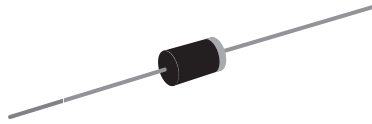


## High-Voltage Schottky Rectifier

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
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



**RoHS**  
COMPLIANT

### 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)

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

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

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



ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SB2H90	SB2H100	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	I <sub>F</sub> = 2.0 A	T <sub>J</sub> = 25 °C	V <sub>F</sub>	0.79		V
	I <sub>F</sub> = 2.0 A	T <sub>J</sub> = 125 °C		0.65		
Maximum reverse current at rated V <sub>R</sub> <sup>(2)</sup>			I <sub>R</sub>	10	4.0	μA

Notes:

- (1) Pulse test: 300 ms pulse width, 1 % duty cycle
- (2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	SB2H90	SB2H100	UNIT
Typical thermal resistance <sup>(1)</sup>	R <sub>θJA</sub>	45		°C/W
	R <sub>θJL</sub>	14		

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
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) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T<sub>A</sub> = 25 °C unless otherwise noted)

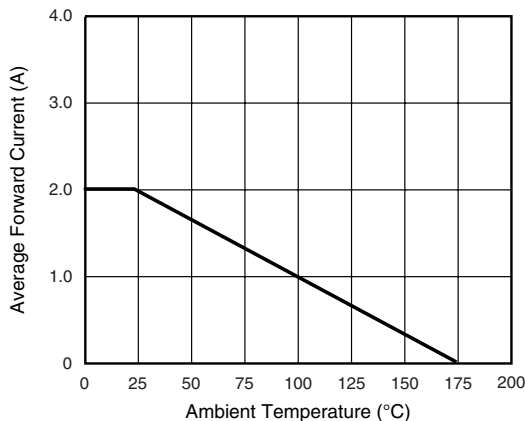


Figure 1. Forward Current Derating Curve

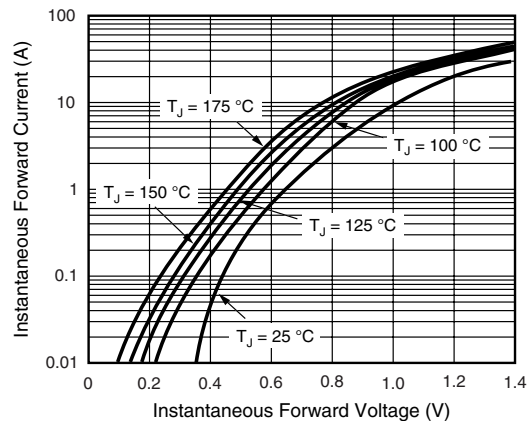


Figure 2. Typical Instantaneous Forward Characteristics

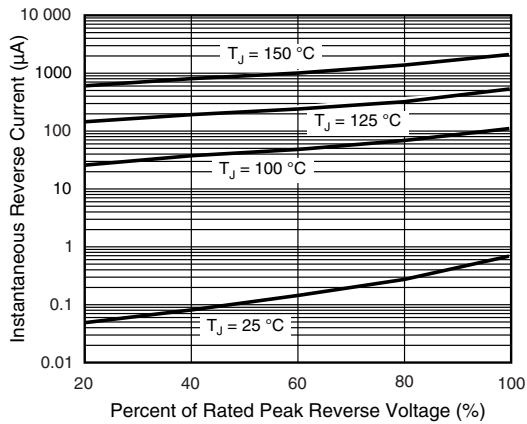


Figure 3. Typical Reverse Characteristics

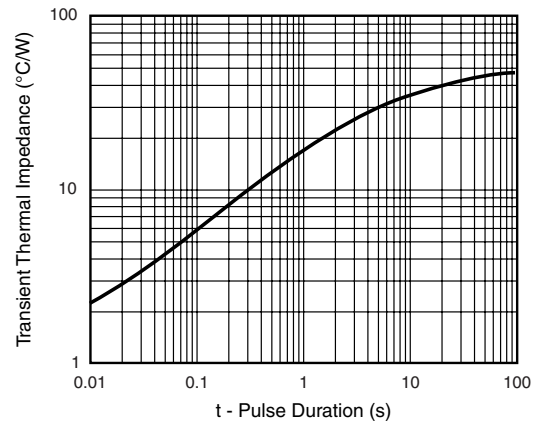


Figure 5. Typical Transient Thermal Impedance

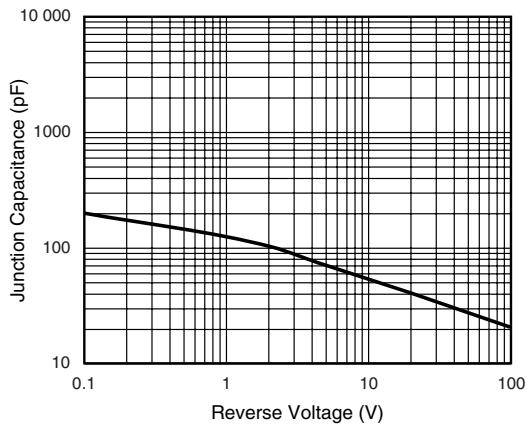
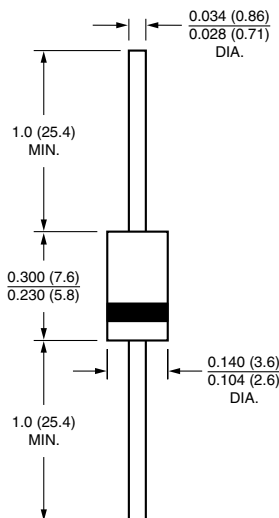


Figure 4. Typical Junction Capacitance

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**DO-204AC (DO-15)**





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