

Vishay General Semiconductor

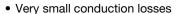
## **Schottky Barrier Plastic Rectifier**



PRIMARY CHARACTERISTICS						
I <sub>F(AV)</sub>	2.0 A					
$V_{RRM}$	20 V, 30 V, 40 V, 50 V, 60 V					
I <sub>FSM</sub>	60 A					
$V_{F}$	0.50 V, 0.68 V					
T <sub>J</sub> max.	125 °C, 150 °C					
Package	DO-15 (DO-204AC)					
Circuit configuration	Single					

#### **FEATURES**







Low forward voltage drop

• High forward surge capability

• High frequency operation

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

 Material categorization: for definitions of compliance please see <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>

#### TYPICAL APPLICATIONS

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

#### **MECHANICAL DATA**

Case: DO-15 (DO-204AC)

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

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	SB220	SB230	SB240	SB250	SB260	UNIT	
Maximum repetitive peak reverse voltage	$V_{RRM}$	20	30	40	50	60	V	
Maximum RMS voltage	V <sub>RMS</sub>	14	21	28	35	42	V	
Maximum DC blocking voltage	$V_{DC}$	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>	60				А		
Maximum full load reverse current, full cycle average at T <sub>A</sub> = 75 °C	I <sub>R(AV)</sub>	30					mA	
Voltage rate of change (rated V <sub>R</sub> )	dV/dt	10 000					V/µs	
Operating junction temperature range	TJ	-65 to +125 -65 to +150					°C	
Storage temperature range	T <sub>STG</sub>	-65 to +150				°C		



## SB220, SB230, SB240, SB250, SB260

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS		SYMBOL	SB220	SB230	SB240	SB250	SB260	UNIT
Maximum instantaneous forward voltage	2.0 A		V <sub>F</sub> <sup>(1)</sup>	0.50		0.68		V	
Maximum instantaneous reverse current		T <sub>A</sub> = 25 °C	I <sub>R</sub> <sup>(1)</sup>	0.50			mA		
at rated DC blocking voltage		T <sub>A</sub> = 100 °C	IR ' '	15 8.0		.0	IIIA		
Typical junction capacitance			CJ	170			pF		

#### Note

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

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL SB220 SB230 SB240 SB250 SB260 UN						UNIT
Typical thermal registance	R <sub>0JA</sub> (1)			45	°C/W		
Typical thermal resistance	R <sub>0JL</sub> (1)	14					C/VV

#### Note

(1) Thermal resistance junction to lead PCB mounted 0.375" (9.5 mm) lead length

ORDERING INFORMATION (Example)								
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE				
SB240-E3/54	0.398	54	4000	13" diameter paper tape and reel				
SB240-E3/73	0.398	73	2000	Ammo pack packaging				

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### RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)

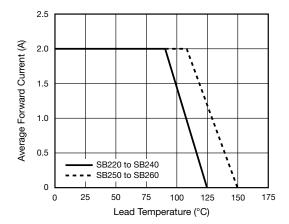


Fig. 1 - Forward Current Derating Curve

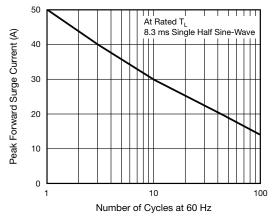


Fig. 2 - Maximum Non-Repetitive Surge Current

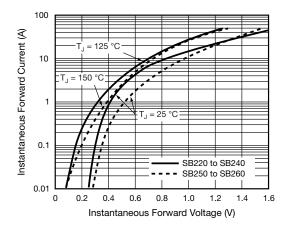


Fig. 3 - Typical Instantaneous Forward Characteristics

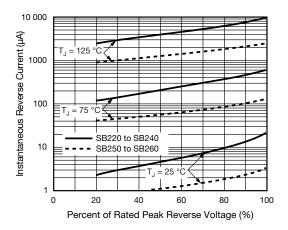


Fig. 4 - Typical Reverse Characteristics

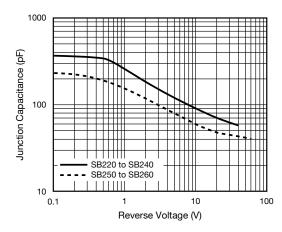


Fig. 5 - Typical Junction Capacitance

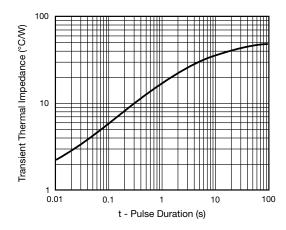


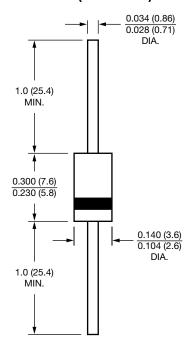
Fig. 6 - Typical Transient Thermal Impedance



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

#### DO-15 (DO-204AC)





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