BAT46W

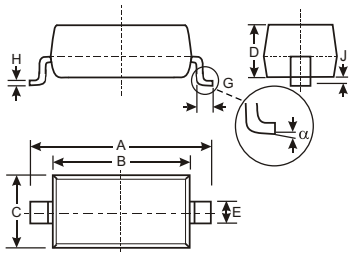
SURFACE MOUNT SCHOTTKY BARRIER DIODE

Features

- High Breakdown Voltage
- Low Turn-on Voltage
- Guard Ring Construction for Transient Protection
- **Lead Free/RoHS Compliant Version (Note 4)**

Mechanical Data

- Case: SOD-123
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe)
- Polarity: Cathode Band
- Marking: Date Code & Type Code, See Page 3
- Type Code: L6
- Ordering Information: See Page 3
- Weight: 0.01 grams (approximate)



SOD-123		
Dim	**Min**	**Max**
A	3.55	3.85
B	2.55	2.85
C	1.40	1.70
D	—	1.35
E	0.45	0.65
	0.55 Typical	
G	0.25	—
H	0.11 Typical	
J	—	0.10
	0	8
All Dimensions in mm		

Maximum Ratings @ T_A = 25 C unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	100	V
Forward Continuous Current (See figure 4)	I_F	150	mA
Repetitive Peak Forward Current (Note 1) @ t_p < 1.0s, Duty Cycle < 50%	I_{FRM}	350	mA
Forward Surge Forward Current (Note 1) @ t_p = 10ms	I_{FSM}	750	mA
Power Dissipation	P_d	200	mW

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Ambient Air (Note 1) Thermal Resistance, Junction to Ambient Air (Note 2)	R_{JA}	420 370	C/W
Operating Temperature Range	T_j	-55 to +125	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Electrical Characteristics @ T_A = 25 C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 3)	$V_{(BR)R}$	100	—	—	V	I_R = 100 A
Forward Voltage	V_F	—	—	0.25 0.45 1.00	V	I_F = 0.1mA I_F = 10mA I_F = 250mA
Peak Reverse Current (Note 3)	I_R	—	—	0.3 5.0 0.5 7.5 1.0 15 2.0 20	A	V_R = 1.5V V_R = 1.5V, T_j = 60 C V_R = 10V V_R = 10V, T_j = 60 C V_R = 50V V_R = 50V, T_j = 60 C V_R = 75V V_R = 75V, T_j = 60 C
Total Capacitance	C_T	—	20 12	—	pF	V_R = 0V, f = 1.0MHz V_R = 1.0V, f = 1.0MHz

Note: 1. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
2. Part mounted on Polymide board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
3. Short duration test pulse used to minimize self-heating effect.
4. No purposefully added lead.

