

## BAT42W/BAT43W SURFACE MOUNT SCHOTTKY BARRIER DIODE



### Features

- Low Turn-on Voltage
- Fast Switching
- PN Junction Guard Ring Transient and ESD Protection
- Designed for Surface Mount Application
- Plastic Material —UL Recognition Flammability Classification 94V-0
- Green Products in Compliance with the ROHS Directive
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Circuit Diagram



### Mechanical Data

- Case: SOD-123, Molded Plastic
- Terminals: Plated leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.01 grams(approx.)

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

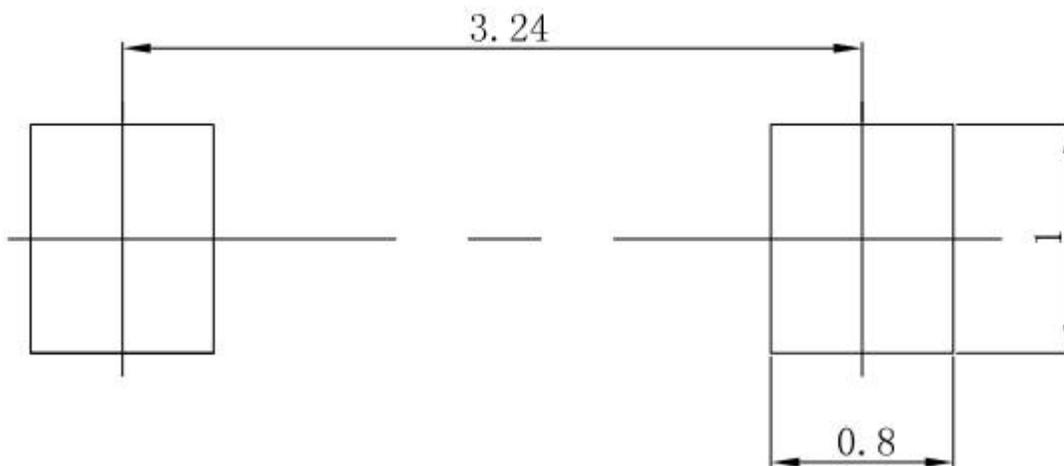
Single Phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Characteristic	Symbol	BAT42W/BAT43W	Units
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	$I_{FM}$	0.2	A
Repetitive Peak Forward Current @ $t < 1.0s$	$I_{FRM}$	500	mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	4.0	A
Power Dissipation	$P_d$	500	mW
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	200	°C/W
Junction Temperature Range	$T_J$	125	°C
Storage Temperature Range	$T_{STG}$	-55 to +150	°C

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

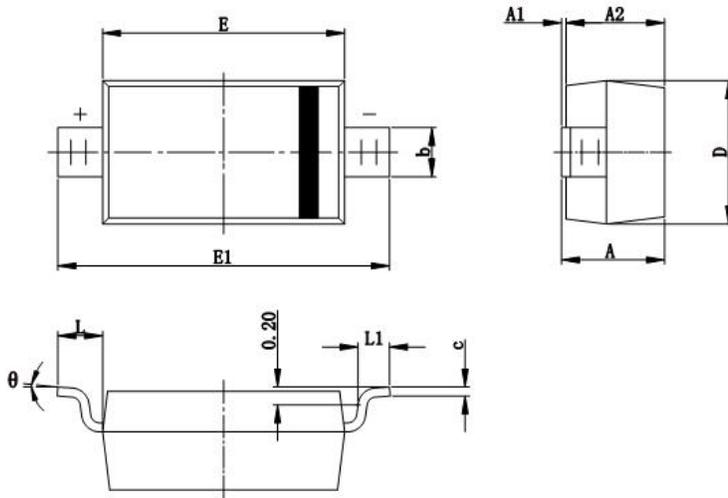
Characteristic	Symbol	Min	Typ	Max	Units	Test Condition
Reverse Breakdown Voltage	$V_{(BR)}$	30	-	-	V	$I_R=10\mu\text{A}$
Forward Voltage	All Types	$V_F$	-	-	1.0	V $I_F=200\text{mA}$
	BAT42W	$V_F$	-	-	0.4	V $I_F=10\text{mA}$
	BAT42W	$V_F$	-	-	0.65	V $I_F=50\text{mA}$
	BAT43W	$V_F$	0.26	-	0.33	V $I_F=2\text{mA}$
	BAT43W	$V_F$	-	-	0.45	V $I_F=15\text{mA}$
Reverse Leakage Current	$I_R$	-	-	0.5	$\mu\text{A}$	$V_R=25\text{V}$
Junction Capacitance	$C_j$	-	-	10	pF	$V_R=1.0\text{V}, f=1.0\text{MHz}$

**SOD-123 Suggested Pad Layout**



- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance:  $\pm 0.05\text{mm}$ .
  3. The pad layout is for reference purposes only.

**Mechanical Dimensions SOD-123**



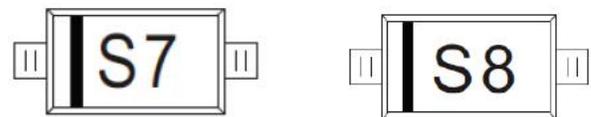
SYMBOL	Millimeters		Inches	
	MIN.	MAX.	MIN.	MAX.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.450	0.650	0.018	0.026
c	0.080	0.150	0.003	0.006
D	1.500	1.700	0.059	0.067
E	2.600	2.800	0.102	0.110
E1	3.550	3.850	0.140	0.152
L	0.500 REF.		0.020 REF.	
L1	0.250	0.450	0.010	0.018
$\theta$	0°	8°	0°	8°

**Ordering Information**

Device	Package	Shipping
BAT42(43)W	SOD-123 (Pb-Free)	3000pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

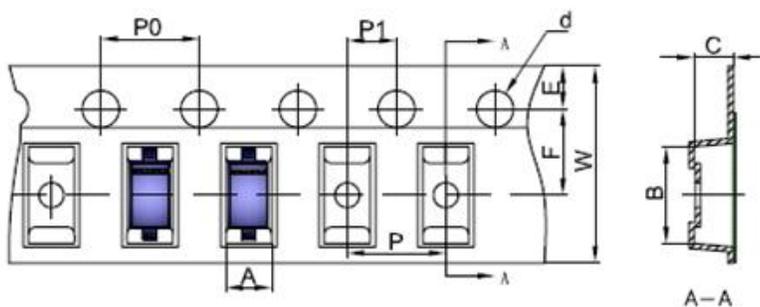
**Marking Diagram**



BAT42W

BAT43W

**Carrier Tape Specification SOD-123**



SYMBOL	Millimeters	
	Min.	Max.
A	1.80	1.90
B	3.89	3.99
C	1.52	1.62
d	1.45	1.65
E	1.65	1.85
F	3.40	3.60
P	3.90	4.10
P0	3.90	4.10
P1	1.90	2.10
W	7.90	8.30

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