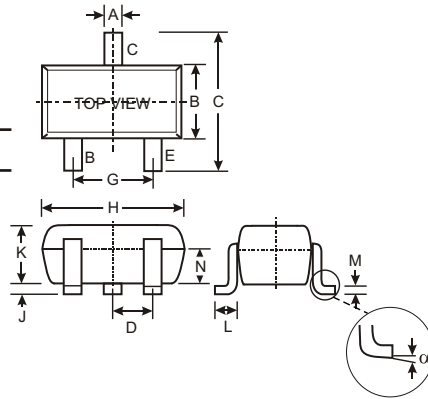


### Features

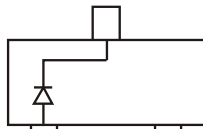
- Ultra-Small Surface Mount Package
- Low Forward Voltage Drop
- Fast Switching
- PN Junction Guard Ring for Transient and ESD Protection

### Mechanical Data

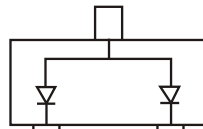
- Case: SOT-523, Molded Plastic
- Case material - UL Flammability Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagrams Below
- Marking: See Diagrams Below & Page 2
- Weight: 0.002 grams (approx.)
- Ordering Information, see Page 2



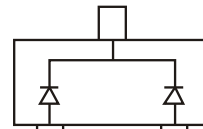
| SOT-523              |      |      |      |
|----------------------|------|------|------|
| Dim                  | Min  | Max  | Typ  |
| A                    | 0.15 | 0.30 | 0.22 |
| B                    | 0.75 | 0.85 | 0.80 |
| C                    | 1.45 | 1.75 | 1.60 |
| D                    |      |      | 0.50 |
| G                    | 0.90 | 1.10 | 1.00 |
| H                    | 1.50 | 1.70 | 1.60 |
| J                    | 0.00 | 0.10 | 0.05 |
| K                    | 0.60 | 0.80 | 0.75 |
| L                    | 0.10 | 0.30 | 0.22 |
| M                    | 0.10 | 0.20 | 0.12 |
| N                    | 0.45 | 0.65 | 0.50 |
|                      | 0    | 8    |      |
| All Dimensions in mm |      |      |      |



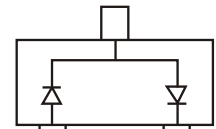
BAT54T Marking: L1



BAT54AT Marking: L2



BAT54CT Marking: L3



BAT54ST Marking: L4

### Maximum Ratings @ T<sub>A</sub> = 25 C unless otherwise specified

| Characteristic                                   | Symbol                            | Value       | Unit |
|--|-----------------------------------|-------------|------|
| Peak Repetitive Reverse Voltage                  | V <sub>RRM</sub>                  | 30          | V    |
| Working Peak Reverse Voltage                     | V <sub>RWM</sub>                  |             |      |
| DC Blocking Voltage                              | V <sub>R</sub>                    |             |      |
| Forward Continuous Current (Note 1)              | I <sub>FM</sub>                   | 200         | mA   |
| Repetitive Peak Forward Current                  | I <sub>FRM</sub>                  | 300         | mA   |
| Forward Surge Current @ t < 1.0s                 | I <sub>FSM</sub>                  | 600         | mA   |
| Power Dissipation (Note 1)                       | P <sub>d</sub>                    | 150         | mW   |
| Thermal Resistance, Junction to Ambient (Note 1) | R <sub>JA</sub>                   | 833         | °C/W |
| Operating and Storage Temperature Range          | T <sub>j</sub> , T <sub>STG</sub> | -65 to +125 | C    |

### Electrical Characteristics @ T<sub>A</sub> = 25 C unless otherwise specified

| Characteristic                     | Symbol             | Min | Typ | Max                              | Unit | Test Condition   |
|------------------------------------|--------------------|-----|-----|----------------------------------|------|--|
| Reverse Breakdown Voltage (Note 2) | V <sub>(BR)R</sub> | 30  |     |                                  | V    | I <sub>R</sub> = 100 A   |
| Forward Voltage (Note 2)           | V <sub>F</sub>     |     |     | 240<br>320<br>400<br>500<br>1000 | mV   | I <sub>F</sub> = 0.1mA<br>I <sub>F</sub> = 1mA<br>I <sub>F</sub> = 10mA<br>I <sub>F</sub> = 30mA<br>I <sub>F</sub> = 100mA |
| Reverse Leakage Current (Note 2)   | I <sub>R</sub>     |     |     | 2.0                              | A    | V <sub>R</sub> = 25V   |
| Total Capacitance                  | C <sub>T</sub>     |     |     | 10                               | pF   | V <sub>R</sub> = 1.0V, f = 1.0MHz  |
| Reverse Recovery Time              | t <sub>rr</sub>    |     |     | 5.0                              | ns   | I <sub>F</sub> = 10mA through I <sub>R</sub> = 10mA to I <sub>R</sub> = 1.0mA, R <sub>L</sub> = 100                        |

- Notes: 1. Device mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.  
2. Short duration test pulse used to minimize self-heating effect.

