



BAT54WS

SURFACE MOUNT SCHOTTKY BARRIER DIODE

Product Summary (@ T_A = +25°C)

V _{RRM} (V)	I _O (mA)	V _{F(MAX)} (mV)	I _{R(MAX)} (μ A)
30	100	1000	2

Description and Applications

- Reverse Polarity Protection
- Ultra High-Speed Switching
- Freewheeling

Features and Benefits

- Fast Switching
- Ultra-Small Surface Mount Package
- PN Junction Guard Ring for Transient and ESD 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)

Mechanical Data

- Case: SOD323
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Leads: Solderable per MIL-STD-202, Method 208
 Also Available in Lead Free Plating (Matte Tin Finish Annealed over Alloy 42 Leadframe). Polarity: Cathode Band (3)
- Weight: 0.004 grams (Approximate)



Top View

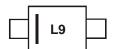
Ordering Information (Note 5)

Part Number	Case	Packaging
BAT54WS-7-F	SOD323	3000/Tape & Reel
BAT54WSQ-7-F	SOD323	3000/Tape & Reel
BAT54WS-13-F	SOD323	10000/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.htmlfor 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. Automotive, AEC-Q101 and standard products are electrically and thermally the same, except where specified. For more information, please refer to https://www.diodes.com/quality/product-compliance-definitions/.
- 5. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/

Marking Information



L9 = Product Type Marking Code



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 _R WM	30	V
RMS Reverse Voltage		$V_{R(RMS)}$	21	V
Average Rectified Forward Current		lo	100	mA
Forward Continuous Current (Note 6)		I _F	200	mA
Repetitive Peak Forward Current (Note 6)		I _{FRM}	300	mA
Forward Surge Current (Note 6)	@ t < 1.0s	I _{FSM}	600	mA

Thermal Characteristics

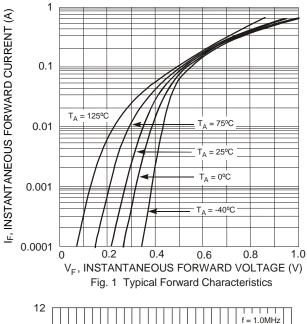
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P _D	200	mW
Thermal Resistance, Junction to Ambient Air (Note 6)	$R_{ hetaJA}$	625	°C/W
Operating and Storage Temperature Range (Note 8)	T _J , T _{STG}	-65 to +150	°C

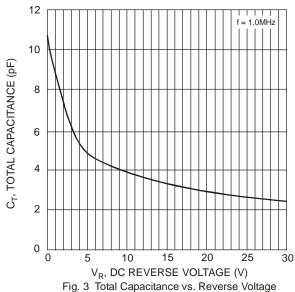
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

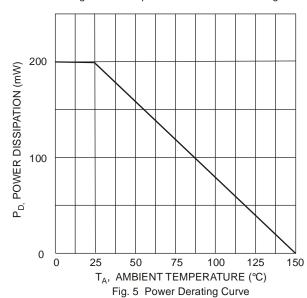
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	30	_	_	V	$I_R = 100\mu A$
Forward Voltage	V _{FM}	_	_	240 320 400 500 1000	mV	I _F = 0.1mA I _F = 1mA I _F = 10mA I _F = 30mA I _F = 100mA
Reverse Leakage Current (Note 7)	I _{RM}	_	_	2.0	μA	V _R = 25V
Total Capacitance	C _T	_	_	10	pF	$V_R = 1.0V, f = 1.0MHz$
Reverse Recovery Time	t _{RR}	_	_	5.0	ns	$I_F = 10$ mA through $I_R = 10$ mA to $I_R = 1.0$ mA, $R_L = 100$ Ω

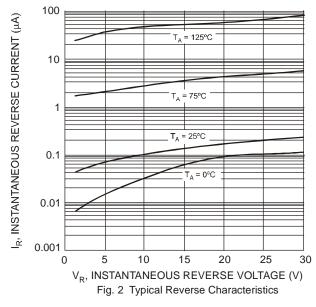
- 6. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at http://www.diodes.com/package-outlines.html.
- Short duration pulse test used to minimize self-heating effect.
 d P_{tot} > 1/R_{6JA} thermal runaway condition for a diode on its own heatsink.

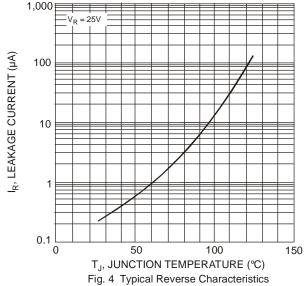










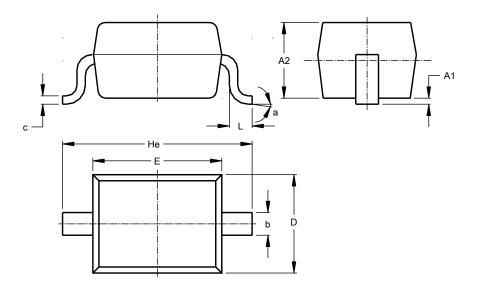




Package Outline Dimensions

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

SOD323

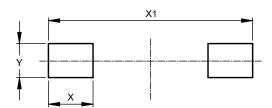


SOD323					
Dim	Min	Max	Тур		
A 1		0.10	0.05		
A2	1.00	1.10	1.05		
b	0.25	0.35	0.30		
C	0.10	0.15	0.11		
D	1.20	1.40	1.30		
Е	1.60	1.80	1.70		
He	2.30	2.70	2.50		
L	0.20	0.40	0.30		
а	00	8°			
All Dimensions in mm					

Suggested Pad Layout

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

SOD323



Dimensions	Value (in mm)
Х	0.590
X1	2.700
Υ	0.450



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