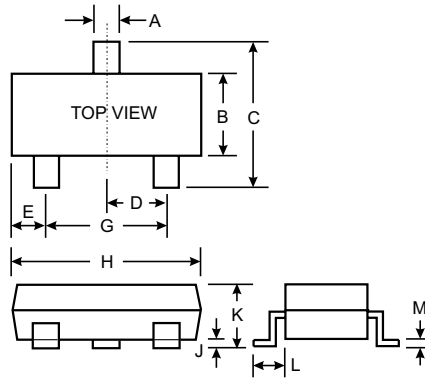


### Features

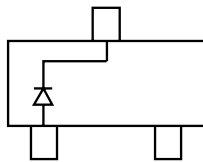
- Low Forward Voltage Drop
- Fast Switching
- Ultra-Small Surface Mount Package
- PN Junction Guard Ring for Transient and ESD Protection

### Mechanical Data

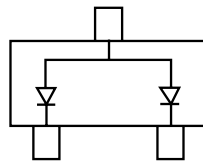
- Case: SOT-323, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagrams Below
- Weight: 0.006 grams (approx.)
- Mounting Position: Any



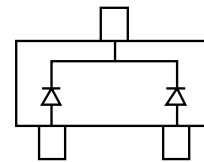
| SOT-323              |              |      |
|----------------------|--------------|------|
| Dim                  | Min          | Max  |
| A                    | 0.30         | 0.40 |
| B                    | 1.15         | 1.35 |
| C                    | 2.00         | 2.20 |
| D                    | 0.65 Nominal |      |
| E                    | 0.30         | 0.40 |
| G                    | 1.20         | 1.40 |
| H                    | 1.80         | 2.20 |
| J                    | 0.0          | 0.10 |
| K                    | 0.90         | 1.00 |
| L                    | 0.25         | 0.40 |
| M                    | 0.10         | 0.25 |
| All Dimensions in mm |              |      |



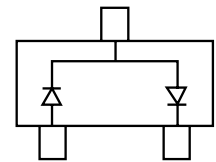
BAT54W Marking: KL5



BAT54AW Marking: KL6



BAT54CW Marking: KL7



BAT54SW Marking: KL8

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

| Characteristic                                                                         | Symbol                          | Value       | Unit             |
|----------------------------------------------------------------------------------------|---------------------------------|-------------|------------------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 30          | V                |
| Forward Continuous Current (Note 1)                                                    | $I_F$                           | 200         | mA               |
| Repetitive Peak Forward Current (Note 1)                                               | $I_{FRM}$                       | 300         | mA               |
| Forward Surge Current (Note 1) @ $t < 1.0\text{s}$                                     | $I_{FSM}$                       | 600         | mA               |
| Power Dissipation (Note 1)                                                             | $P_d$                           | 200         | mW               |
| Thermal Resistance, Junction to Ambient Air (Note 1)                                   | $R_{\theta JA}$                 | 625         | K/W              |
| Operating and Storage Temperature Range                                                | $T_J, T_{STG}$                  | -65 to +125 | $^\circ\text{C}$ |

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

| Characteristic                   | Symbol      | Min | Typ | Max                              | Unit          | Test Condition                                                                                                   |
|----------------------------------|-------------|-----|-----|----------------------------------|---------------|------------------------------------------------------------------------------------------------------------------|
| Reverse Breakdown Voltage        | $V_{(BR)R}$ | 30  | —   | —                                | V             | $I_{RS} = 100\mu\text{A}$                                                                                        |
| Forward Voltage (Note 2)         | $V_F$       | —   | —   | 240<br>320<br>400<br>500<br>1000 | mV            | $I_F = 0.1\text{mA}$<br>$I_F = 1\text{mA}$<br>$I_F = 10\text{mA}$<br>$I_F = 30\text{mA}$<br>$I_F = 100\text{mA}$ |
| Reverse Leakage Current (Note 2) | $I_R$       | —   | —   | 2.0                              | $\mu\text{A}$ | $V_R = 25\text{V}$                                                                                               |
| Junction Capacitance             | $C_j$       | —   | —   | 10                               | pF            | $V_R = 1.0\text{V}, f = 1.0\text{MHz}$                                                                           |
| Reverse Recovery Time            | $t_{rr}$    | —   | —   | 5.0                              | ns            | $I_F = 10\text{mA}$ through $I_R = 10\text{mA}$ to $I_R = 1.0\text{mA}$ , $R_L = 100\Omega$                      |

- Notes:
1. Valid Provided that terminals are kept at ambient temperature.
  2.  $t_p < 300\mu\text{s}$ , duty cycle  $< 2\%$