



SURFACE MOUNT SCHOTTKY BARRIER DIODE

Product Summary (@T_A = +25°C)

V _{RRM} (V)	I _O (mA)	V _{F MAX} (V)	I _{R MAX} (μ A)
40	250	0.75	2.0

Description

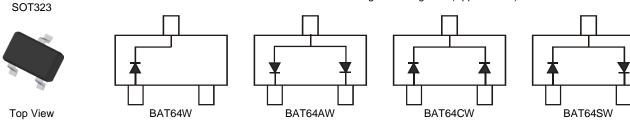
This 250mA surface mount Schottky Barrier Diode in SOT323 package offers low turn-on voltage and fast switching capability, designed with PN junction guard ring for transient protection.

Features

- Low Forward Voltage Drop
- Fast Switching
- Ultra-Small Surface Mount Package
- PN Junction Guard Ring for Transient Protection
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Notes 3)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

- Case: SOT323
- Case Material: Molded Plastic, "Green" Molding Compound.
 UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Alloy 42 Leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 ⁽³⁾
- Polarity: See Diagrams Below
- Weight: 0.006 grams (Approximate)



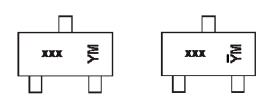
Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
BAT64W-7-F	Standard	SOT323	3000/Tape & Reel
BAT64W-13-F	Standard	SOT323	10,000/Tape & Reel
BAT64AW-7-F	Standard	SOT323	3000/Tape & Reel
BAT64AW-13-F	Standard	SOT323	10,000/Tape & Reel
BAT64CW-7-F	Standard	SOT323	3000/Tape & Reel
BAT64CW-13-F	Standard	SOT323	10,000/Tape & Reel
BAT64SW-7-F	Standard	SOT323	3000/Tape & Reel
BAT64SW-13-F	Standard	SOT323	10,000/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



xxx = Product Type Marking Code

K61 = BAT64WK62 = BAT64AW

K63 = BAT64CW

K64 = BAT64SW

YM& $\overline{Y}M$ = Date Code Marking Y or \overline{Y} = Year (ex: F = 2018)

M = Month (ex: 9 = September)

Date Code Key

Year	2016	201	7	2018	2019	20:	20	2021	2022	20	23	2024
Code	D	Е		F	G	H		I	J	ŀ	(L
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	1	5	6	7	8	a	0	N	D



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 V _R	40	٧
Average Rectified Output Current	lo	250	mA
Repetitive Peak Forward Current Pulse Wave=1ms, Duty Cycle=25%	I _{FRM}	2,000	mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	2,100	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	200	mW
Thermal Resistance Junction to Ambient Air (Note 5)	R _{OJA}	625	°C/W
Junction and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

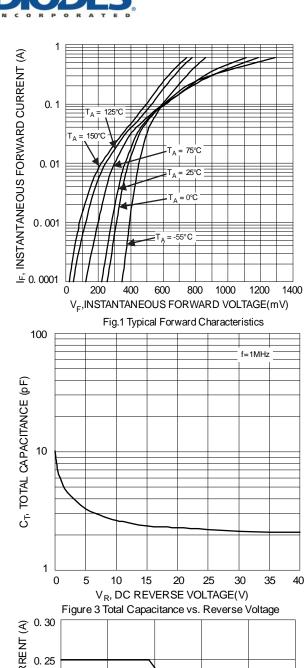
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

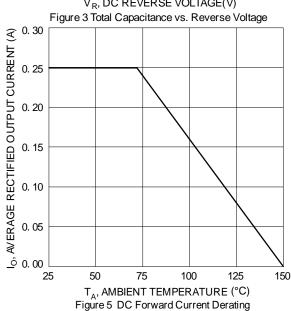
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V _{(BR)R}	40	_	_	V	$I_R = 100\mu A$
Forward Voltage	V _F	_	_	350 430 520 750	mV	I _F = 1mA I _F = 10mA I _F = 30mA I _F = 100mA
Reverse Leakage Current (Note 6)	I _R	_	_	2.0	μA	$V_R = 40V$
Total Capacitance	C _T	_	6.0	_	pF	$V_R = 1V, f = 1.0MHz$
Reverse Recovery Time	t _{RR}	_	3.0	_	ns	$I_F = I_R = 10 \text{mA},$ $I_{RR} = 0.1 I_R, R_L = 100 \Omega$

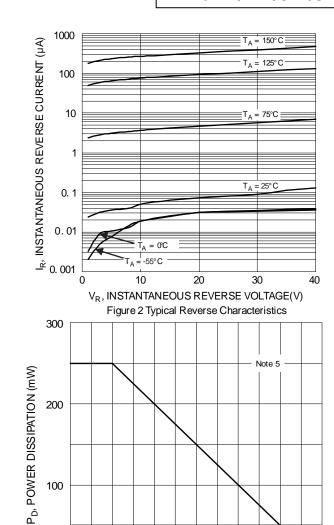
Notes:

- 5. 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.
- $\hbox{6. Short duration pulse test used to minimize self-heating effect.}\\$









50

75

T_A, AMBIENT TEMPERATURE (°C)

Figure 4 Power Derating Curve

100

125

150

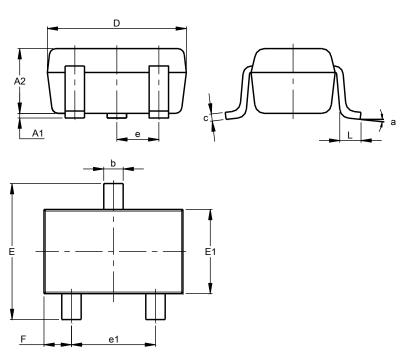
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Package Outline Dimensions

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

SOT323

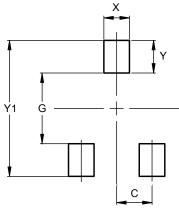


SOT323						
Dim	Min	Max	Тур			
A1	0.00	0.10	0.05			
A2	0.90	1.00	0.95			
b	0.25	0.40	0.30			
С	0.10	0.18	0.11			
D	1.80	2.20	2.15			
Е	2.00	2.20	2.10			
E1	1.15	1.35	1.30			
е	C	0.650 BSC				
e1	1.20	1.40	1.30			
F	0.375	0.475	0.425			
L	0.25	0.40	0.30			
а	0°	8°	_			
All Dimensions in mm						

Suggested Pad Layout

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

SOT323



Dimensions	Value (in mm)
С	0.650
G	1.300
Х	0.470
Y	0.600
Y1	2.500



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