

Vishay General Semiconductor

Miniature Schottky Barrier Rectifier



PRIMARY CHARACTERISTICS						
I _{F(AV)}	0.6 A					
V_{RRM}	20 V to 60 V					
I _{FSM}	20 A					
V_{F}	0.55 V, 0.70 V					
T _J max.	125 °C, 150 °C					

FEATURES





· Extremely fast switching

· Low forward voltage drop

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

MECHANICAL DATA

Case: MPG06

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

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	SB020	SB030	SB040	SB050	SB060	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	V
Maximum RMS voltage	V _{RMS}	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 _{F(AV)}	0.6				А	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	20				А	
Operating junction temperature range	TJ	- 65 to + 125 - 65 to + 150			°C		
Storage temperature range	T _{STG}	- 65 to + 150			°C		

ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS	SYMBOL	SB020	SB030	SB040	SB050	SB060	UNIT	
Maximum instantaneous forward voltage	0.6 A	V _F ⁽¹⁾	0.55		0.70		V		
Maximum instantaneous reverse current at rated DC	T _A = 25 °C	= 25 °C 0.5				mA			
blocking voltage	T _A = 100 °C	'R''		10		5	.0	IIIA	

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

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THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	SB020	SB030	SB040	SB050	SB060	UNIT
Turning I the ground respictors of	R _{0JA} (1)	80					°C/W
Typical thermal resistance	R ₀ JL (1)	20					C/VV

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				
SB040-E3/54	0.203	54	5500	13" diameter paper tape and reel				
SB040-E3/73	0.203	73	3000	Ammo pack packaging				

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RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

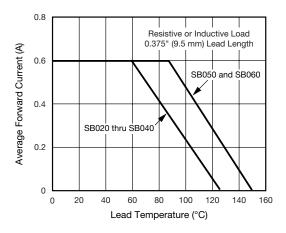
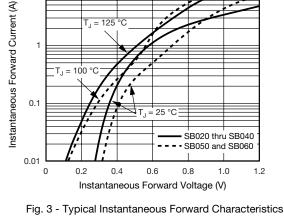


Fig. 1 - Forward Current Derating Curve



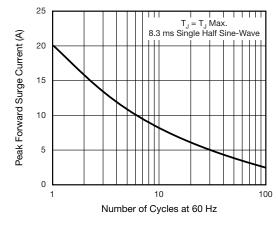


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

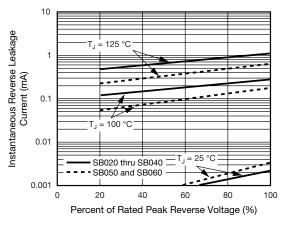


Fig. 4 - Typical Reverse Leakage Characteristics



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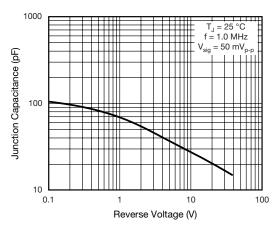


Fig. 5 - Typical Junction Capacitance

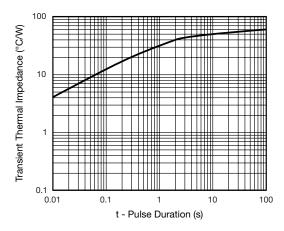
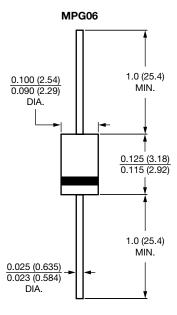


Fig. 6 - Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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