



BAT54WS

#### SURFACE MOUNT SCHOTTKY BARRIER DIODE

#### **Features**

- Fast Switching
- Ultra-Small Surface Mount Package
- PN Junction Guard Ring for Transient and ESD Protection
- Lead, Halogen and Antimony Free, RoHS Compliant
- "Green" Device (Notes 3 and 5)

### **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
- Also Available in Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe). Polarity: Cathode Band
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.004 grams (approximate)



Top View

### **Maximum Ratings** $@T_A = 25^{\circ}C$ unless otherwise specified

Characteristic		Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	30	V
RMS Reverse Voltage		V <sub>R(RMS)</sub>	21	V
Average Rectified Forward Current		lo	100	mA
Forward Continuous Current (Note 1)		I <sub>F</sub>	200	mA
Repetitive Peak Forward Current (Note 1)		I <sub>FRM</sub>	300	mA
Forward Surge Current (Note 1)	⊉ t < 1.0s	I <sub>FSM</sub>	600	mA

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	PD	200	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	$R_{ heta JA}$	625	°C/W
Operating and Storage Temperature Range (Note 4)	TJ, T <sub>STG</sub>	-65 to +150	°C

### Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	V <sub>(BR)R</sub>	30	_	_	V	I <sub>R</sub> = 100μA
Forward Voltage	Vfm	_		240 320 400 500 1000	mV	$l_{F} = 0.1mA$ $l_{F} = 1mA$ $l_{F} = 10mA$ $l_{F} = 30mA$ $l_{F} = 100mA$
Reverse Leakage Current (Note 2)	I <sub>RM</sub>	_		2.0	μΑ	V <sub>R</sub> = 25V
Total Capacitance	CT	_		10	pF	V <sub>R</sub> = 1.0V, f = 1.0MHz
Reverse Recovery Time	t <sub>rr</sub>	_	_	5.0	ns	$I_F = 10mA$ through $I_R = 10mA$ to $I_R = 1.0mA$ , $R_L = 100\Omega$

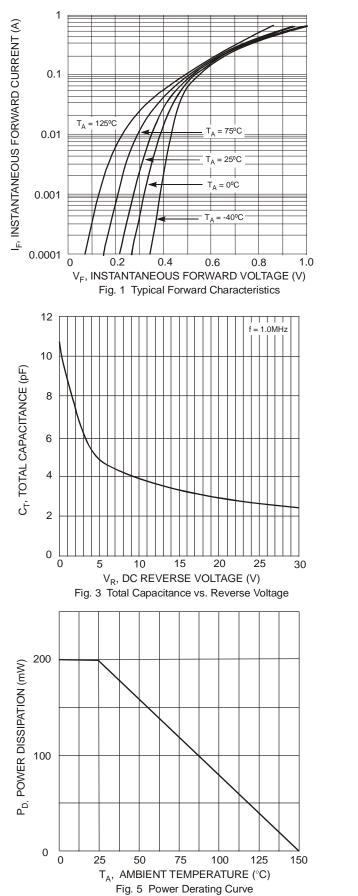
1. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf. Notes: 2. Short duration pulse test used to minimize self-heating effect.

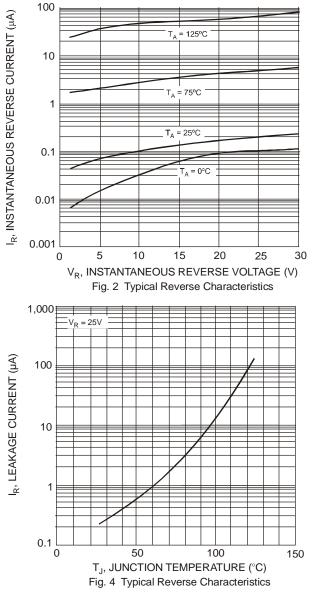
3. No purposefully added lead. Halogen and Antimony Free.

4.  $\frac{d P_{tot}}{d T_J} > \frac{1}{R_{0JA}}$  thermal runaway condition for a diode on its own heatsink.

5. 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<sub>2</sub>O<sub>3</sub> Fire Retardants.









#### Ordering Information (Note 6)

Part Number	Case	Packaging
BAT54WS-7-F	SOD-323	3000/Tape & Reel

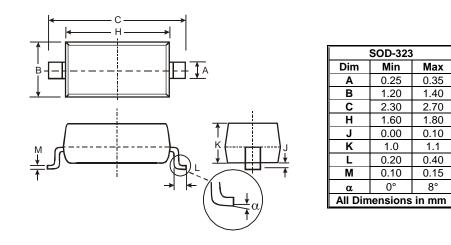
Notes: 6. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

### **Marking Information**

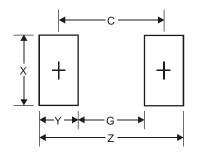


L9 = Product Type Marking Code

# **Package Outline Dimensions**



### 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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