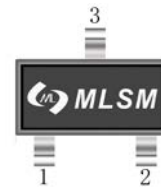
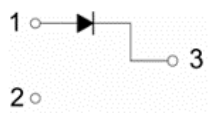
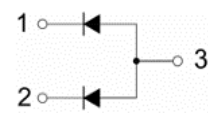
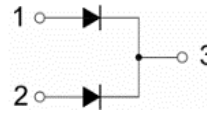
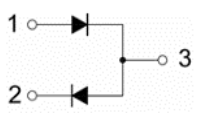
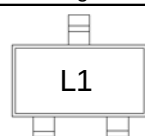
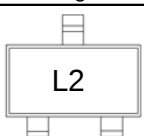
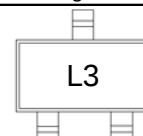


## Features

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



SOT-523 top view

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



Halogen-Free

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

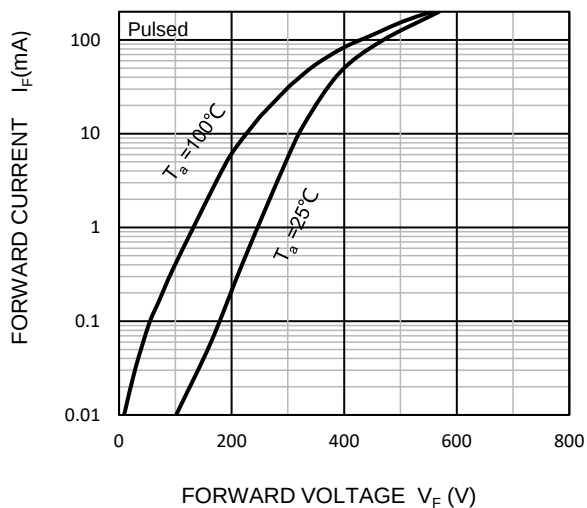
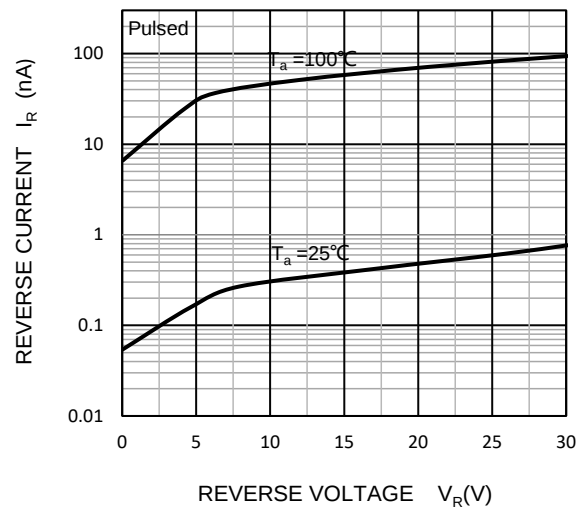
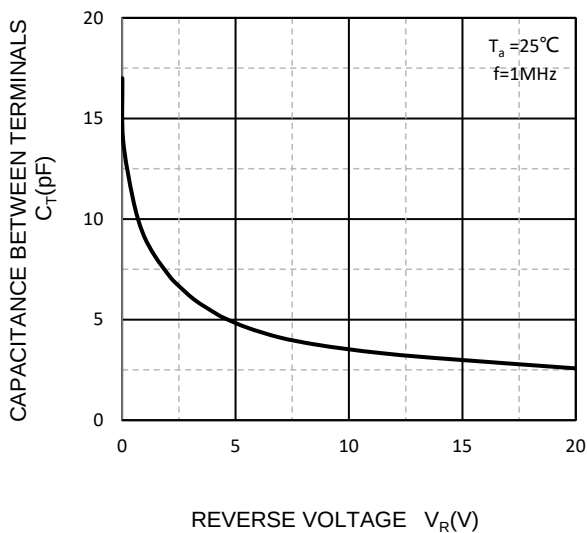
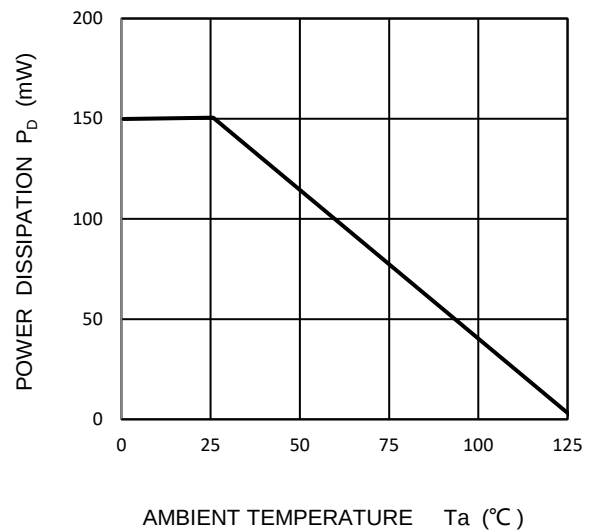
| Symbol          | Parameter                                                                   | Limit     | Unit                 |
|-----------------|-----------------------------------------------------------------------------|-----------|----------------------|
| $V_{RRM}$       | Peak Repetitive Peak Reverse Voltage                                        | 30        | V                    |
| $V_{RWM}$       | Working Peak Reverse Voltage                                                |           |                      |
| $V_{R(RMS)}$    | RMS Reverse Voltage                                                         | 21        | V                    |
| $I_O$           | Average Rectified Output Current                                            | 0.2       | A                    |
| $I_{FSM}$       | Non-repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$                | 600       | mA                   |
| $I_{FRM}$       | Repetitive Peak Forward Surge Current @ $t \leq 1\text{s}; \delta \leq 0.5$ | 300       | mA                   |
| $P_D$           | Power Dissipation                                                           | 150       | mW                   |
| $R_{\theta JA}$ | Thermal Resistance Junction to Ambient                                      | 667       | $^{\circ}\text{C/W}$ |
| $T_J$           | Operating Junction Temperature Range                                        | -40~ +125 | $^{\circ}\text{C}$   |
| $T_{STG}$       | Operation Junction and Storage Temperature Range                            | -55~ +150 | $^{\circ}\text{C}$   |

