New Product

SB1H90 & SB1H100

Vishay General Semiconductor

High-Voltage Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance

FEATURES

- High barrier technology for improved high T_{.1}
- · Guardring for overvoltage protection
- Low power losses and high efficiency
- Low forward voltage drop
- Very low leakage current
- High forward surge capability
- High frequency operation
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

TYPICAL APPLICATIONS

For use in middle voltage high frequency inverters, freewheeling, dc-to-dc converters and polarity protection applications.

MECHANICAL DATA

Case: DO-204AL (DO-41)

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, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

Polarity: Color band denotes the cathode end

MAXIMUM RATINGS ($T_A = 25 \text{ °C}$ unless otherwise noted)					
PARAMETER	SYMBOL	SB1H90	SB1H100	UNIT	
Maximum repetitive peak reverse voltage	V _{RRM}	90	100	V	
Maximum RMS voltage	V _{RMS}	63 70		V	
Maximum DC blocking voltage	V _{DC}	90	V		
Maximum average forward rectified current	I _{F(AV)}	1.0		А	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	50		A	
Voltage rate of change (rated V _R)	dV/dt	10 000		V/µs	
Peak repetitive reverse surge current at $t_p = 2.0 \ \mu s$, 1 kHz	I _{RRM}	1.0		А	
Maximum operating junction temperature	TJ	175		°C	
Storage temperature range	T _{STG}	- 55 to + 175			

175 °C T_{.1} max.

DO-204AL (DO-41)

PRIMARY CHARACTERISTICS				
I _{F(AV)}	1.0 A			
V _{RRM}	90 V, 100 V			
I _{FSM}	50 A			
V _F	0.62 V			
l _B	1.0 μA			



RoHS

COMPLIANT

SB1H90 & SB1H100



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ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SB1H90	SB1H100	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	$I_F = 1.0 \text{ A}$ $I_F = 1.0 \text{ A}$ $I_F = 2.0 \text{ A}$ $I_F = 2.0 \text{ A}$	$T_J = 25 \degree C$ $T_J = 125 \degree C$ $T_J = 25 \degree C$ $T_J = 125 \degree C$	V _F	0.77 0.62 0.86 0.70		V
Maximum reverse current at rated $\mathrm{V_{R}}\ ^{(2)}$		T _J = 25 °C T _J = 125 °C	I _R	1.0 0.5		μA mA

Notes:

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

(2) Pulse test: Pulse width \leq 40 ms

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER	SYMBOL	SB1H90	SB1H100	UNIT		
Maximum thermal resistance ⁽¹⁾	$R_{ extsf{ heta}JA}\ R_{ extsf{ heta}JL}$	57 15		°C/W		

Note:

(1) P.C.B. mounted with 0.2 x 0.2" (5.0 x 5.0 mm) copper pad areas

ORDERING INFORMATION (Example)						
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
SB1H100-E3/54	0.34	54	5500	13" diameter paper tape and reel		
SB1H100-E3/73	0.34	73	3000	Ammo pack packaging		
SB1H100HE3/54 (1)	0.34	54	5500	13" diameter paper tape and reel		
SB1H100HE3/73 ⁽¹⁾	0.34	73	3000	Ammo pack packaging		

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

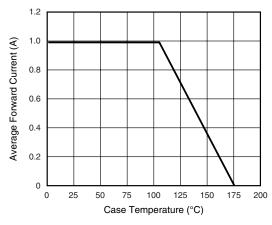


Figure 1. Forward Current Derating Curve

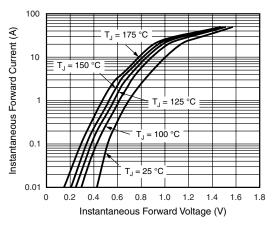


Figure 2. Typical Instantaneous Forward Characteristics



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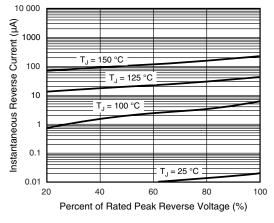


Figure 3. Typical Reverse Characteristics

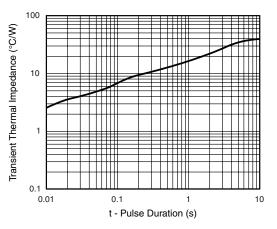


Figure 5. Typical Transient Thermal Impedance

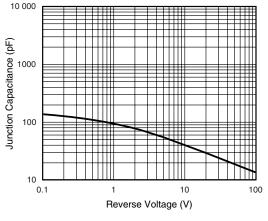
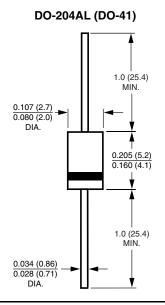


Figure 4. Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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