

Vishay General Semiconductor

Schottky Barrier Rectifier



PRIMARY CHARACTERISTICS						
I _{F(AV)}	3.0 A					
V _{RRM}	20 V to 60 V					
I _{FSM}	100 A					
V _F	0.50 V, 0.70 V					
T _J max.	125 °C, 150 °C					

FEATURES





Extremely fast switching

(e3)

Low forward voltage drop

ROHS

• High frequency operation

20 kV ESD capability

• 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-204AC (DO-15)

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 _A = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	SB320S	SB330S	SB340S	SB350S	SB360S	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	٧
Maximum average forward rectified current at 0.375" (9.5 mm) lead length (Fig. 1)	I _{F(AV)}	3.0				Α	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	100				Α	
Electrostatic discharge capacitor voltage Human body model air discharge: C = 100 pF, R = 1.5 k Ω	V _C	20					kV
Voltage rate of change (rated V _R)	dV/dt	10 000				V/µs	
Operating junction temperature range	T _J	- 65 to + 125 - 65 to + 150			°C		
Storage temperature range	T _{STG}	- 65 to + 150				°C	

SB320S thru SB360S

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER	TEST	CONDITIONS	SYMBOL	SB320S	SB330S	SB340S	SB350S	SB360S	UNIT
Maximum instantaneous forward voltage (1)	3.0 A		V _F		0.50		0.	70	٧
Maximum reverse current at		T _ 05 °C				0.50			
rated V _R ⁽²⁾		$T_A = 25 ^{\circ}\text{C}$ $T_A = 100 ^{\circ}\text{C}$	I _R		20		1	0	mA

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 SB320S SB330S SB340S SB350S SB360S U					UNIT
Typical thermal resistance ⁽¹⁾	$R_{ hetaJA} \ R_{ hetaJL}$	40 12		°C/W	

Note:

(1) Thermal resistance from junction to lead vertical P.C.B. mounting, 0.500" (12.7 mm) lead length with 2.5 x 2.5" (63.5 x 63.5 mm) copper pad

ORDERING INFORMATION (Example)								
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE				
SB360S-E3/54	0.40	54	4000	13" diameter paper tape and reel				
SB360S-E3/73	0.40	73	2000	Ammo pack packaging				

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

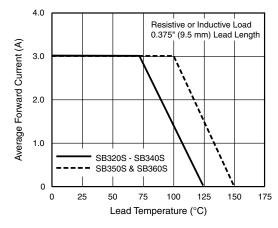


Figure 1. Forward Current Derating Curve

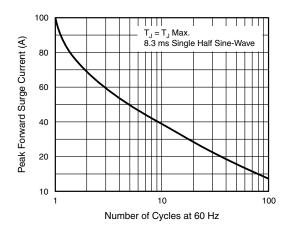


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current



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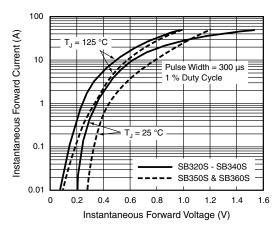


Figure 3. Typical Instantaneous Forward Characteristics

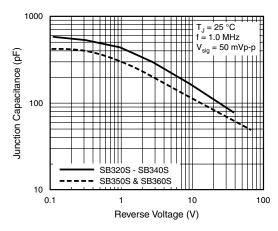


Figure 5. Typical Junction Capacitance

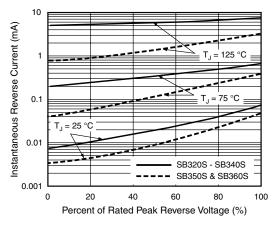


Figure 4. Typical Reverse Characteristics

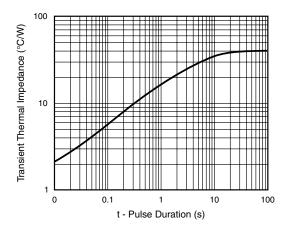
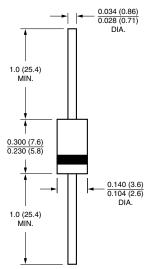


Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)





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