-201AD

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

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

<b>MAXIMUM RATINGS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	SB3H90	SB3H100	UNIT	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	V <sub>RRM</sub> 90 100			
Maximum working reverse voltage	V <sub>RWM</sub>	V <sub>RWM</sub> 90 100			
Maximum DC blocking voltage	V <sub>DC</sub>	90	V		
Maximum average forward rectified current at T <sub>L</sub> = 90 °C	I <sub>F(AV)</sub>	3.0		Α	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	100		А	
Peak repetitive reverse surge current at t <sub>p</sub> = 2.0 μs, 1 kHz	I <sub>RRM</sub>	1.0		А	
Critical rate of rise of reverse voltage	dV/dt	10 000		V/µs	
Storage temperature range	T <sub>STG</sub>	- 55 to + 175		°C	
Maximum operating junction temperature	TJ	175		°C	



# SB3H90, SB3H100

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SB3H90	SB3H100	UNIT
Maximum instantaneous forward voltage	I <sub>F</sub> = 3.0 A	T <sub>J</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	0.80		V
		T <sub>J</sub> = 125 °C		0.65		
Maximum reverse current		T <sub>J</sub> = 25 °C	I <sub>R</sub> <sup>(2)</sup>	20		μΑ
at rated V <sub>R</sub>		T <sub>J</sub> = 125 °C	'R (=)	4	.0	mA

#### 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	SYMBOL SB3H90 SB3H100		UNIT	
Maximum thermal resistance	R <sub>0JA</sub> (1)	50		°C/W	
	R <sub>0JL</sub> (1)	20			

#### 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			
SB3H100-E3/54	1.09	54	1400	13" diameter paper tape and reel		
SB3H100-E3/73	1.09	73	1000	Ammo pack packaging		

### **RATINGS AND CHARACTERISTICS CURVES**

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

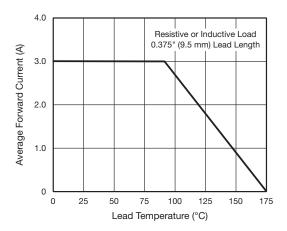


Fig. 1 - Forward Current Derating Curve

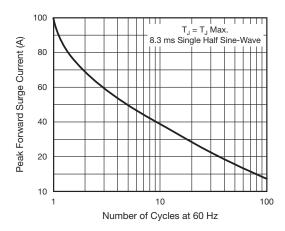


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current



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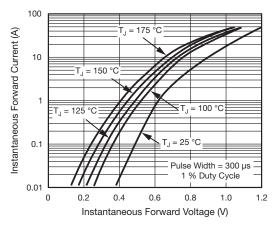


Fig. 3 - Typical Instantaneous Forward Characteristics

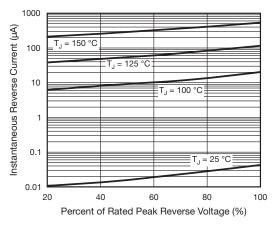


Fig. 4 - Typical Reverse Characteristics

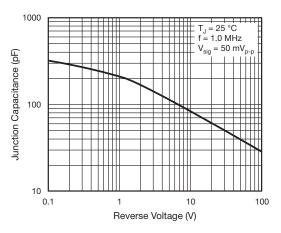


Fig. 5 - Typical Junction Capacitance

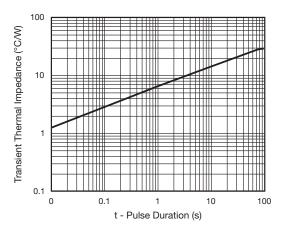
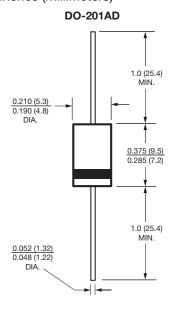


Fig. 6 - Typical Transient Thermal Impedance

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







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