



SURFACE MOUNT SCHOTTKY BARRIER DIODE

Product Summary

V _{RRM} (V)	I _F (mA)	V _{Fmax} (V)	I _{Rmax} (μA)
30	200	1	2

Description

200mA surface mount Schottky Barrier Diode in SOT523 package, offers low turn-on voltage and fast switching capability, designed with PN Junction Guard Ring for Transient and ESD Protection, totally lead-free finish and RoHS compliant, "Green" device.

Features

- Ultra-Small Surface Mount Package
- Low Forward Voltage Drop
- Fast Switching
- 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)
- The DIODES™ BAT54TQ/STQ are suitable for automotive applications requiring specific change control; these parts are AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.

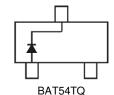
https://www.diodes.com/quality/product-definitions/

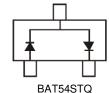
Mechanical Data

- Package: SOT523
- Package Material: Molded Plastic, "Green" Molding Compound.
 UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish Matte Tin Annealed over Alloy 42 Leadframe.
 Solderable per MIL-STD-202, Method 208 (§3)
- Lead-Free Plating
- · Polarity: See Diagrams Below
- Weight: 0.002 grams (Approximate)









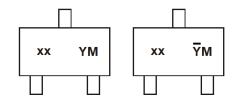
Ordering Information (Note 4)

Part Number	Package	Packing		
Part Number	Package	Qty.	Carrier	
BAT54TQ-7-F	SOT523	3,000	Tape & Reel	
BAT54STQ-7-F	SOT523	3,000	Tape & Reel	

Notes:

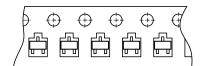
- 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
- 2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
- 3. Halogen- 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 https://www.diodes.com/design/support/packaging/diodes-packaging/

Marking Information



xx = Product Type Marking Code L1 = BAT54TQ L4 = BAT54STQ YM & VM - Date Code Marking

YM & $\overline{Y}M$ = Date Code Marking Y & \overline{Y} = Year (ex: J = 2022) M = Month (ex: 9 = September)



Date Code Key

Year	2018		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Code	F		J	K	L	М	N	0	Р	R	S	Τ
Month	lon	Feb	Mar	Amu	Mov	l	11	A	C	0-4	N	
INIOTILIT	Jan	reb	war	Apr	May	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 _R M V _R WM V _R	30	٧
Forward Continuous Current (Note 5)	IFM	200	mA
Repetitive Peak Forward Current	IFRM	300	mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	IFSM	600	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	PD	150	mW
Typical Thermal Resistance, Junction to Ambient (Note 5)	$R_{ heta JA}$	490	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

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

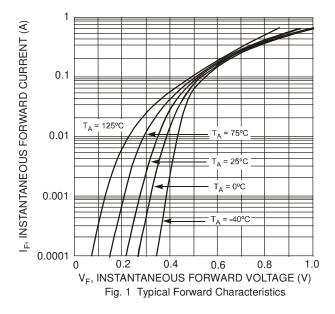
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V _{(BR)R}	30	_	_	V	I _R = 100μA
Forward Voltage	VF	_	_	240 320 400 500 1,000	mV	IF = 0.1mA IF = 1mA IF = 10mA IF = 30mA IF = 100mA
Reverse Leakage Current (Note 6)	I _R		_	2.0	μΑ	V _R = 25V
Total Capacitance	Ст	_	_	10	pF	V _R = 10V, f = 1.0MHz

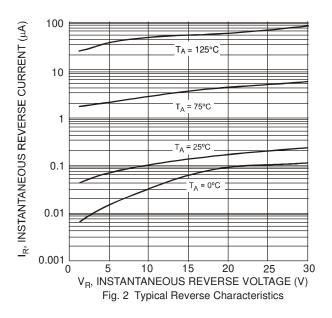
Notes:

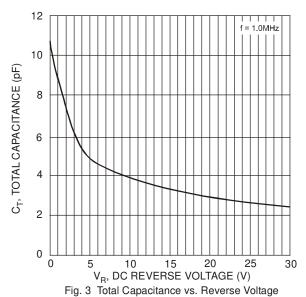
^{5.} Device mounted on FR-4 substrate PC board with recommended pad layout, which can be found on our website at

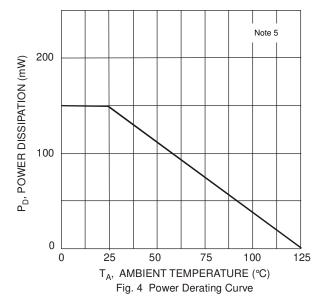
http://www.diodes.com/package-outlines.html.
6. Short duration pulse test used to minimize self-heating effect.









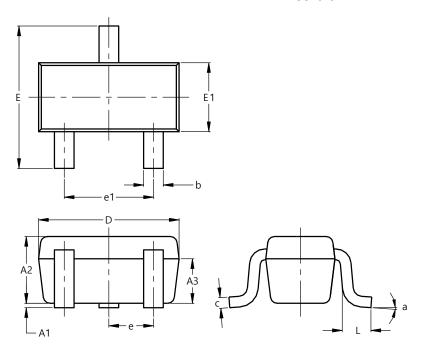




Package Outline Dimensions

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

SOT523

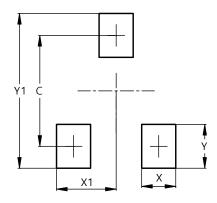


SOT523							
Dim	Min	Max	Тур				
A1	0.00	0.10	0.05				
A2	0.60	0.80	0.75				
A3	0.45	0.65	0.50				
b	0.15	0.30	0.22				
С	0.10	0.20	0.12				
D	1.50	1.70	1.60				
Е	1.45	1.75	1.60				
E1	0.75	0.85	0.80				
е	e 0.50 BSC						
e1	0.90	1.10	1.00				
L	0.20	0.40	0.33				
а	0°		8°				
All Dimensions in mm							

Suggested Pad Layout

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

SOT523



Dimensions	Value (in mm)
С	1.29
Х	0.40
X1	0.70
Υ	0.51
Y1	1.80



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