

BAT54WS 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

Schematic & Pin Configuration



Mechanical Characteristics

- Case: SOD-323, Molded plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.04 grams(approx)

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

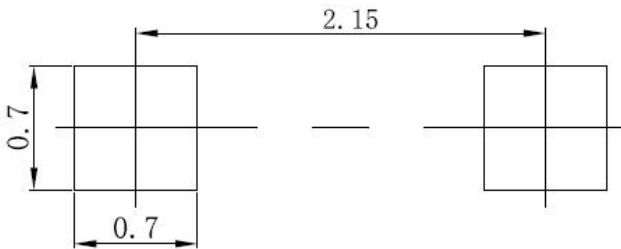
| Characteristic | Symbol | Value | Units |
|--|---------------------------------|-------------|-----------------------------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 30 | V |
| Continuous Forward Current | I_O | 100 | mA |
| Forward Continuous Current | I_{FM} | 200 | mA |
| Repetitive Peak Forward Current @ $t \leq 1\text{s}$, $\delta \leq 0.5$ | I_{FRM} | 300 | mA |
| Non-Repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$ | I_{FSM} | 600 | mA |
| Power Dissipation | P_D | 200 | mW |
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 625 | $^{\circ}\text{C}/\text{W}$ |
| Junction and Storage Temperature Range | T_J, T_{STG} | -55 to +150 | $^{\circ}\text{C}$ |

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

| Characteristics | Symbol | Condition | Min. | Max. | Units |
|-------------------------------|----------|---|------|-----------|---------------|
| Reverse Breakdown Voltage* | V_{BR} | @ $I_{BS}=100\mu\text{A}$ | 30 | - | V |
| Forward Voltage Drop* | V_{F1} | @ 1.0mA, Pulse, $T_J = 25^{\circ}\text{C}$ @ 100mA, Pulse, $T_J = 25^{\circ}\text{C}$ | - | 0.32 1 | V |
| Reverse Current* | I_{R1} | @ $V_R = 25\text{V}$, Pulse, $T_J = 25^{\circ}\text{C}$ | - | 2 | μA |
| Capacitance between terminals | C_T | @ $V_R = 1\text{V}$, $T_c=25$, $f_{SIG} = 1\text{MHz}$ | - | 10 | pF |
| Reverse Recovery Time | t_{rr} | $I_F=10\text{mA}$ $I_R = 10\text{mA}$ $T_J = 25^{\circ}\text{C}$ $I_{rr} = 1\text{mA}$ $R_L=100\Omega$ | - | 5 | ns |

* Pulse width < 300 μs , duty cycle < 2%

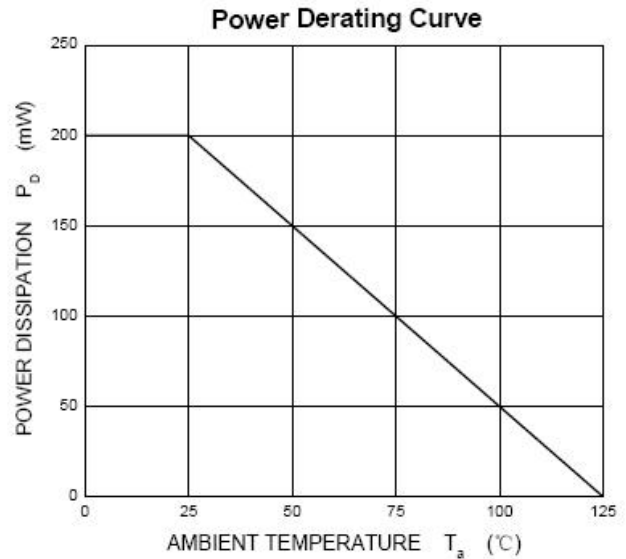
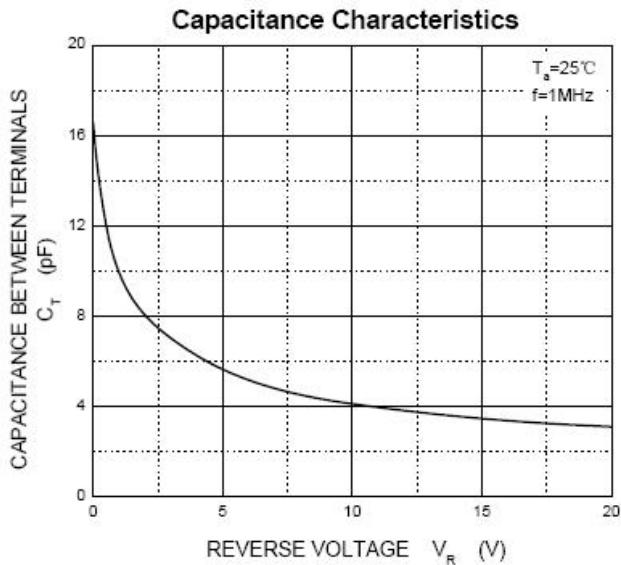
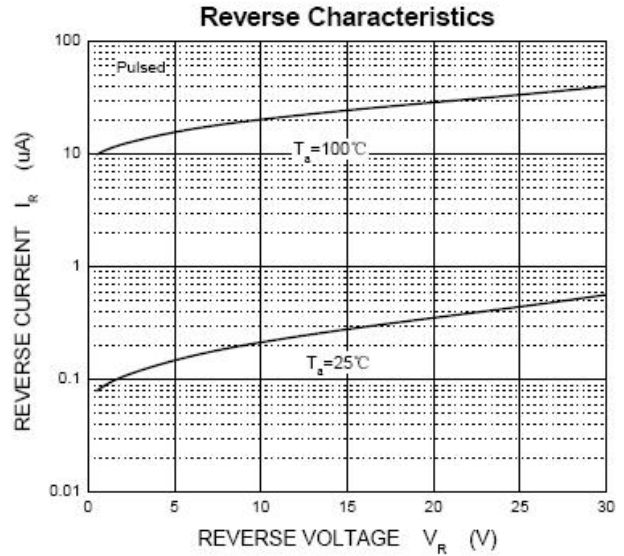
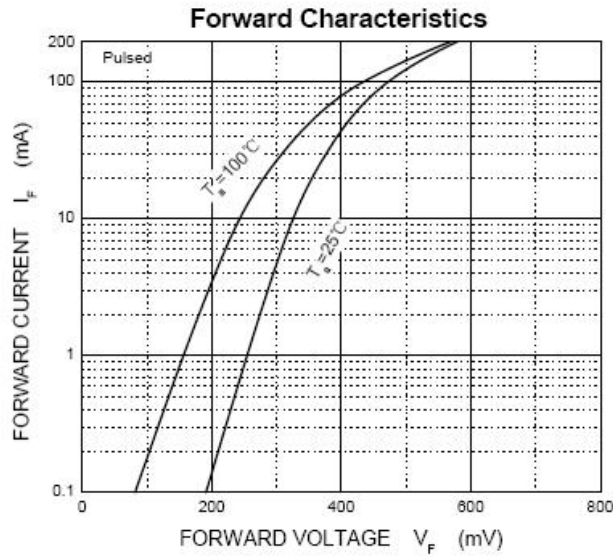
SOD-323 Suggested Pad Layout