## ELECTRICAL CHARACTERISTICS( $T_a=25^{\circ}\text{C}$ unless otherwise specified)

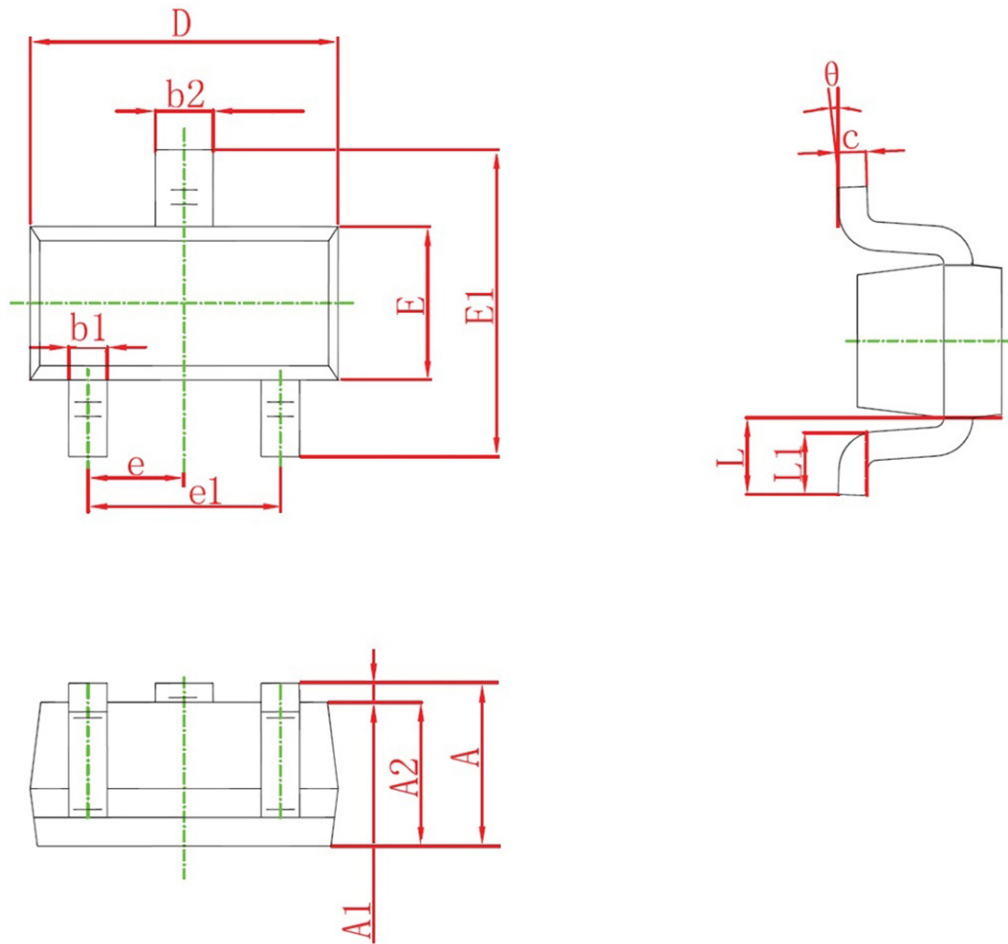
| Symbol     | Parameter                     | Condition                                           | Min | Typ | Max  | Unit          |
|------------|-------------------------------|-----------------------------------------------------|-----|-----|------|---------------|
| $V_{(BR)}$ | Reverse breakdown voltage     | $I_R=100\mu\text{A}$                                | 30  | --  | --   | V             |
| $V_F$      | Forward voltage               | $I_F=1\text{mA}$                                    | --  | --  | 0.32 | V             |
|            |                               | $I_F=10\text{mA}$                                   | --  | --  | 0.4  |               |
|            |                               | $I_F=30\text{mA}$                                   | --  | --  | 0.5  |               |
|            |                               | $I_F=100\text{mA}$                                  | --  | --  | 1    |               |
| $I_R$      | Reverse current               | $V_R=25\text{V}$                                    | --  | --  | 2    | $\mu\text{A}$ |
| $C_T$      | Capacitance between terminals | $V_R=0\text{V}, f=1\text{MHz}$                      | --  | --  | 10   | pF            |
| $t_{rr}$   | Reverse recovery time         | $I_F=I_R=10\text{mA}, I_{rr}=0.1I_R, R_L=100\Omega$ | --  | --  | 5    | ns            |

**Ordering Information (Example)**

| Type    | Package | Marking | Minimum Package(pcs) | Inner Box Quantity(pcs) | Outer Carton Quantity(pcs) | Delivery Mode |
|---------|---------|---------|----------------------|-------------------------|----------------------------|---------------|