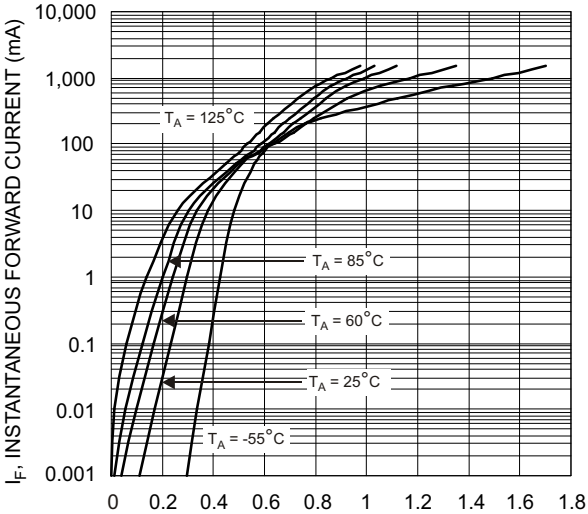


Fig. 1 Typical Forward Characteristics

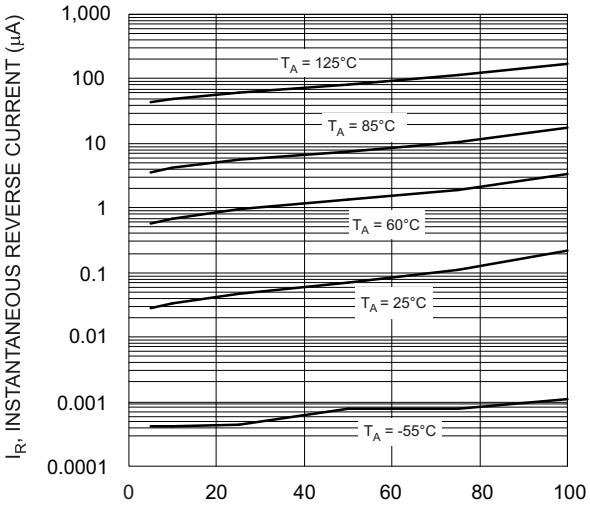


Fig. 2 Typical Reverse Characteristics

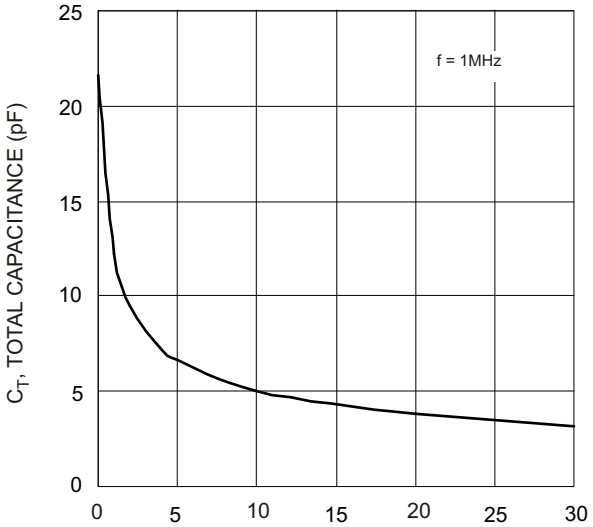


Fig. 3 Typical Total Capacitance

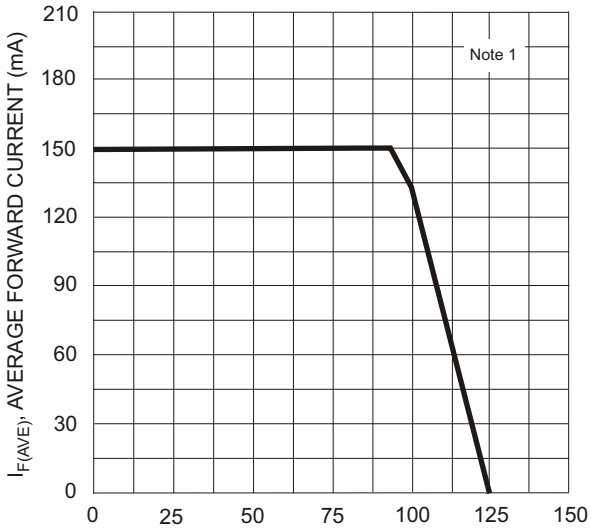


Fig. 4 Forward Current Derating

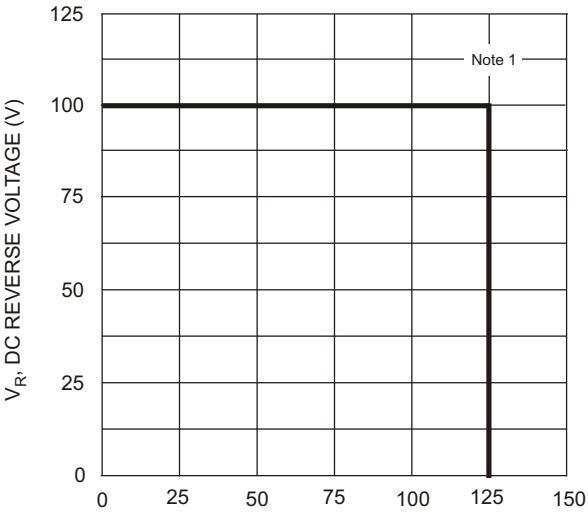


Fig. 5 Operating Temperature Derating

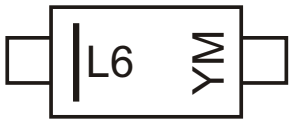
Note 1: Part mounted on FR-4 board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.

Ordering Information (Note 5)

Device	Packaging	Shipping
BAT46W-7-F	SOD-123	3000/Tape and Reel

Note: 5. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



L6 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: S = 2005)
M = Month (ex: 9 = September)

Date Code Key

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	R	S	T	U	V	W	X	Y	Z

Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D