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SB320S thru SB360S

Vishay General Semiconductor

Schottky Barrier Rectifier



DO-204AC (DO-15)

FEATURES

- Very small conduction losses
- Extremely fast switching
- Low forward voltage drop
- High frequency operation
- 20 kV ESD capability
- 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



RoHS
COMPLIANT

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)

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

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
$T_J \text{ max.}$	125 °C, 150 °C

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ 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	V
Maximum average forward rectified current at 0.375" (9.5 mm) lead length (fig. 1)	$I_{F(AV)}$	3.0					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	100					A
Electrostatic discharge capacitor voltage human body model air discharge: C = 100 pF, R = 1.5 kΩ	V_C	20					kV
Voltage rate of change (rated V_F)	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

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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	3.0 A	V _F ⁽¹⁾	0.50			0.70		V
Maximum reverse current at rated V _R	T _A = 25 °C	I _R ⁽²⁾	0.50				10	mA
	T _A = 100 °C		20					

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	UNIT	
Typical thermal resistance	R _{θJA} ⁽¹⁾	40				12	°C/W	
	R _{θJL} ⁽¹⁾							

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 mm 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)

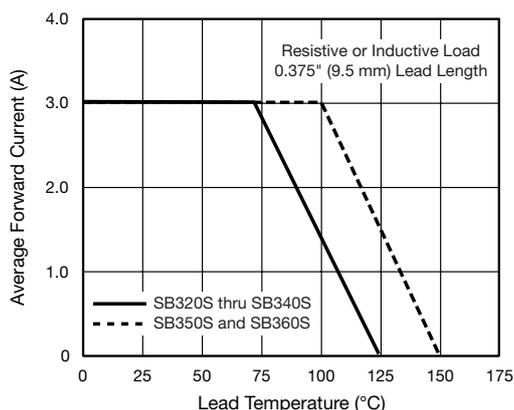


Fig. 1 - Forward Current Derating Curve

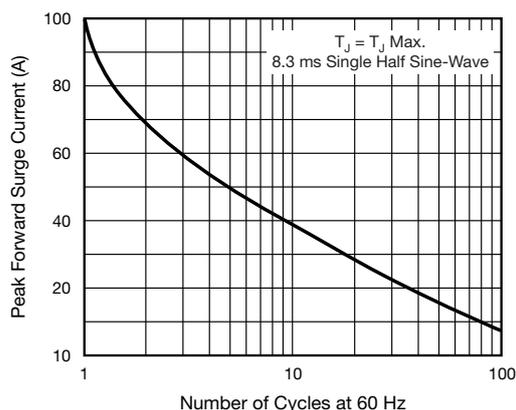


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current



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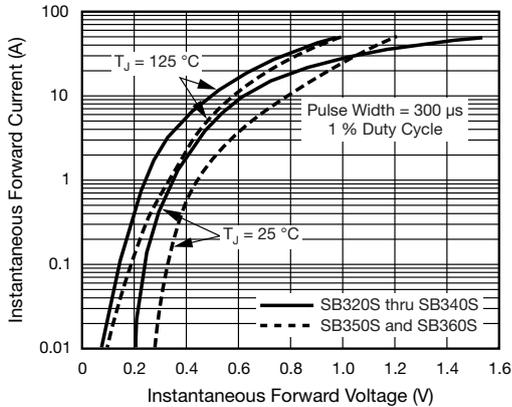


Fig. 3 - Typical Instantaneous Forward Characteristics

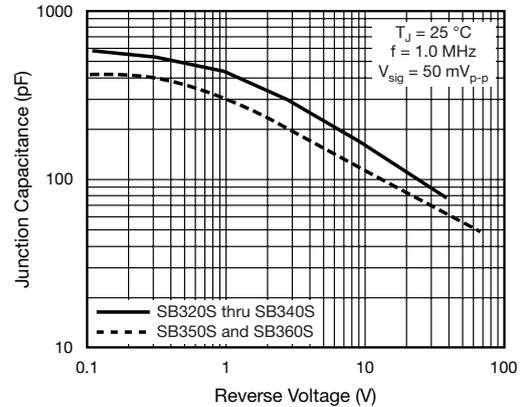


Fig. 5 - Typical Junction Capacitance

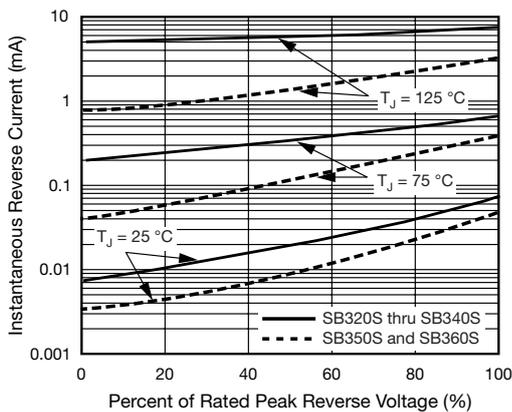


Fig. 4 - Typical Reverse Characteristics

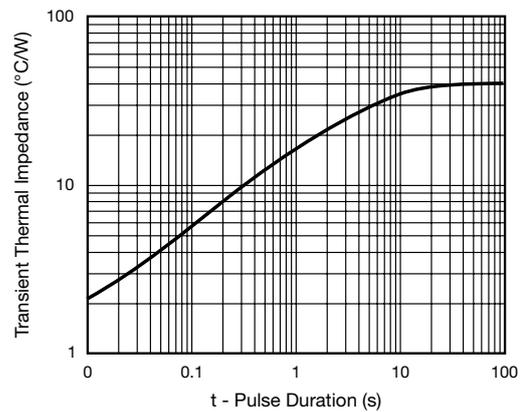
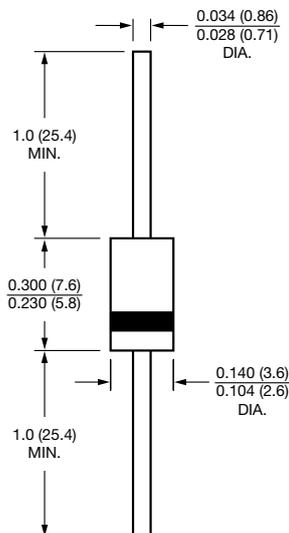


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)





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