

## SOT-523 Plastic-Encapsulate Diodes

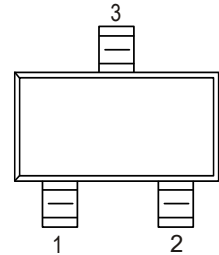
**BAT54T/AT/CT/ST** SCHOTTKY BARRIER DIODE

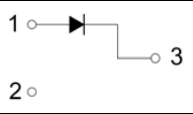
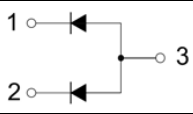
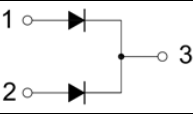
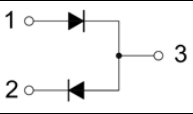
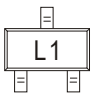
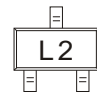
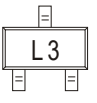
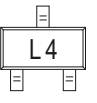
**SOT-523**

**RoHS**  
COMPLIANT

### Features

- Low Forward Voltage Drop
- Fast Switching
- PN Junction Guard Ring for Transient and ESD Protection



| BAT54T                                                                             | BAT54AT                                                                            | BAT54CT                                                                            | BAT54ST                                                                             |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|   |   |   |   |
| MARKING:L1                                                                         | MARKING:L2                                                                         | MARKING:L3                                                                         | MARKING:L4                                                                          |
|  |  |  |  |

### Maximum Ratings @Ta=25°C

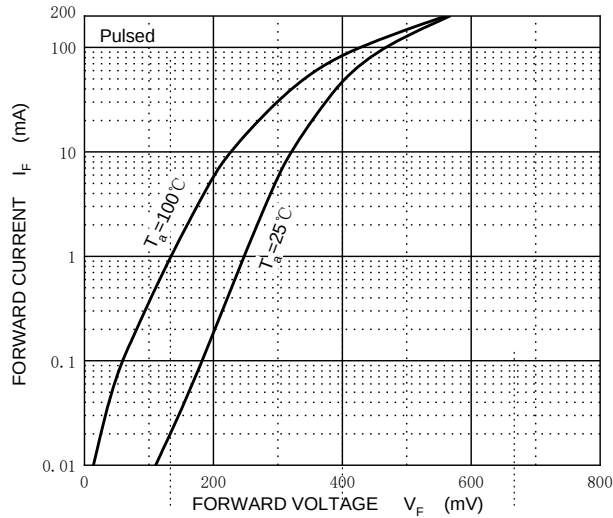
| Parameter                                           | Symbol  | Limit      | Unit |
|-----------------------------------------------------|---------|------------|------|
| Peak Repetitive Reverse Voltage                     | VRRM    | 30         | V    |
| Working Peak Reverse Voltage                        | VRWM    |            |      |
| RMS Reverse Voltage                                 | VR(RMS) | 21         | V    |
| Continuous Forward Current                          | IO      | 0.2        | A    |
| Non-repetitive Peak forward surge current @ t=8.3ms | IFSM    | 600        | mA   |
| Repetitive Peak Forward Surge Current @ t≤1s; δ≤0.5 | IFRM    | 300        | mA   |
| Power dissipation                                   | PD      | 250        | mW   |
| Thermal Resistance Junction to Ambient              | RθJA    | 400        | °C/W |
| Operating Junction Temperature Range                | Tj      | -40 ~ +125 | °C   |
| Storage Temperature Range                           | Tstg    | -55 ~ +150 | °C   |

### ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

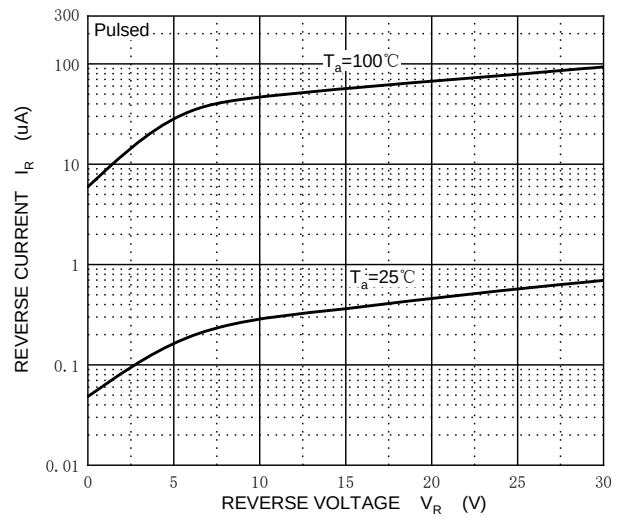
| Parameter             | Symbol            | Test conditions                                                                                  | Min | Typ | Max  | Unit |
|-----------------------|-------------------|--------------------------------------------------------------------------------------------------|-----|-----|------|------|
| Reverse voltage       | V <sub>(BR)</sub> | I <sub>R</sub> =100μA                                                                            | 30  |     |      | V    |
| Reverse current       | I <sub>R</sub>    | V <sub>R</sub> =25V                                                                              |     |     | 2    | μA   |
| Forward voltage       | V <sub>F</sub>    | I <sub>F</sub> =1mA                                                                              |     |     | 0.32 | V    |
|                       |                   | I <sub>F</sub> =10mA                                                                             |     |     | 0.4  |      |
|                       |                   | I <sub>F</sub> =30mA                                                                             |     |     | 0.5  |      |
|                       |                   | I <sub>F</sub> =100mA                                                                            |     |     | 1    |      |
| Total capacitance     | C <sub>tot</sub>  | V <sub>R</sub> =1V, f=1MHz                                                                       |     |     | 10   | pF   |
| Reverse recovery time | t <sub>rr</sub>   | I <sub>F</sub> =I <sub>R</sub> =10mA, I <sub>rr</sub> =0.1xI <sub>R</sub> , R <sub>L</sub> =100Ω |     |     | 5    | nS   |

