

# BAT42W / BAT43W

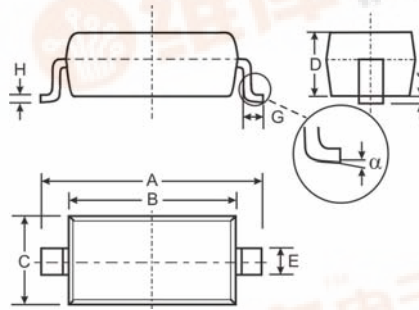
## SURFACE MOUNT SCHOTTKY BARRIER DIODE

### Features

- Low Forward Voltage Drop
- Fast Switching Time
- Surface Mount Package Ideally Suited for Automatic Insertion
- **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
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: Cathode Band
- Marking Information: See Page 3
- Type Codes: BAT42W S7  
BAT43W S8
- Ordering Information: See Page 3
- Weight: 0.01 grams (approximate)



SOD-123		
Dim	Min	Max
A	3.55	3.85
B	2.55	2.85
C	1.40	1.70
D	—	1.35
E	0.45	0.65
	0.55 Typical	
G	0.25	—
H	0.11 Typical	
J	—	0.10
$\alpha$	0°	8°
All Dimensions in mm		

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

Characteristic	Symbol	BAT42W / BAT43W	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$	30	V
Working Peak Reverse Voltage	$V_{RWM}$		
DC Blocking Voltage	$V_R$		
RMS Reverse Voltage	$V_{R(RMS)}$	21	V
Forward Continuous Current (Note 1)	$I_{FM}$	200	mA
Repetitive Peak Forward Current (Note 1) @ $t < 1.0\text{s}$	$I_{FRM}$	500	mA
Non-Repetitive Peak Forward Surge Current @ $t < 10\text{ms}$	$I_{FSM}$	4.0	A
Power Dissipation	$P_d$	200	mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{\theta JA}$	500	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_j, T_{STG}$	-55 to +125	$^\circ\text{C}$

### Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition	
Reverse Breakdown Voltage (Note 2)	$V_{(BR)R}$	30	—	V	$I_R = 100\mu\text{A}$	
Forward Voltage Drop	$V_{FM}$	All Types	—	1.0	V	$I_F = 200\text{mA}$ $I_F = 10\text{mA}$ $I_F = 50\text{mA}$ $I_F = 2.0\text{mA}$ $I_F = 15\text{mA}$
		BAT42W	—	0.40		
		BAT42W	—	0.65		
		BAT43W	0.26	0.33		
		BAT43W	—	0.45		
Peak Reverse Current (Note 2)	$I_{RM}$	—	500	nA	$V_R = 25\text{V}$	
			100	$\mu\text{A}$	$V_R = 25\text{V}, T_j = 100^\circ\text{C}$	
Total Capacitance	$C_T$	—	10	pF	$V_R = 1.0\text{V}, f = 1.0\text{MHz}$	
Reverse Recovery Time	$t_{rr}$	—	5.0	ns	$I_F = I_R = 10\text{mA}$ , $I_{tr} = 0.1 \times I_R, R_L = 100\Omega$	

- Notes:
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.

