

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

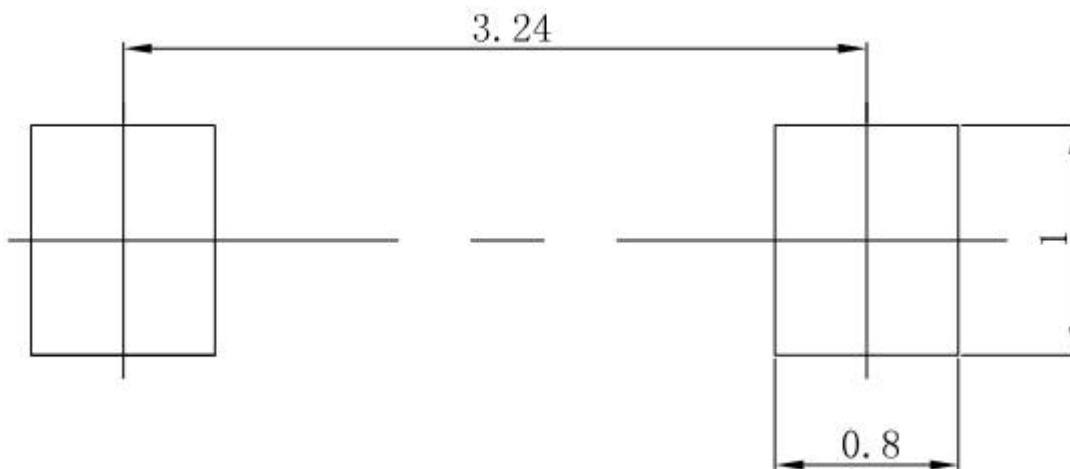
Single Phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

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	$^{\circ}\text{C/W}$
Junction Temperature Range	$T_J$	125	$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^{\circ}\text{C}$

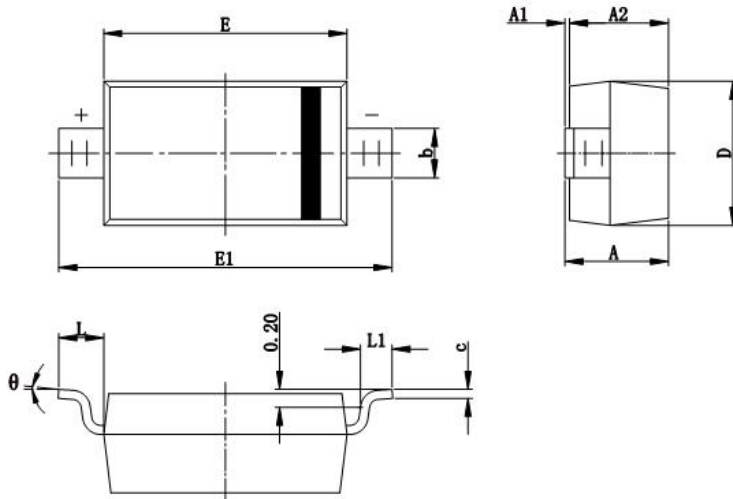
**Electrical Characteristics @T<sub>A</sub>=25°C unless otherwise specified**

Characteristic	Symbol	Min	Typ	Max	Units	Test Condition
Reverse Breakdown Voltage	V <sub>(BR)</sub>	30	-	-	V	I <sub>R</sub> =10μA
Forward Voltage	All Types	V <sub>F</sub>	-	-	1.0	V I <sub>F</sub> =200mA
	BAT42W	V <sub>F</sub>	-	-	0.4	V I <sub>F</sub> =10mA
	BAT42W	V <sub>F</sub>	-	-	0.65	V I <sub>F</sub> =50mA
	BAT43W	V <sub>F</sub>	0.26	-	0.33	V I <sub>F</sub> =2mA
	BAT43W	V <sub>F</sub>	-	-	0.45	V I <sub>F</sub> =15mA
Reverse Leakage Current	I <sub>R</sub>	-	-	0.5	μA	V <sub>R</sub> =25V
Junction Capacitance	C <sub>j</sub>	-	-	10	pF	V <sub>R</sub> =1.0V, f=1.0MHz

**SOD-123 Suggested Pad Layout**



- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance: ±0.05mm.
  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**

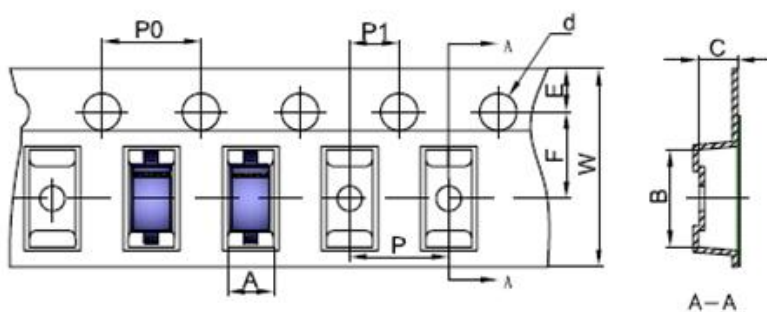
Device	Package	Shipping
BAT42(43)W	SOD-123 (Pb-Free)	3000pcs / reel

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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