



BAT46W

Product Summary

V _R (V)	I⊧ (A)	V _{F MAX} (V) @250mA +25°C	I _{R MAX} (μΑ) @ 75V +25°C
100	0.15	1.0	2.0

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

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
- An Automotive-Compliant Part is Available Under Separate Datasheet (<u>BAT46WQ</u>)

SURFACE MOUNT SCHOTTKY BARRIER 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 4)

Part Number	Case	Packaging
BAT46W-7-F	SOD123	3,000/Tape & Reel

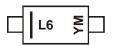
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.

 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. 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	
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Notes:

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



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	l _F	150	mA
Repetitive Peak Forward Current (Note 5) @ $t_p < 1.0s$, Duty Cycle < 50%	I _{FRM}	350	mA
Forward Surge Forward Current (Note 5) @ t _p = 10ms	I _{FSM}	750	mA

Thermal Characteristics

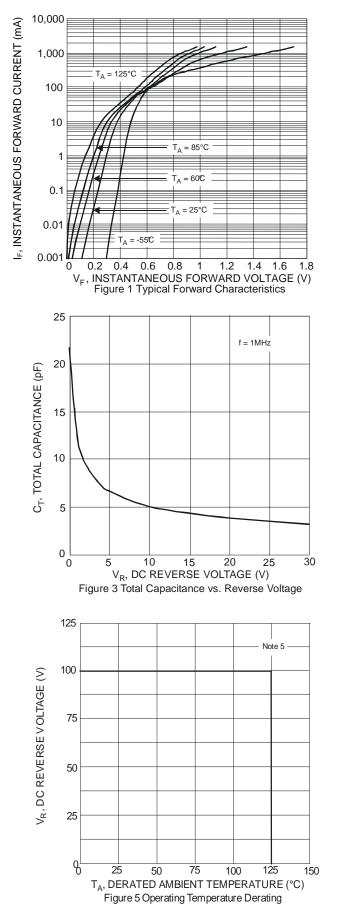
Characteristic	Symbol	Value	Unit
Power Dissipation	PD	200	mW
Thermal Resistance, Junction to Ambient Air (Note 5) Thermal Resistance, Junction to Ambient Air (Note 6)	R _{0JA}	420 370	°C/W
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

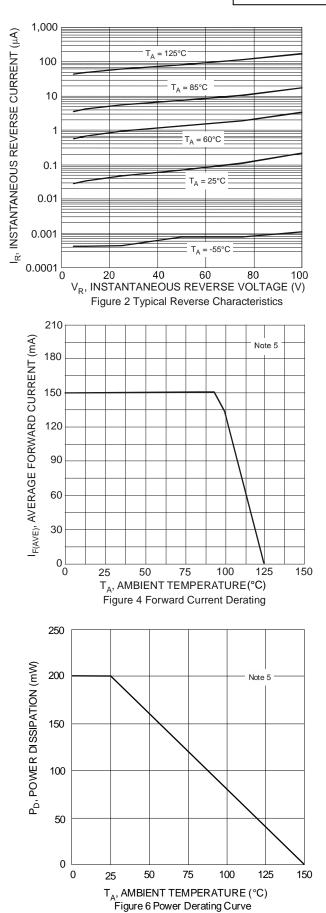
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	V _{(BR)R}	100	—	—	V	I _R = 100μA
Forward Voltage	VF	_	_	0.25 0.45 1.00	V	$I_F = 0.1mA$ $I_F = 10mA$ $I_F = 250mA$
Peak Reverse Current (Note 7)	I _R	_	_	0.3 5.0 0.5 7.5 1.0 15 2.0 20	μA	$\label{eq:VR} \begin{split} V_{R} &= 1.5V \\ V_{R} &= 1.5V, \ T_{J} = +60^{\circ}\text{C} \\ V_{R} &= 10V \\ V_{R} &= 10V, \ T_{J} = +60^{\circ}\text{C} \\ V_{R} &= 50V \\ V_{R} &= 50V, \ T_{J} = +60^{\circ}\text{C} \\ V_{R} &= 75V \\ V_{R} &= 75V, \ T_{J} = +60^{\circ}\text{C} \end{split}$
Total Capacitance	Ст	—	20 12	—	pF	V _R = 0V, f = 1.0MHz V _R = 1.0V, f = 1.0MHz

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





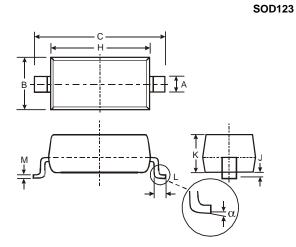


BAT46W Document number: DS30044 Rev. 18 - 2 Downloaded from Arrow.com.



Package Outline Dimensions

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

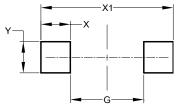


SOD123					
Dim	Min	Max			
Α	0.55	Тур			
в	1.40	1.70			
с	3.55	3.85			
H	2.55	2.85			
ر	0.00	0.10			
ĸ	1.00	1.35			
Г	0.25	0.40			
М	0.10	0.15			
α	0	8°			
All Dir	nensions	s in mm			

Suggested Pad Layout

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





Dimensions	Value (in mm)
G	2.250
Х	0.900
X1	4.050
Y	0.950



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