



BAT42WS / BAT43WS

SURFACE MOUNT SCHOTTKY BARRIER DIODE

Features

- Low Forward Voltage Drop
- Fast Switching
- Ultra-Small Surface Mount Package
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Notes 3 & 4)

Mechanical Data

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

SOD323



Top View

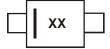
Ordering Information (Note 5)

Part Number	Case	Packaging
BAT42WS-7-F	SOD323	3000/Tape & Reel
BAT43WS-7-F	SOD323	3000/Tape & Reel

Notes:

- 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
- 2. See http://www.diodes.com 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. Product manufactured with Date Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb₂O₃ Fire Retardants.
- 5. For packaging details, go to our website at http://www.diodes.com.

Marking Information



xx = Product Type Marking Code, S7 = BAT42WS S8 = BAT42WS and BAT43WS



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	30	V
RMS Reverse Voltage		V _{R(RMS)}	21	V
Forward Continuous Current (Note 6)		I _{FM}	200	mA
Repetitive Peak Forward Current (Note 6)	@ t < 1.0s	I _{FRM}	500	mA
Non-Repetitive Peak Forward Surge Current	@ t < 10ms	I _{FSM}	4.0	А

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P _D	200	mW
Thermal Resistance Junction to Ambient Air (Note 6)	$R_{ heta JA}$	625	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +125	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

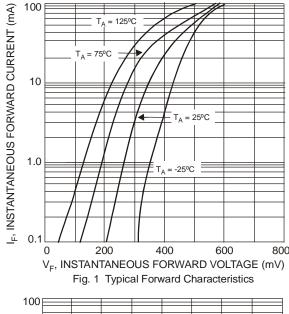
Characteristic		Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)		$V_{(BR)R}$	30	_	V	$I_R = 100 \mu A$
	Both Types	V _F	_	1.0	V	I _F = 200mA
Forward Voltage Drop	BAT42WS		_	0.40		I _F = 10mA
	BAT42WS			0.65		I _F = 50mA
	BAT43WS		0.26	0.33		I _F = 2.0mA
	BAT43WS			0.45		I _F = 15mA
Reverse Current (Note 7)		I _R	_	500	nA	V _R = 25V
				100	μΑ	V _R = 25V, T _J = 100°C
Total Capacitance		C _T		10	pF	V _R = 1.0, f = 1.0MHz
Reverse Recovery Time		t _{rr}	_	5.0	ns	$I_F = I_R = 10 \text{mA},$ $I_{rr} = 0.1 \times I_R, R_L = 100 \Omega$

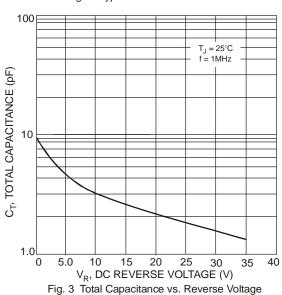
Notes:

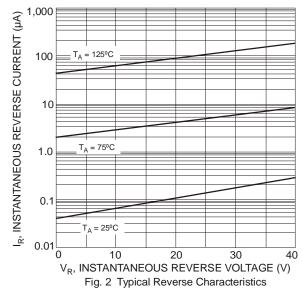
^{6.} Part mounted on FR4 PC Board with recommended pad layout, which can be found on our website at http://www.diodes.com.

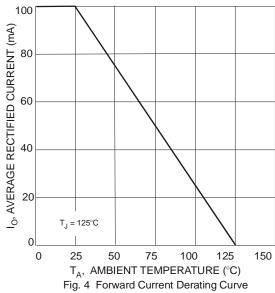
^{7.} Short duration pulse test used to minimize self-heating effect.



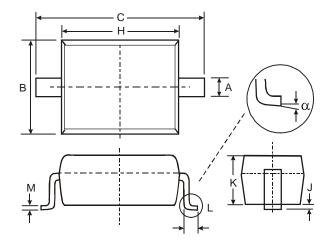








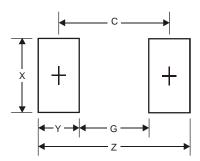
Package Outline Dimensions



SOD323			
Dim	Min	Max	
Α	0.25	0.35	
В	1.20	1.40	
C	2.30	2.70	
Н	1.60	1.80	
7	0.00	0.10	
K	1.0	1.1	
L	0.20	0.40	
М	0.10	0.15	
α	0°	8°	
All Dimensions in mm			



Suggested Pad Layout



Dimensions	Value (in mm)
Z	3.75
G	1.05
Х	0.65
Y	1.35
С	2.40

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