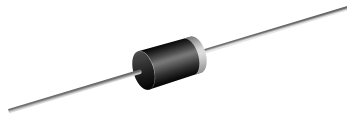


High-Voltage Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



DO-204AL (DO-41)

FEATURES

- High barrier technology for improved high T_J
- 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



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-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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
V_{RRM}	90 V, 100 V
I_{FSM}	50 A
V_F	0.62 V
I_R	1.0 μ A
$T_J \text{ max.}$	175 °C

MAXIMUM RATINGS ($T_A = 25$ °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	100	V
Maximum average forward rectified current	$I_{F(AV)}$	1.0		A
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/ μ s
Peak repetitive reverse surge current at $t_p = 2.0$ μ s, 1 kHz	I_{RRM}	1.0		A
Maximum operating junction temperature	T_J	175		°C
Storage temperature range	T_{STG}	- 55 to + 175		°C



ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SB1H90	SB1H100	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	I _F = 1.0 A	T _J = 25 °C	V _F	0.77		V
	I _F = 1.0 A	T _J = 125 °C		0.62		
	I _F = 2.0 A	T _J = 25 °C		0.86		
	I _F = 2.0 A	T _J = 125 °C		0.70		
Maximum reverse current at rated 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 ≤ 40 ms

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	SB1H90	SB1H100	UNIT
Maximum thermal resistance ⁽¹⁾	R _{θJA}	57		°C/W
	R _{θJL}	15		

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)

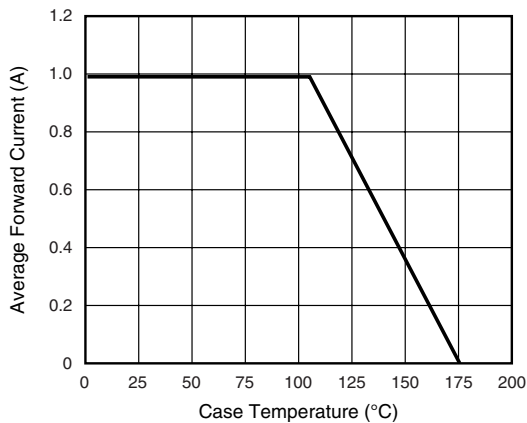


Figure 1. Forward Current Derating Curve

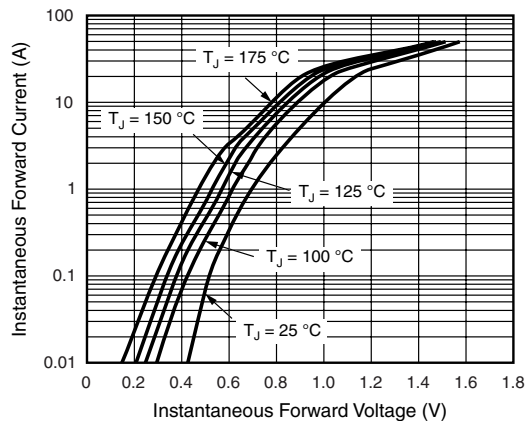


Figure 2. Typical Instantaneous Forward Characteristics

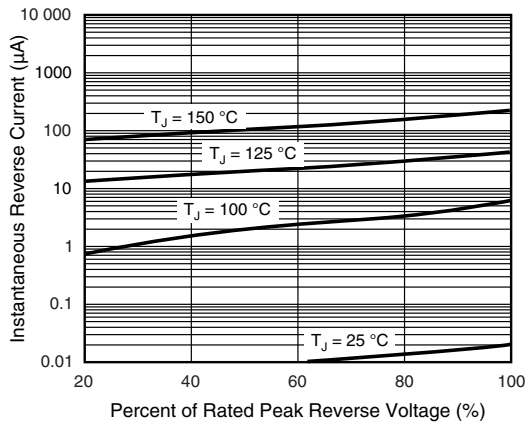


Figure 3. Typical Reverse Characteristics

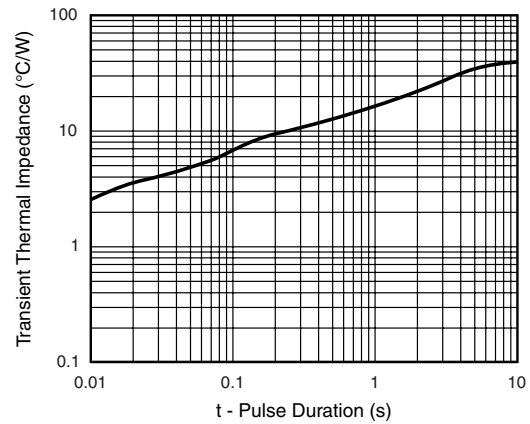


Figure 5. Typical Transient Thermal Impedance

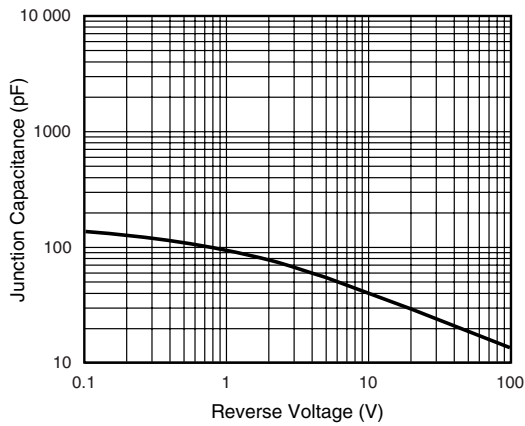
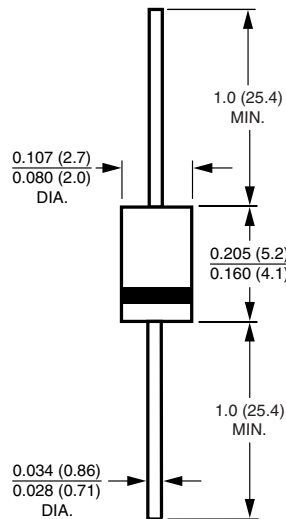


Figure 4. Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)





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