| BAT54T  | SOT-523 | L1      | 3,000                | 45,000                  | 180,000                    | 7"reel        |
| BAT54AT | SOT-523 | L2      | 3,000                | 45,000                  | 180,000                    | 7"reel        |
| BAT54CT | SOT-523 | L3      | 3,000                | 45,000                  | 180,000                    | 7"reel        |
| BAT54ST | SOT-523 | L4      | 3,000                | 45,000                  | 180,000                    | 7"reel        |

**Typical Operating Characteristics**
**Forward Characteristics**

**Reverse Characteristics**

**Capacitance Characteristics**

**Power Derating Curve**


**SOT-523 Package information**



| Symbol | Dimensions in Millimeters(mm) |       | Dimensions In Inches |       |
|--------|-------------------------------|-------|----------------------|-------|
|        | Min                           | Max   | Min                  | Max   |
| A      | 0.700                         | 0.900 | 0.028                | 0.035 |
| 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     | 0.250                         | 0.350 | 0.010                | 0.014 |
| c      | 0.100                         | 0.200 | 0.004                | 0.008 |
| D      | 1.500                         | 1.700 | 0.059                | 0.067 |
| E      | 0.700                         | 0.900 | 0.028                | 0.035 |
| E1     | 1.450                         | 1.750 | 0.057                | 0.069 |
| e      | 0.500TYP                      |       | 0.020TYP             |       |
| e1     | 0.900                         | 1.100 | 0.035                | 0.043 |
| L      | 0.400REF                      |       | 0.016REF             |       |
| L1     | 0.260                         | 0.460 | 0.010                | 0.018 |
| θ      | 0°                            | 8°    | 0°                   | 8°    |