

## BAT54W / AW / CW / SW

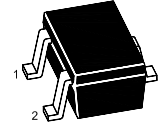
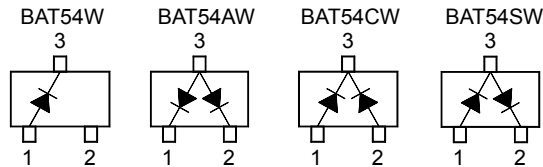
### SURFACE MOUNT SCHOTTKY BARRIER DIODE

#### Features

- Low forward voltage

#### Applications

- Ultra high-speed switching
- Voltage clamping
- Protection circuits



SOT-323 Plastic Package

BAT54W Marking Code: L4  
 BAT54AW Marking Code: L42  
 BAT54CW Marking Code: L43  
 BAT54SW Marking Code: L44

#### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

| Parameter                                   | Symbol     | Value         | Unit                      |
|---|------------|---------------|---------------------------|
| Peak Repetitive Reverse Voltage             | $V_{RRM}$  | 30            | V                         |
| Reverse Voltage                             | $V_R$      | 30            | V                         |
| Forward Current                             | $I_F$      | 200           | mA                        |
| Repetitive Peak Forward Current             | $I_{FRM}$  | 300           | mA                        |
| Peak Forward Surge Current ( $t_p = 10$ ms) | $I_{FSM}$  | 600           | mA                        |
| Total Power Dissipation                     | $P_{tot}$  | 200           | mW                        |
| Thermal Resistance from Junction Ambient    | $R_{thJA}$ | 625           | $^\circ\text{C}/\text{W}$ |
| Junction Temperature                        | $T_J$      | 125           | $^\circ\text{C}$          |
| Storage Temperature Range                   | $T_{stg}$  | - 65 to + 150 | $^\circ\text{C}$          |

#### Characteristics at $T_a = 25^\circ\text{C}$

| Parameter  | Symbol      | Min. | Max.                             | Unit          |
|--|-------------|------|----------------------------------|---------------|
| Forward Voltage<br>at $I_F = 0.1$ mA<br>at $I_F = 1$ mA<br>at $I_F = 10$ mA<br>at $I_F = 30$ mA<br>at $I_F = 100$ mA | $V_F$       | -    | 240<br>320<br>400<br>500<br>1000 | mV            |
| Reverse Breakdown Voltage<br>at $I_R = 100$ $\mu\text{A}$  | $V_{(BR)R}$ | 30   | -                                | V             |
| Reverse Current<br>at $V_R = 25$ V   | $I_R$       | -    | 2                                | $\mu\text{A}$ |
| Total Capacitance<br>at $V_R = 1$ V, $f = 1$ MHz   | $C_T$       | -    | 10                               | pF            |
| Reverse Recovery Time<br>at $I_F = 10$ mA through $I_R = 10$ mA to $I_R = 1$ mA, $R_L = 100$ $\Omega$                | $t_{rr}$    | -    | 5                                | ns            |