Note:

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

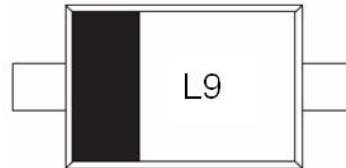
Ratings and Characteristics Curves



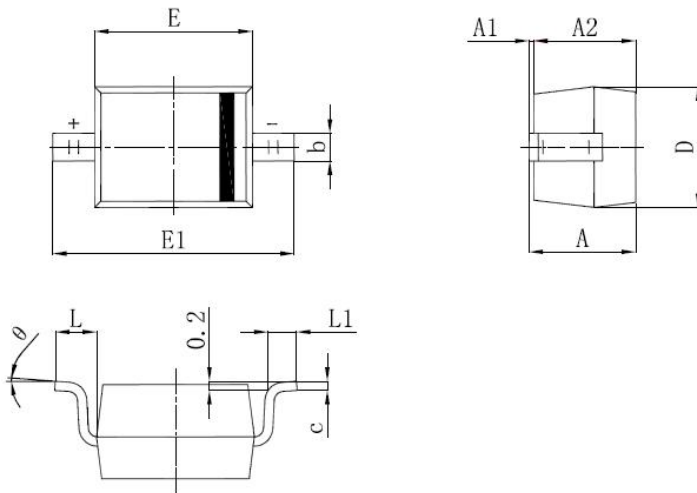
Ordering Information

| Device | Package | Shipping |
|---------|----------------------|----------------|
| BAT54WS | SOD-323 (Pb-Free) | 3000pcs / reel |

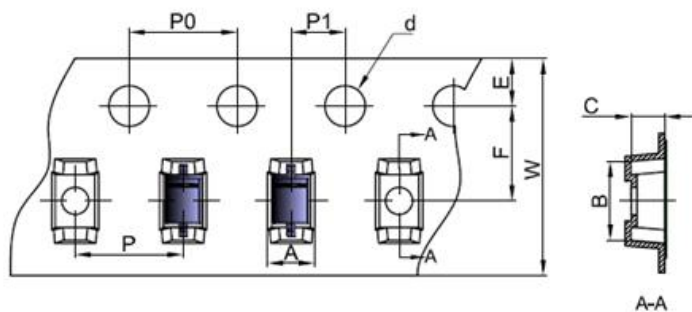
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Marking Diagram


L9 = Marking Code

Mechanical Dimensions SOD-323


| SYMBOL | Millimeters | | Inches | |
|----------|-------------|-------|------------|-------|
| | MIN. | MAX. | MIN. | MAX. |
| A | - | 1.000 | - | 0.039 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.800 | 0.900 | 0.031 | 0.035 |
| b | 0.250 | 0.350 | 0.010 | 0.014 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 1.200 | 1.400 | 0.047 | 0.055 |
| E | 1.600 | 1.800 | 0.063 | 0.071 |
| E1 | 2.500 | 2.700 | 0.098 | 0.106 |
| L | 0.475 REF. | | 0.019 REF. | |
| L1 | 0.250 | 0.400 | 0.010 | 0.016 |
| θ | 0° | 8° | 0° | 8° |

Carrier Tape Specification SOD-323


| SYMB OL | Millimeters | |
|------------|-------------|------|
| | Min. | Max. |
| B | 2.85 | 2.95 |
| C | 1.20 | 1.30 |
| d | 1.40 | 1.60 |
| 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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