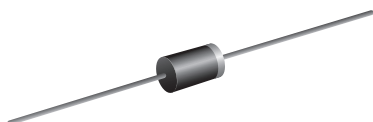




## High-Voltage Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



DO-204AC (DO-15)

### 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
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC



**RoHS**  
COMPLIANT

### 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 $\mu$ A
$T_J$ max.	175 °C

### TYPICAL APPLICATIONS

For use in middle 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

Base P/NHE3 - RoHS compliant, AEC-Q101 qualified

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 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		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 $t_p = 2.0$ $\mu$ s, 1 kHz	$I_{RRM}$	1.0		A
Critical rate of rise of reverse voltage	$dV/dt$	10 000		V/ $\mu$ s
Storage temperature range	$T_{STG}$	- 55 to + 175		°C
Maximum operating junction temperature	$T_J$	175		°C

## SB2H90, SB2H100

Vishay General Semiconductor

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

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

**Notes**

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

(2) Pulse test: Pulse width  $\leq 40\text{ ms}$ **THERMAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

PARAMETER	SYMBOL	SB2H90	SB2H100	UNIT
Typical thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	45		°C/W
	R <sub>θJL</sub> <sup>(1)</sup>	14		

**Note**

(1) P.C.B. 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
SB2H100-E3/54	0.398	54	4000	13" diameter paper tape and reel
SB2H100-E3/73	0.398	73	2000	Ammo pack packaging
SB2H100HE3/54 <sup>(1)</sup>	0.398	54	4000	13" diameter paper tape and reel
SB2H100HE3/73 <sup>(1)</sup>	0.398	73	2000	Ammo pack packaging

**Note**

(1) AEC-Q101 qualified

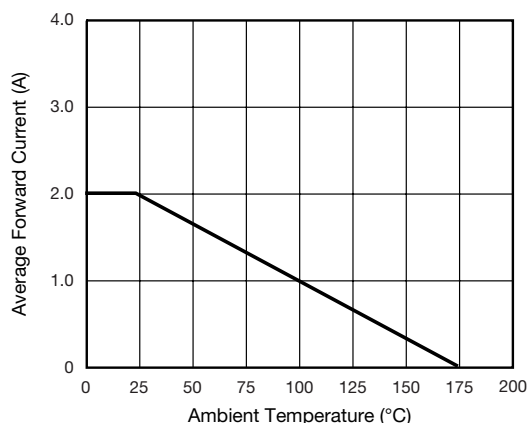
**RATINGS AND CHARACTERISTICS CURVES**( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

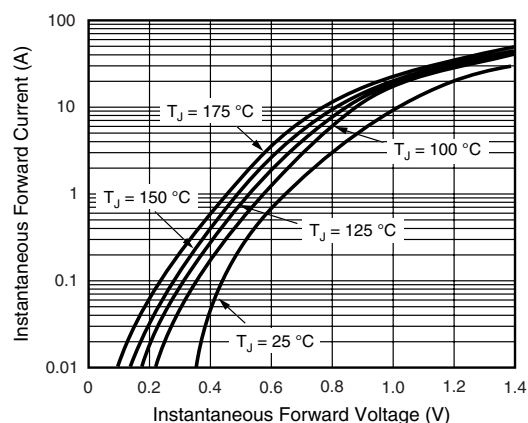


Fig. 2 - Typical Instantaneous Forward Characteristics

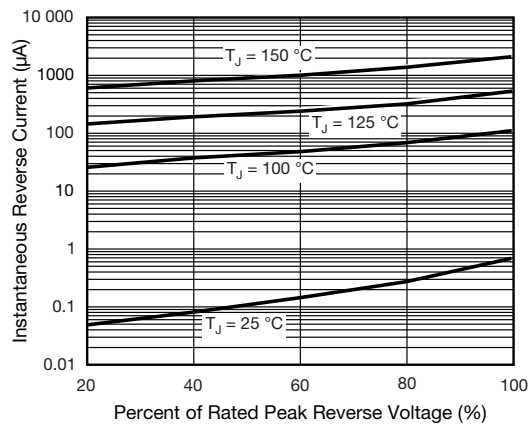


Fig. 3 - Typical Reverse Characteristics

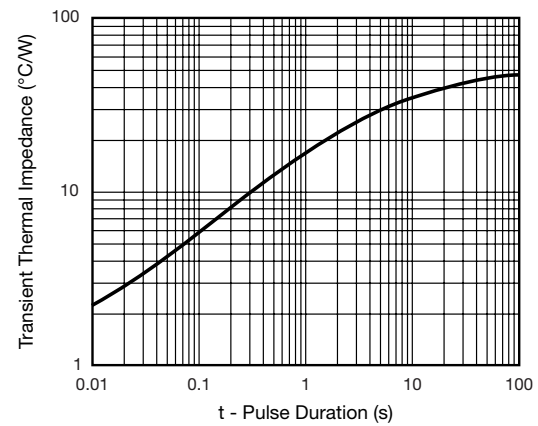


Fig. 5 - Typical Transient Thermal Impedance

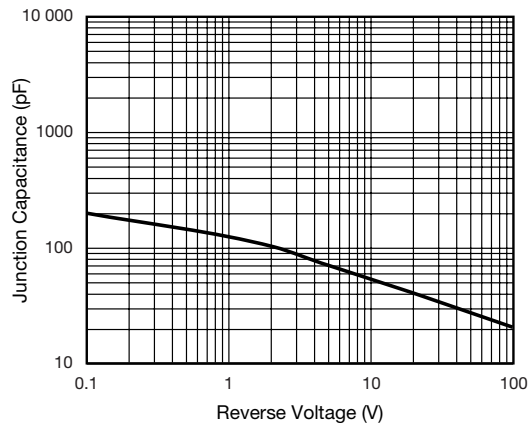
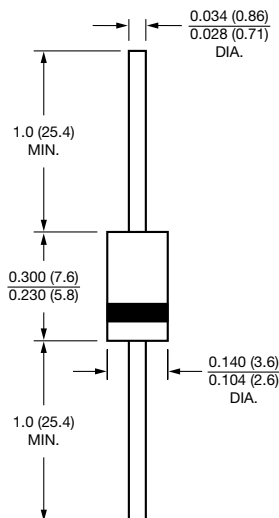


Fig. 4 - Typical Junction Capacitance

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



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