# BAT54W / AW / CW / SW

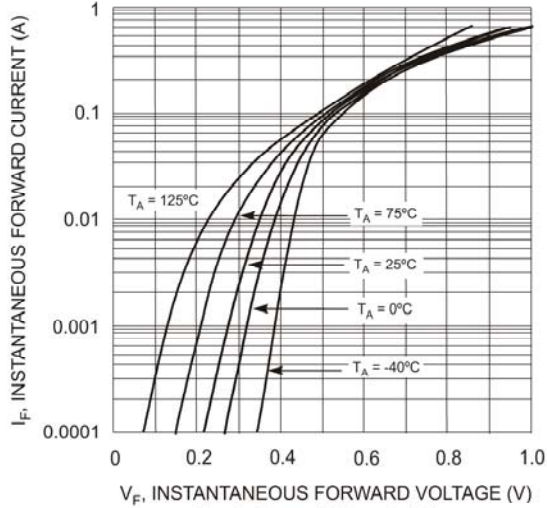


Fig. 1 Forward Characteristics

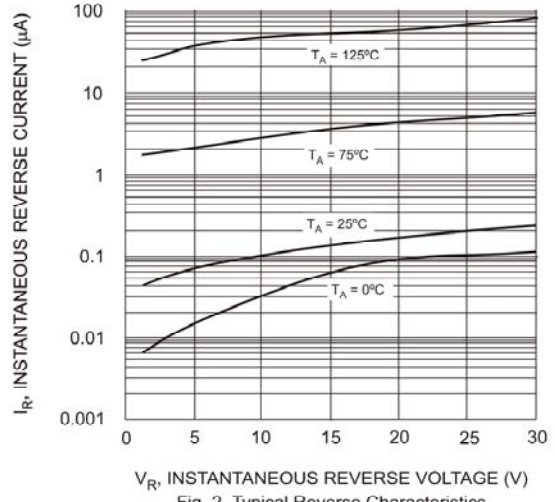


Fig. 2 Typical Reverse Characteristics

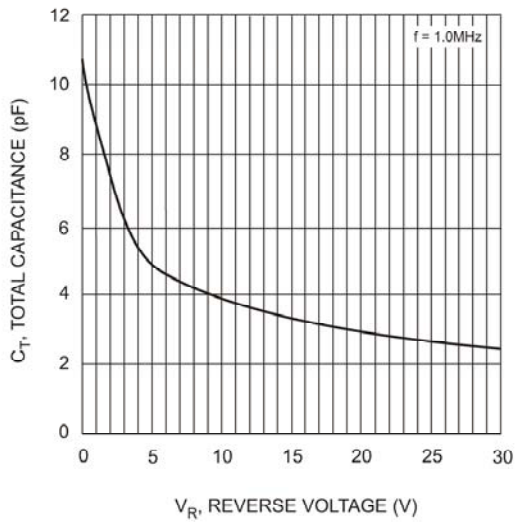


Fig. 3 Typical Capacitance vs. Reverse Voltage

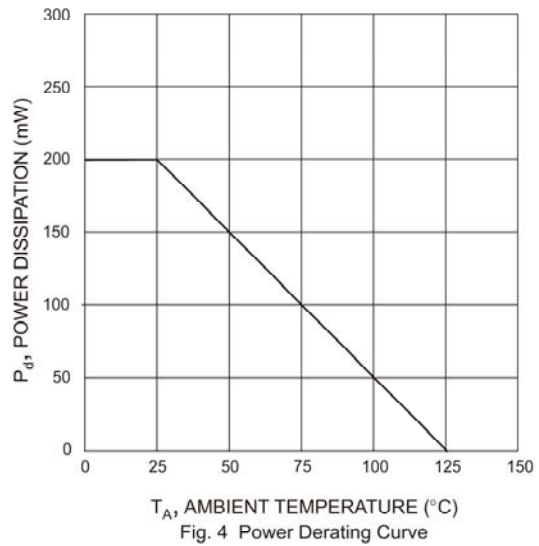
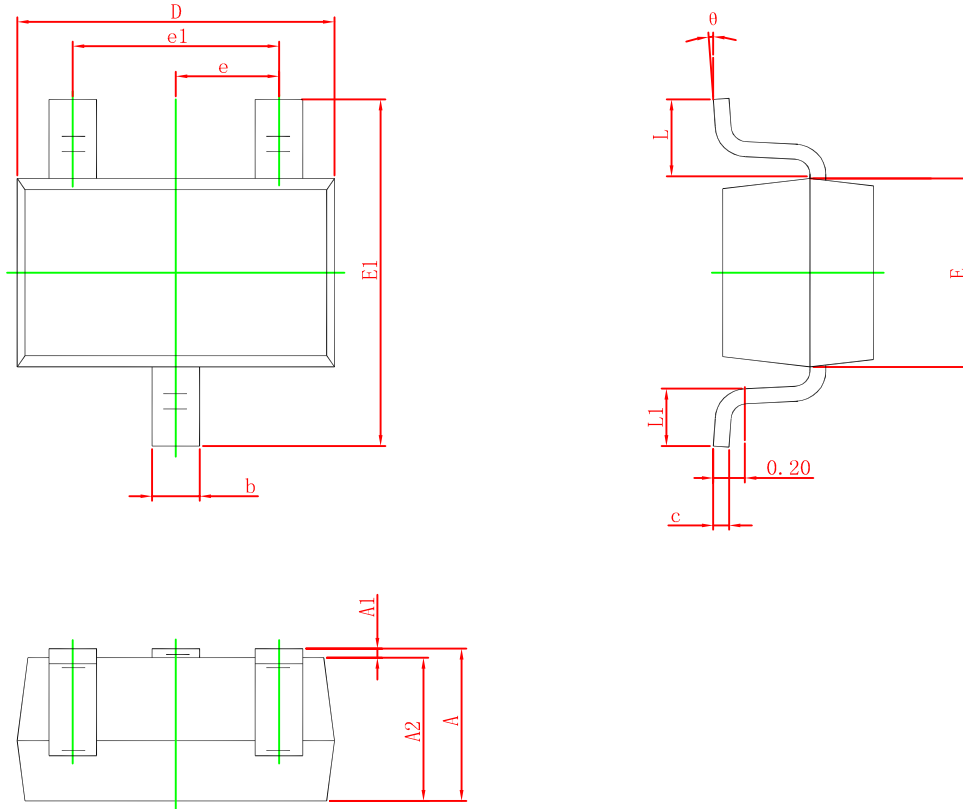


Fig. 4 Power Derating Curve



## SOT-323 PACKAGE OUTLINE DIMENSIONS



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min.                      | Max.  | Min.                 | Max.  |
| A      | 0.900                     | 1.100 | 0.035                | 0.043 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.000 | 0.035                | 0.039 |
| b      | 0.200                     | 0.400 | 0.008                | 0.016 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 2.000                     | 2.200 | 0.079                | 0.087 |
| E      | 1.150                     | 1.350 | 0.045                | 0.053 |
| E1     | 2.150                     | 2.450 | 0.085                | 0.096 |
| e      | 0.650 TYP.                |       | 0.026 TYP.           |       |
| e1     | 1.200                     | 1.400 | 0.047                | 0.055 |
| L      | 0.525 REF.                |       | 0.021 REF.           |       |
| L1     | 0.260                     | 0.460 | 0.010                | 0.018 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |

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