## Typical Characteristics

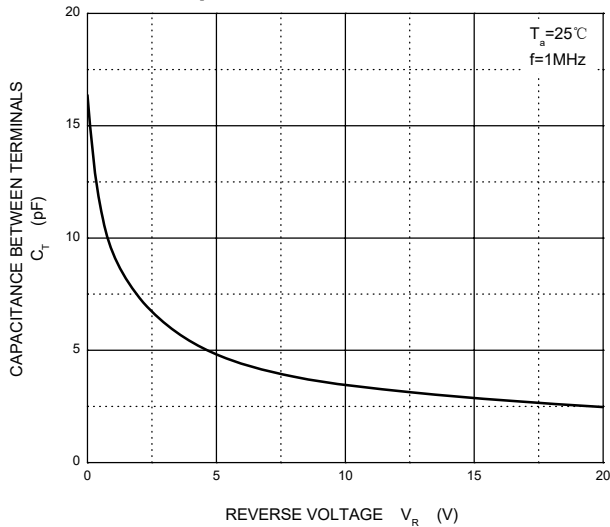
### Forward Characteristics



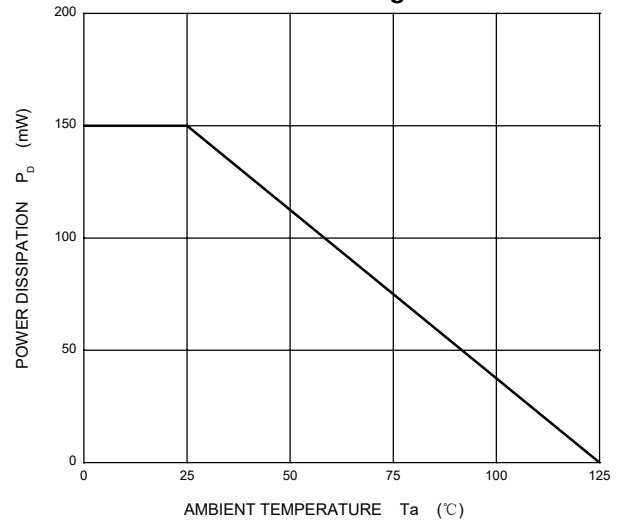
### Reverse Characteristics



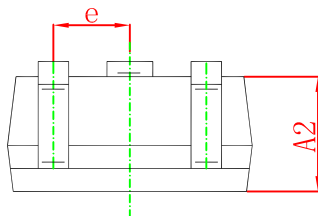
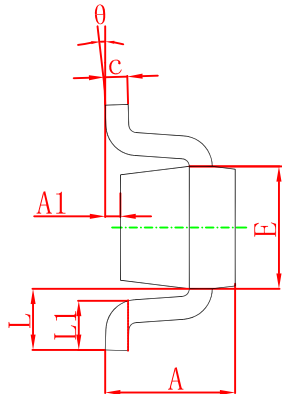
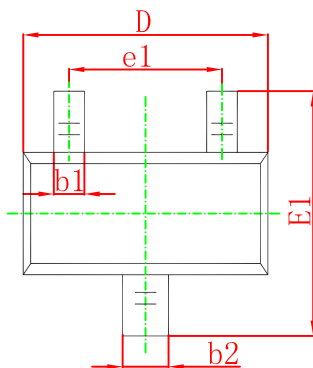
### Capacitance Characteristics



### Power Derating Curve

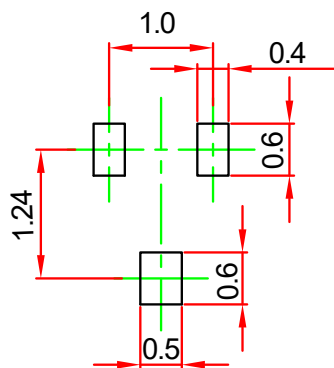


## SOT-523 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min.                      | Max.  | Min.                 | Max.  |
| A      | 0.600                     | 0.950 | 0.024                | 0.037 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.700                     | 0.800 | 0.028                | 0.031 |
| b1     | 0.150                     | 0.250 | 0.006                | 0.010 |
| b2     | 0.150                     | 0.350 | 0.006                | 0.014 |
| c      | 0.100                     | 0.250 | 0.004                | 0.010 |
| D      | 1.400                     | 1.800 | 0.055                | 0.071 |
| E      | 0.700                     | 0.900 | 0.028                | 0.035 |
| E1     | 1.450                     | 1.750 | 0.057                | 0.069 |
| e      | 0.500 TYP.                |       | 0.020 TYP.           |       |
| e1     | 0.900                     | 1.100 | 0.035                | 0.043 |
| L      | 0.400 REF.                |       | 0.016 REF.           |       |
| L1     | 0.150                     | 0.450 | 0.006                | 0.018 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |

## SOT-523 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.