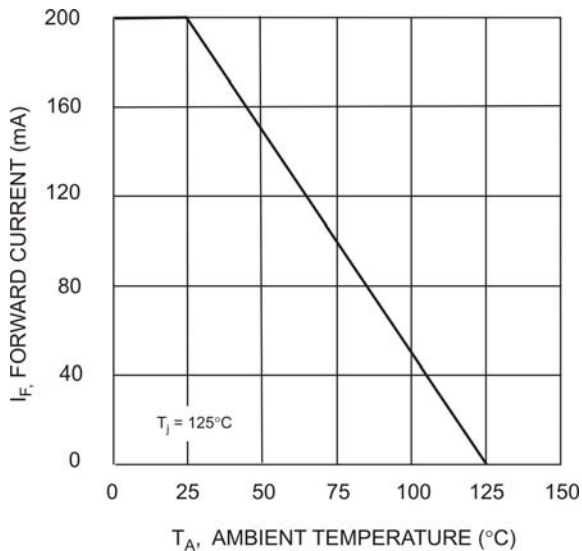


Fig. 1 Forward Current Derating Curve

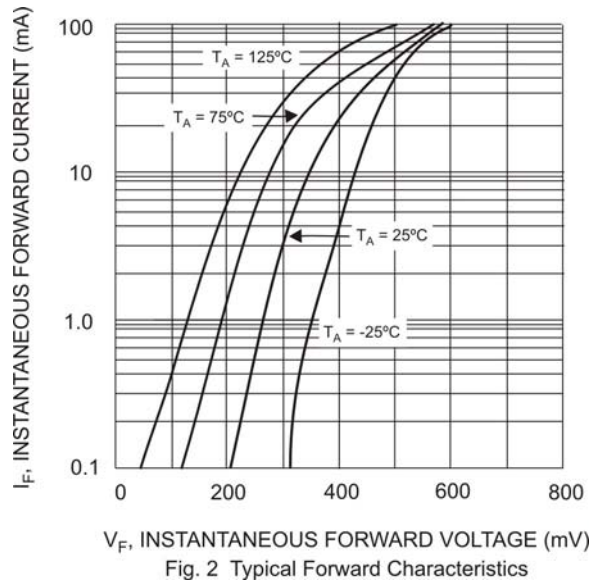


Fig. 2 Typical Forward Characteristics

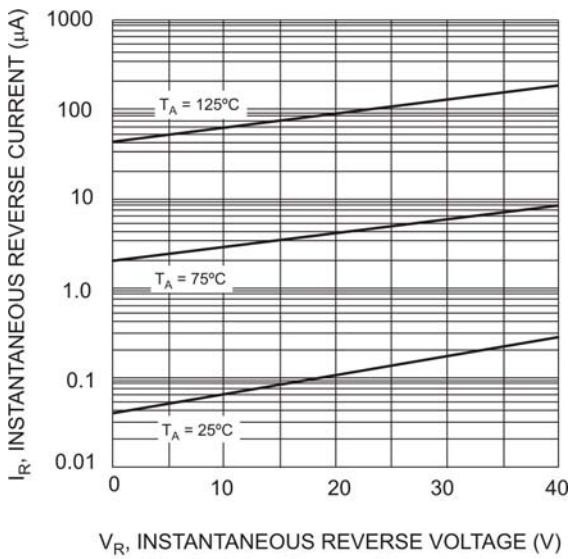


Fig. 3 Typical Reverse Characteristics

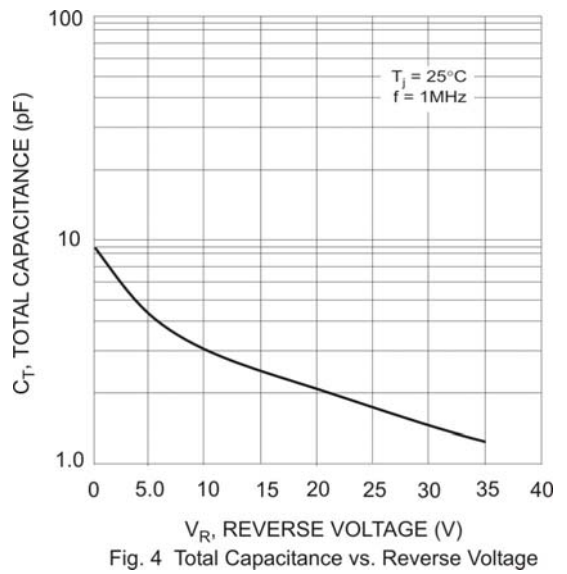


Fig. 4 Total Capacitance vs. Reverse Voltage



## Ordering Information (Note 4)

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

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

## Marking Information



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

### Data Code Key

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	M	N	P	R	S	T	U	V	W	X	Y	Z

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

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