



BAT46WQ

SURFACE MOUNT SCHOTTKY BARRIER DIODE

Product Summary

V _R	I _F	V _F Max (V)	I _R Max (μA)
(V)	(A)	@ +25°C	@ +25°C
100	0.15	1.0	2.0

Features and Benefits

- High Breakdown Voltage
- Low Turn-On Voltage
- Guard Ring Construction for Transient Protection
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability
- PPAP Capable (Note 4)

Description and Applications

This Schottky Barrier diode is designed to meet the stringent requirements of AEC-Q101. It is ideally suited to use as:

- Polarity Protection Diode
- Re-Circulating Diode
- Switching Diode

Mechanical Data

- Case: SOD123
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Matte Tin Finish Annealed over Alloy 42 Leadframe.
 Terminals: Solderable per MIL-STD-202, Method 208 @3
- Polarity: Cathode Band
- Weight: 0.01 grams (Approximate)



Top View

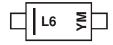
Ordering Information (Note 5)

Part Number	Case	Packaging
BAT46WQ-7-F	SOD123	3,000/Tape & Reel

Notes: 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.

- See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
- 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- 4. Automotive products are AEC-Q101 qualified and are PPAP capable. Refer to http://www.diodes.com/product_compliance_definitions.html.
- 5. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information



L6 = Product Type Marking Code YM = Date Code Marking Y = Year (ex: D = 2016)

M = Month (ex: 9 = September)

Date Code Key

Year	2004	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Code	R	В	С	D	Е	F	G	Н	I	J	K	L
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec



Maximum Ratings $(@T_A = +25^{\circ}C, \text{ unless otherwise specified.})$

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	I _F	150	mA
Repetitive Peak Forward Current (Note 6) @ t _P < 1.0s, Duty Cycle < 50%	I _{FRM}	350	mA
Forward Surge Forward Current (Note 6) @ t _P = 10ms	I _{FSM}	750	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation	P _D	200	mW
Thermal Resistance, Junction to Ambient Air (Note 6) Thermal Resistance, Junction to Ambient Air (Note 7)	R _{0JA}	420 370	°C/W
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

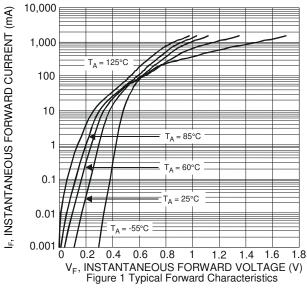
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

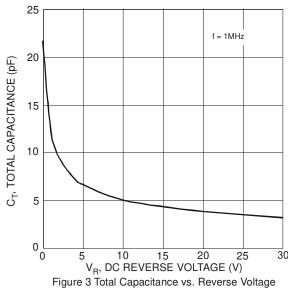
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 8)	$V_{(BR)R}$	100	-	_	V	$I_R = 100 \mu A$
Forward Voltage	V _F	l	l	0.25 0.45 1.00		$\begin{split} I_F &= 0.1 mA \\ I_F &= 10 mA \\ I_F &= 250 mA \end{split}$
Peak Reverse Current (Note 8)	I _R	_	-	0.3 5.0 0.5 7.5 1.0 15 2.0	μА	$V_R = 1.5V$ $V_R = 1.5V$, $T_J = +60^{\circ}C$ $V_R = 10V$, $V_T = 10V$
Total Capacitance	Ст	_	20 12	_	pF	$V_R = 0V, f = 1.0MHz$ $V_R = 1.0V, f = 1.0MHz$

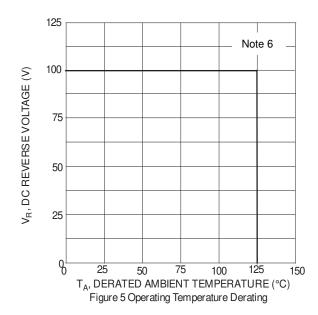
Notes:

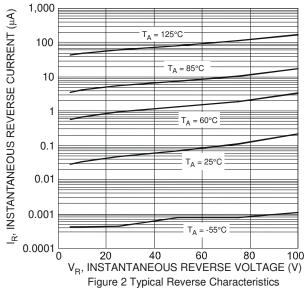
- 6. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at http://www.diodes.com/package-outlines.html.
- 7. Part mounted on Polymide board with recommended pad layout, which can be found on our website at http://www.diodes.com/package-outlines.html.
- 8. Short duration pulse test used to minimize self-heating effect.

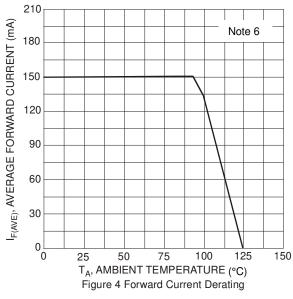


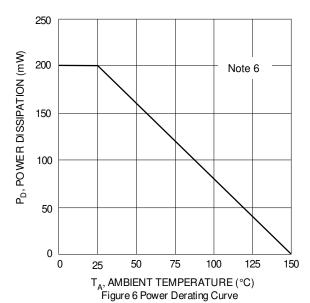










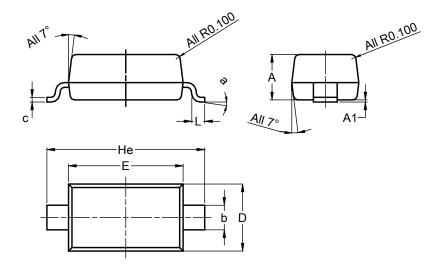




Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOD123

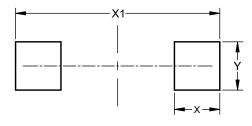


SOD123						
Dim	Min	Max	Тур			
Α	1.00	1.35	1.05			
A 1	0.00	0.10	0.05			
b	0.52	0.62	0.57			
С	0.10	0.15	0.11			
D	1.40	1.70	1.55			
E	2.55	2.85	2.65			
He	3.55	3.85	3.65			
L	0.25	0.40	0.30			
а	0º	8º				
All [All Dimensions in mm					

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOD123



Dimensions	Value (in mm)				
X	0.900				
X1	4.050				
Υ	0.950				



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