

SB220S thru SB260S

Vishay General Semiconductor

# **Schottky Barrier Rectifier**



PRIMARY CHARACTERISTICS						
I <sub>F(AV)</sub>	2.0 A					
V <sub>RRM</sub>	20 V to 60 V					
I <sub>FSM</sub>	50 A					
V <sub>F</sub>	0.55 V, 0.70 V					
T <sub>J</sub> max.	125 °C, 150 °C					

## **FEATURES**

- · Guardring for overvoltage protection
- Very small conduction losses
- · Extremely fast switching
- · Low forward voltage drop
- 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

### **TYPICAL APPLICATIONS**

For use in low voltage high frequency inverters, freewheeling, dc-to-dc converters, and polarity protection applications.

### **MECHANICAL DATA**

Case: DO-204AL (DO-41)

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

Polarity: Color band denotes the cathode end

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER		SB220S	SB230S	SB240S	SB250S	SB260S	UNIT	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	20	30	40	50	60	V	
Maximum average forward rectified current at 0.375" (9.5 mm) lead length (Fig. 1)	I <sub>F(AV)</sub>	2.0				А		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	50				А		
Voltage rate of change (rated V <sub>R</sub> )	dV/dt	10 000			V/µs			
Operating junction temperature range	Т <sub>Ј</sub>	T <sub>J</sub> - 65 to + 125 - 65 to + 150		+ 150	°C			
Storage temperature range	T <sub>STG</sub>	- 65 to + 150				°C		

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25$ °C unless otherwise noted)										
PARAMETER	TEST CONDITIONS		SYMBOL	SB220S	SB230S	SB240S	SB250S	SB260S	UNIT	
Maximum instantaneous forward voltage (1)	2.0 A		V <sub>F</sub>	0.55			0.70		V	
Maximum reverse current at rated $V_{B}^{(2)}$		T <sub>J</sub> = 25 °C		0.50						
Maximum reverse current at fated VR		T <sub>J</sub> = 125 °C	IR		25		1	5	mA	

#### Notes:

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

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

COMPLIANT



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**New Product** 

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<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25 \degree C$ unless otherwise noted)							
PARAMETER	SYMBOL	SB220S	SB230S	SB240S	SB250S	SB260S	UNIT
Typical thermal resistance <sup>(1)</sup>	R <sub>θJA</sub> R <sub>θJL</sub>	75 25			°C/W		

Note:

(1) Thermal resistance junction to lead P.C.B. mounted 0.375" (9.5 mm) lead length

ORDERING INFORMATION (Example)									
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE					
SB240S-E3/54	0.346	54	5500	13" diameter paper tape and reel					
SB240S-E3/73	0.346	73	3000	Ammo pack packaging					

#### **RATINGS AND CHARACTERISTICS CURVES**

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

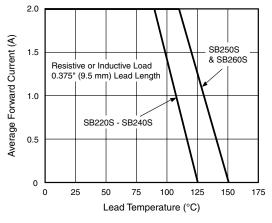


Figure 1. Forward Current Derating Curve

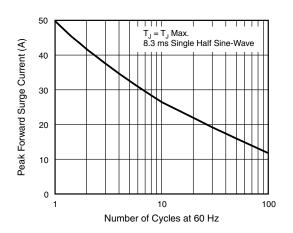


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

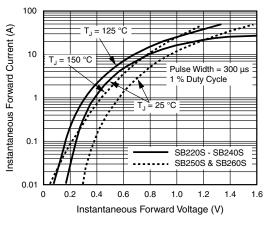


Figure 3. Typical Instantaneous Forward Characteristics

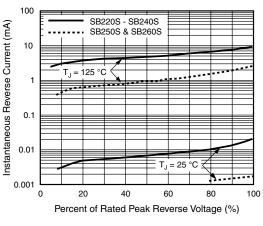


Figure 4. Typical Reverse Characteristics



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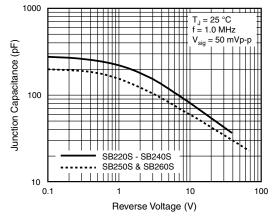
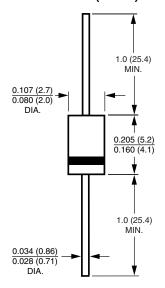


Figure 5. Typical Junction Capacitance

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



### DO-204AL (DO-41)



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All product specifications and data are subject to change without notice.

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