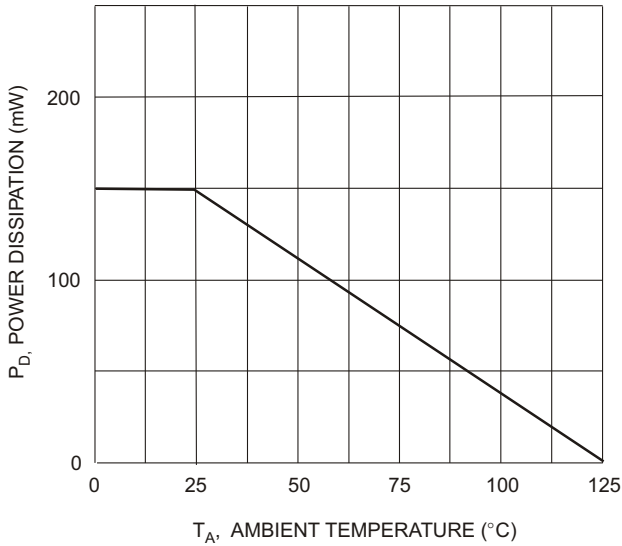


Fig. 1 Power Derating Curve

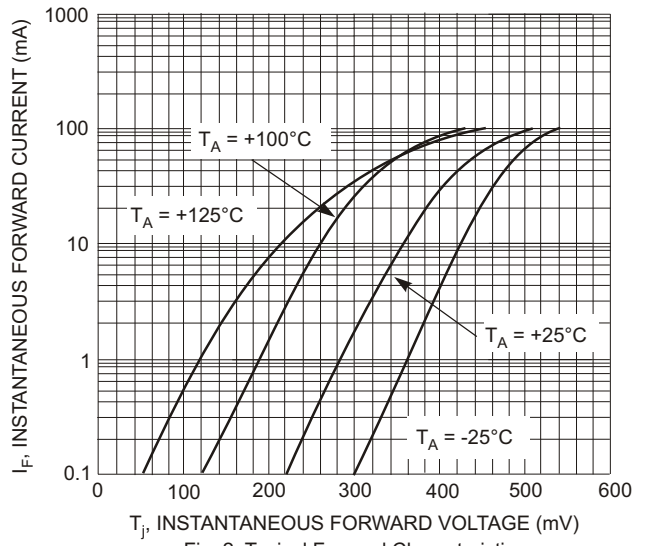


Fig. 2, Typical Forward Characteristics

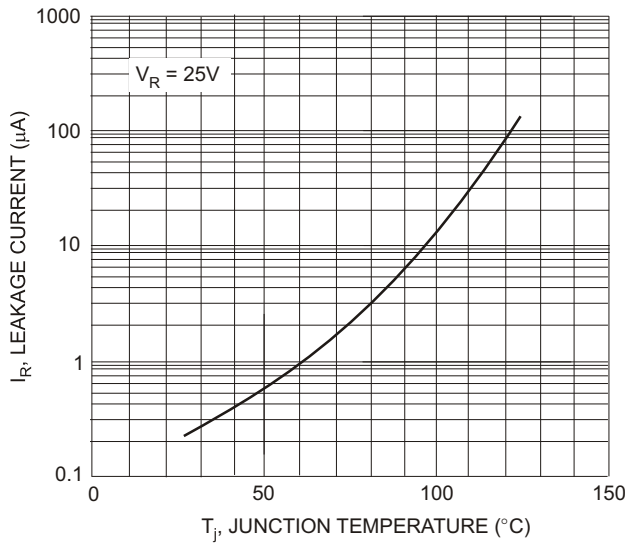


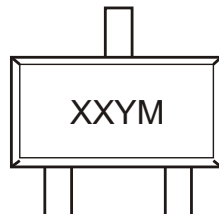
Fig. 3, Typical Reverse Characteristics

**Ordering Information** (Note 3)

| Device    | Packaging | Shipping         |
|-----------|-----------|------------------|
| BAT54T-7  | SOT-523   | 3000/Tape & Reel |
| BAT54AT-7 | SOT-523   | 3000/Tape & Reel |
| BAT54CT-7 | SOT-523   | 3000/Tape & Reel |
| BAT54ST-7 | SOT-523   | 3000/Tape & Reel |

Notes: 3. For Packaging Details: go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



XX = Product Type Marking Code (See Page 1, e.g. L1 = BAT54T)  
 YM = Date Code Marking  
 Y = Year (ex: N = 2002)  
 M = Month (ex: 9 = September)

Date Code Key

| Year | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|------|------|------|
| Code | N    | P    | R    | S    | T    | U    | V    | W    |

| Month | Jan | Feb | March | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code  | 1   | 2   | 3     | 4   | 5   | 6   | 7   | 8   | 9   | O   | N   | D   |