



BAT46W

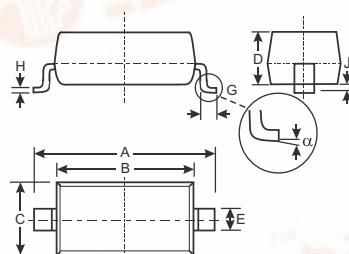
SURFACE MOUNT SCHOTTKY BARRIER DIODE

## 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 @ $T_A = 25^\circ C$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$		
Working Peak Reverse Voltage	$V_{RWM}$	100	V
DC Blocking Voltage	$V_R$		
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)	$R_{JA}$	420	C/W
Thermal Resistance, Junction to Ambient Air (Note 2)		370	
Operating Temperature Range	$T_j$	-55 to +125	°C
Storage Temperature Range	$T_{STG}$	-55 to +150	°C

## Electrical Characteristics @ $T_A = 25^\circ C$ 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	$V_R = 1.5V$ $V_R = 1.5V, T_j = 60^\circ C$ $V_R = 10V$ $V_R = 10V, T_j = 60^\circ C$ $V_R = 50V$ $V_R = 50V, T_j = 60^\circ C$ $V_R = 75V$ $V_R = 75V, T_j = 60^\circ C$
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 Polyimide 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.

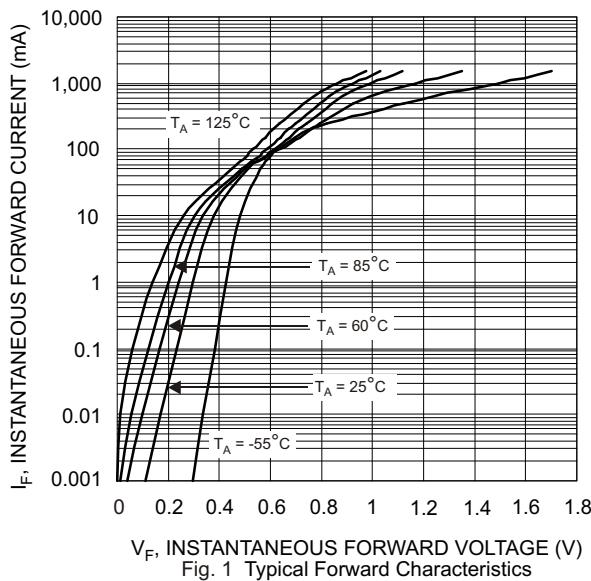


Fig. 1 Typical Forward Characteristics

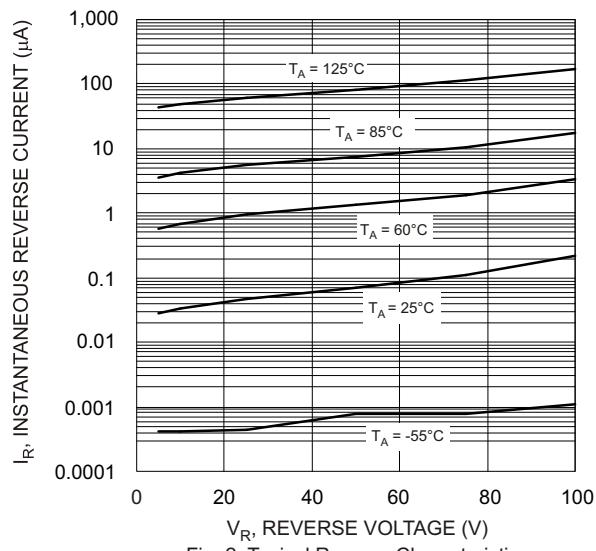


Fig. 2 Typical Reverse Characteristics

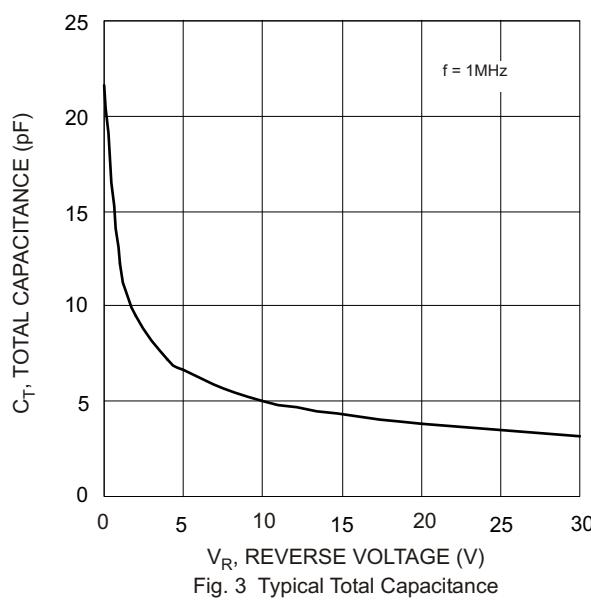


Fig. 3 Typical Total Capacitance

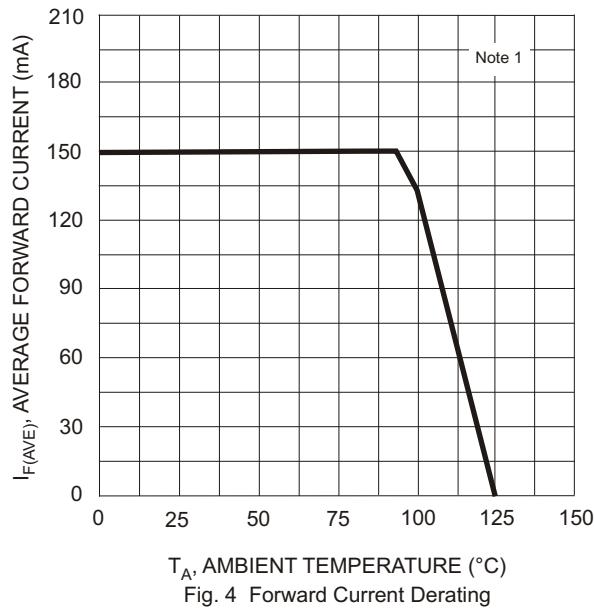


Fig. 4 Forward Current Derating

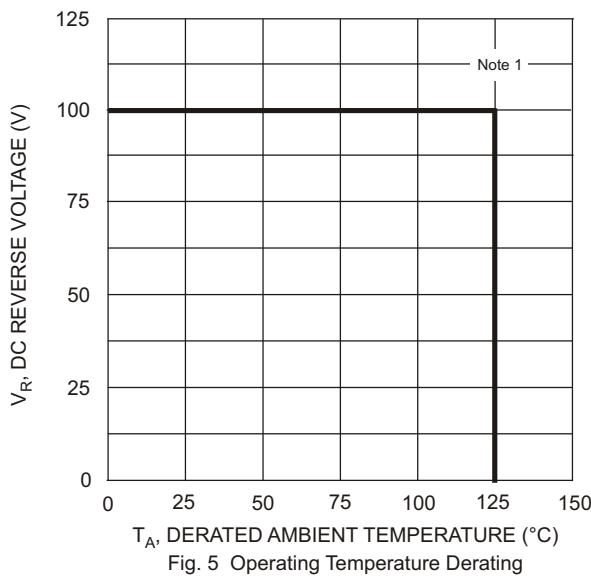


Fig. 5 Operating Temperature Derating

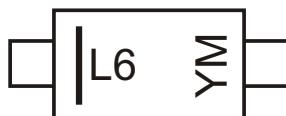
Note 1: Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.

## 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	
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

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