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Vishay General Semiconductor

High Voltage Schottky Plastic Rectifier

High Barrier Technology for Improved High Temperature Performance



PRIMARY CHARACTERISTICS				
I _{F(AV)}	2.0 A			
V_{RRM}	90 V, 100 V			
I _{FSM}	75 A			
V_{F}	0.65 V			
I _R	10 μΑ			
T _J max.	175 °C			
Package	DO-15 (DO-204AC)			
Circuit configuration	Single			

FEATURES

- Guardring for overvoltage protection
- · Low power losses and high efficiency
- · Low forward voltage drop
- Low leakage current
- 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 www.vishay.com/doc?99912

TYPICAL APPLICATIONS

For use in middle 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

Note

• SB2H100 for commercial grade only

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	SB2H90	SB2H100	UNIT	
Maximum repetitive peak reverse voltage	V _{RRM}	90	100	V	
Working peak reverse voltage	V_{RWM}	90	100	V	
Maximum DC blocking voltage	V _{DC}	90	100	V	
Maximum average forward rectified current at T _A = 25 °C	I _{F(AV)}	2.0		А	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	75		А	
Peak repetitive reverse surge current at t_p = 2.0 μ s, 1 kHz	I _{RRM}	1.0		А	
Critical rate of rise of reverse voltage	dV/dt	10 000		V/µs	
Storage temperature range	T _{STG}	-55 to +175		°C	
Maximum operating junction temperature	TJ	175		°C	



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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SB2H90	SB2H100	UNIT
Maximum instantaneous forward voltage	I _F = 2.0 A	T _J = 25 °C	V _F ⁽¹⁾	0.79		V
		T _J = 125 °C		0.65		
Maximum reverse current at rated V _R		T _J = 25 °C	I _R ⁽²⁾	10		μA
		T _J = 125 °C		4	.0	mA

Notes

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

(2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	SB2H90	SB2H100	UNIT	
Typical thermal resistance	R _{θJA} ⁽¹⁾	45		°C/W	
Typical thermal resistance	R ₀ JL (1)	14			

Note

 $^{(1)}$ PCB mounted with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

ORDERING INFORMATION (Example)						
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
SB2H90-E3/54	0.398	54	4000	13" diameter paper tape and reel		
SB2H90-E3/73	0.398	73	2000	Ammo pack packaging		

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RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

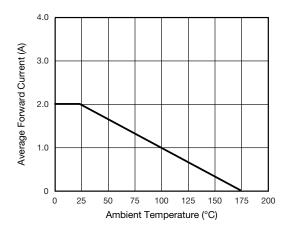


Fig. 1 - Forward Current Derating Curve

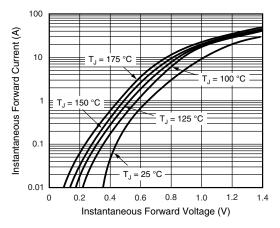


Fig. 2 - Typical Instantaneous Forward Characteristics

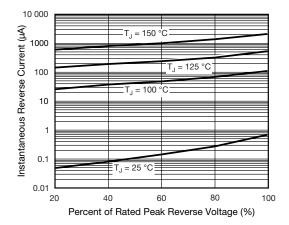


Fig. 3 - Typical Reverse Characteristics

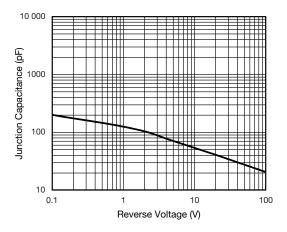


Fig. 4 - Typical Junction Capacitance

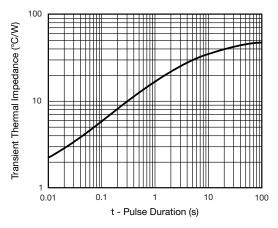
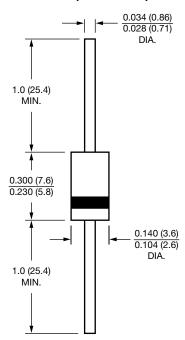


Fig. 5 - Typical Transient Thermal Impedance

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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-15 (DO-204AC)





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