BAT42WS / BAT43WS

SURFACE MOUNT SCHOTTKY BARRIER DIODE

Features

- Low Forward Voltage Drop
- Fast Switching
- Ultra-Small Surface Mount Package
- **Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 3 and 4)**

Mechanical Data

- Case: SOD-323
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Leads: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: Cathode Band
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.004 grams (approximate)

Top View

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 1)		I_{FM}	200	mA
Repetitive Peak Forward Current (Note 1)	@ t < 1.0s	I_{FRM}	500	mA
Non-Repetitive Peak Forward Surge Current	@ t < 10ms	I_{FSM}	4.0	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	P_D	200	mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{\theta JA}$	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 2)		$V_{(BR)R}$	30	—	V	I_R = 100μA
Forward Voltage Drop	Both Types	V_F	—	1.0	V	I_F = 200mA
	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 2)		I_R	—	500	nA	V_R = 25V
				100	μA	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 = 10mA, I_{rr} = 0.1 x I_R, R_L = 100Ω

Notes:
1. Part mounted on FR4 PC Board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
2. Short duration pulse test used to minimize self-heating effect.
3. No purposefully added lead. Halogen and Antimony Free.
4. Product manufactured with Data 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 Sb_2O_3 Fire Retardants.

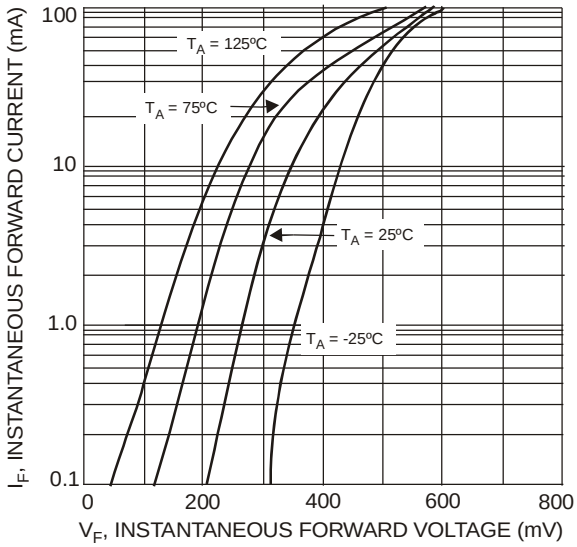


Fig. 1 Typical Forward Characteristics

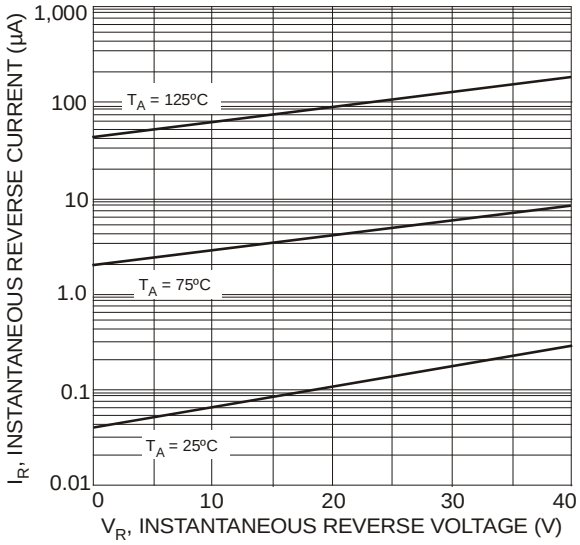


Fig. 2 Typical Reverse Characteristics

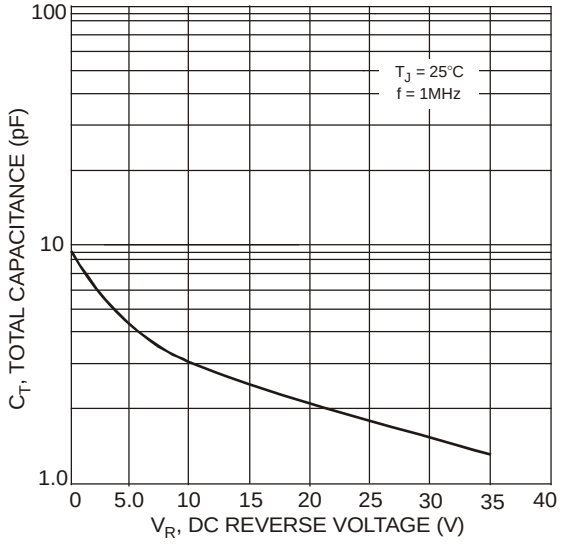


Fig. 3 Total Capacitance vs. Reverse Voltage

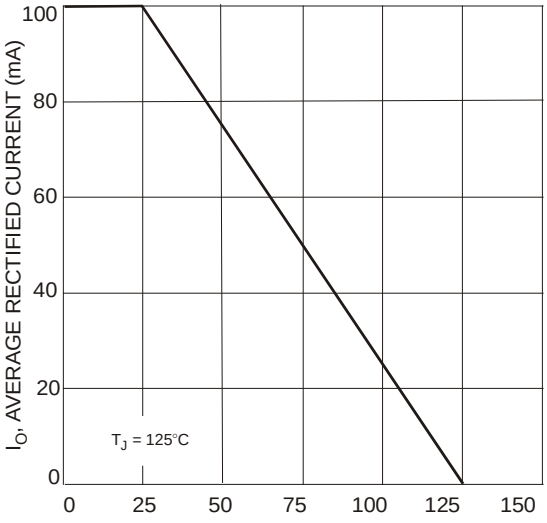


Fig. 4 Forward Current Derating Curve

Ordering Information (Note 5)

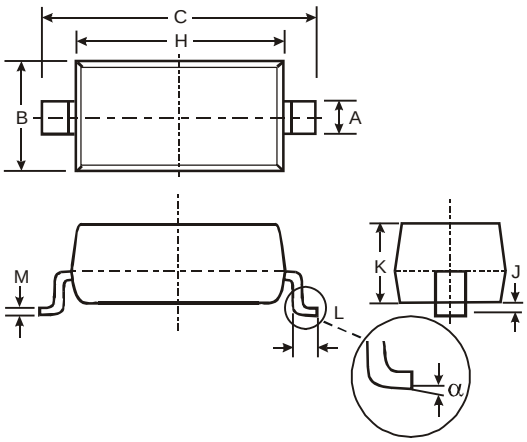
Part Number	Case	Packaging
BAT42WS-7-F	SOD-323	3000/Tape & Reel
BAT43WS-7-F	SOD-323	3000/Tape & Reel

Notes: 5. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information

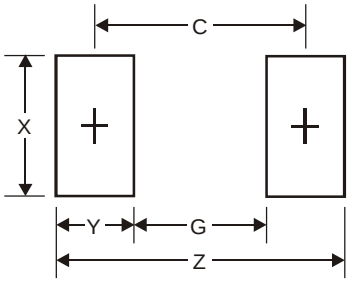
xx = Product Type Marking Code,
S7 = BAT42WS
S8 = BAT43WS

Package Outline Dimensions



SOD-323		
Dim	**Min**	**Max**
A	0.25	0.35
B	1.20	1.40
C	2.30	2.70
H	1.60	1.80
J	0.00	0.10
K	1.0	1.1
L	0.20	0.40
M	0.10	0.15
α	0°	8°
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
Z	3.75
G	1.05
X	0.65
Y	1.35
C	2.40