

# BAT42W / BAT43W

#### SURFACE MOUNT SCHOTTKY BARRIER DIODE

#### **Features**

- Low Forward Voltage Drop
- Fast Switching Time
- Surface Mount Package Ideally Suited for Automatic Insertion
- Available in Lead Free/RoHS Compliant Version (Note 3)

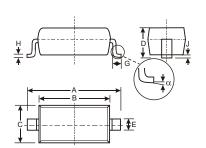
### **Mechanical Data**

- Case: SOD-123
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Also Available in Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe). Please See Ordering Information, Note 5, on Page 2
- Polarity: Cathode Band
- Marking: Date Code & Type Code, See Page 2
- Type Codes: BAT42W S7

BAT43W S8

Ordering Information: See Page 2

Weight: 0.01 grams (approx.)



SOD-123									
Dim	Dim Min								
Α	3.55	3.85							
В	2.55	2.85							
С	1.40	1.70							
D		1.35							
E	0.55 Typical								
G	0.25 —								
Н	0.11 T	ypical							
J		0.10							
α	0° 8°								
All Dimensions in mm									

#### Maximum Ratings @ T<sub>A</sub> = 25°C unless otherwise specified

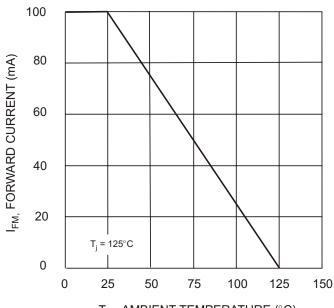
Characteristic	Symbol	BAT42W / BAT43W	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>R</sub> WM V <sub>R</sub>	30	V
RMS Reverse Voltage	$V_{R(RMS)}$	21	V
Forward Continuous Current (Note 1)	I <sub>FM</sub>	200	mA
Repetitive Peak Forward Current (Note 1) @ t < 1.0s	I <sub>FRM</sub>	500	mA
Non-Repetitive Peak Forward Surge Current @ t < 10ms	I <sub>FSM</sub>	4.0	A
Power Dissipation	P <sub>d</sub>	200	mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{ hetaJA}$	500	°C/W
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>STG</sub>	-55 to +125	°C

#### Electrical Characteristics @ TA = 25°C unless otherwise specified

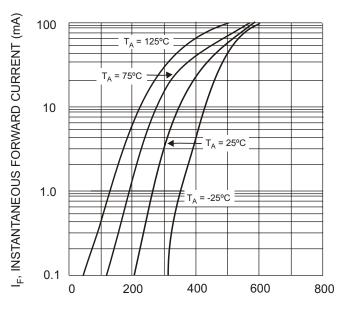
Characteristic	Symbol	Min	Max	Unit	Test Condition	
Reverse Breakdown Voltage (Note 2)			30	_	V	I <sub>R</sub> = 100μA
Forward Voltage Drop (Note 2)  All Types BAT42W BAT42W BAT43W BAT43W		V <sub>FM</sub>	  0.26 	1.0 0.40 0.65 0.33 0.45	V	I <sub>F</sub> = 200mA I <sub>F</sub> = 10mA I <sub>F</sub> = 50mA I <sub>F</sub> = 2.0mA I <sub>F</sub> = 15mA
Peak Reverse Current (Note 2)		I <sub>RM</sub>	_	500 100	nA μA	V <sub>R</sub> = 25V V <sub>R</sub> = 25V, T <sub>j</sub> = 100°C
Total Capacitance		Ст	_	10	pF	V <sub>R</sub> = 1.0V, f = 1.0MHz
Reverse Recovery Time		t <sub>rr</sub>	_	5.0	ns	$I_F = I_R = 10 \text{mA},$ $I_{rr} = 0.1 \text{ x } I_R, R_L = 100 \Omega$
Rectification Efficiency		ην	80	_	%	$R_L = 15\Omega$ , $C_L = 300pF$ , $f = 45MHz$ , $V_{RF} = 2.0V$

- 1. Part mounted on FR-4 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.

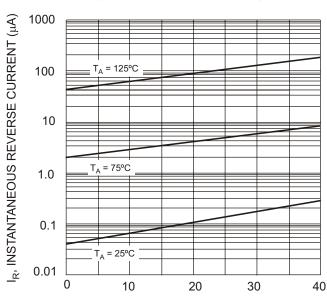




T<sub>A</sub>, AMBIENT TEMPERATURE (°C) Fig. 1 Forward Current Derating Curve



V<sub>F</sub>, INSTANTANEOUS FORWARD VOLTAGE (mV) Fig. 2 Typical Forward Characteristics



V<sub>R</sub>, INSTANTANEOUS REVERSE VOLTAGE (V) Fig. 3 Typical Reverse Characteristics

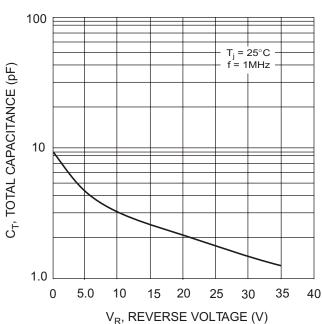


Fig. 4 Total Capacitance vs. Reverse Voltage

## Ordering Information (Note 4)

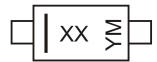
Device	Packaging	Shipping		
BAT42W-7	SOD-123	3000/Tape & Reel		
BAT43W-7	SOD-123	3000/Tape & Reel		

Notes: 4. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

5. For Lead Free/RoHS Compliant version part numbers, please add "-F" suffix to the part numbers above. Example: BAT43W-7-F.



# **Marking Information**



XX = Product Type Marking Code YM = Date Code Marking Y = Year (ex: N = 2002) M = Month (ex: 9 = September)

#### Date Code Key

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Code	М	N	Р	R	S	Т	U	٧	W

Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D