

High Voltage Schottky Plastic Rectifier

High Barrier Technology for Improved High Temperature Performance



DO-15 (DO-204AC)

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



RoHS
COMPLIANT

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

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 µA
T _J max.	175 °C
Package	DO-15 (DO-204AC)
Circuit configuration	Single

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		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	75		A
Peak repetitive reverse surge current at t _p = 2.0 µs, 1 kHz	I _{RRM}	1.0		A
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	T _J	175		°C

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	SB2H90	SB2H100	UNIT
Maximum instantaneous forward voltage	$I_F = 2.0 \text{ A}$	$T_J = 25^\circ\text{C}$	V_F ⁽¹⁾	0.79	V
		$T_J = 125^\circ\text{C}$		0.65	
Maximum reverse current at rated V_R		$T_J = 25^\circ\text{C}$	I_R ⁽²⁾	10	μA
		$T_J = 125^\circ\text{C}$		4.0	

Notes

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

(2) Pulse test: Pulse width $\leq 40 \text{ ms}$

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	SB2H90	SB2H100	UNIT
Typical thermal resistance	$R_{\theta JA}$ ⁽¹⁾	45	14	$^\circ\text{C}/\text{W}$
	$R_{\theta JL}$ ⁽¹⁾			

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

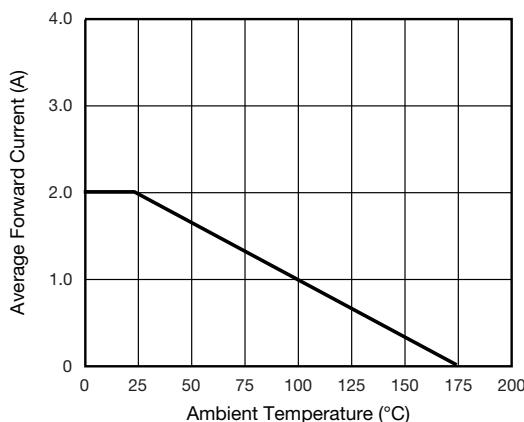
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

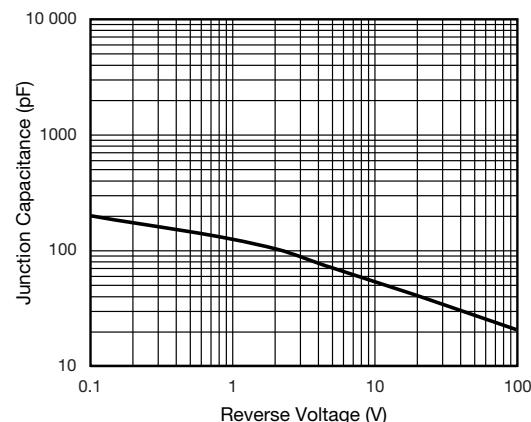


Fig. 4 - Typical Junction Capacitance

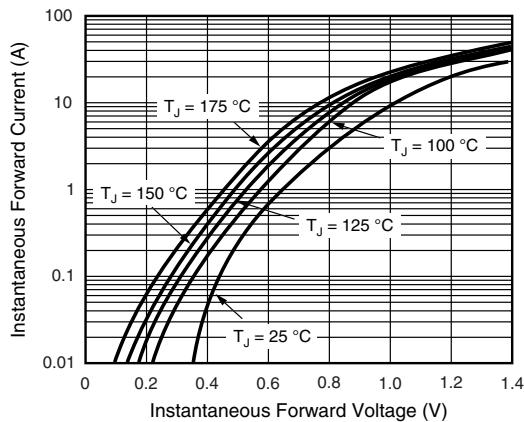


Fig. 2 - Typical Instantaneous Forward Characteristics

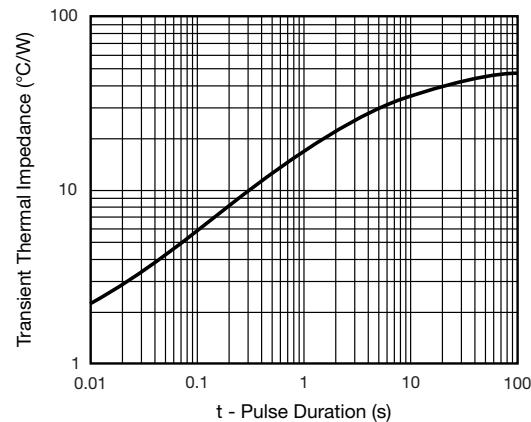


Fig. 5 - Typical Transient Thermal Impedance

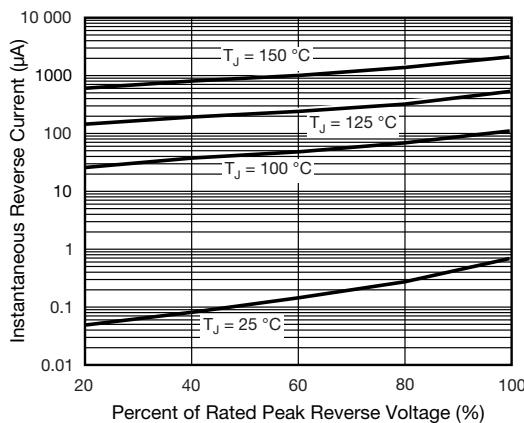
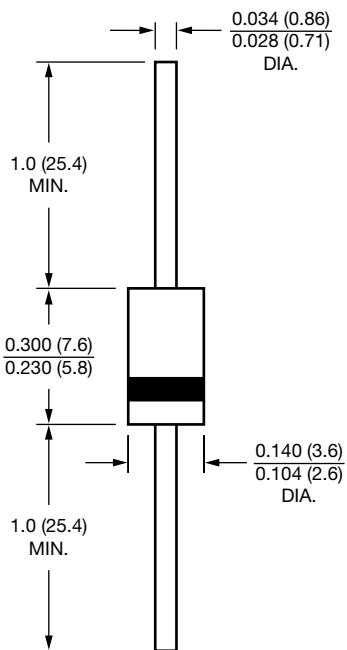


Fig. 3 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)**DO-15 (DO-204AC)**

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