

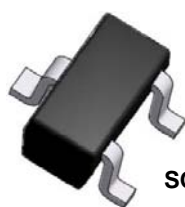


August 2015

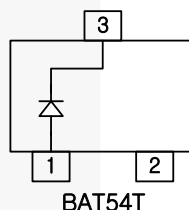
## BAT54T / BAT54ST Schottky Barrier Diode

### Features

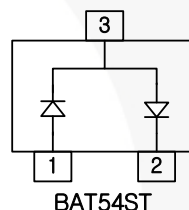
- Low Forward Voltage Drop
- Surface Mount Device at 0.95 mm Maximum Height
- MSL 1 per J-STD-020
- Pb Free and RoHS Compliant
- Matte Sn Lead Finish
- Green Mold Compound



SOT-523



BAT54T



BAT54ST

### Ordering Information

Part Number	Top Mark	Package	Packing Method
BAT54T	L1	SOT-523 3L	Tape and Reel
BAT54ST	L4	SOT-523 3L	Tape and Reel

### Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Value	Unit
$V_{RRM}$	Maximum Repetitive Reverse Voltage	30	V
$I_{F(AV)}$	Average Rectified Forward Current	200	mA
$T_J$	Operating Junction Temperature	125	$^\circ\text{C}$
$T_{STG}$	Storage Temperature Range	-55 to +125	$^\circ\text{C}$

**Thermal Characteristics<sup>(1)</sup>**

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Value	Unit
$P_D$	Power Dissipation	150	mW
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	500	$^\circ\text{C/W}$
$\Psi_{JL}$	Junction-to-Lead Thermal Characteristics, Thermocouple Soldered to Cathode	165	$^\circ\text{C/W}$

**Note:**

1. Device mounted on FR-4 PCB minimum land pad

**Electrical Characteristics**

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted. Parameters are tested per individual diode.

Symbol	Parameter	Conditions	Min.	Max.	Unit
$BV_R$	Reverse Breakdown Voltage	$I_R = 100\ \mu\text{A}$	30		V
$I_R$	Reverse Leakage Current	$V_R = 25\ \text{V}$		2	$\mu\text{A}$
$V_F$	Forward Voltage	$I_F = 0.1\ \text{mA}$		0.24	V
		$I_F = 1\ \text{mA}$		0.32	
		$I_F = 10\ \text{mA}$		0.40	
		$I_F = 30\ \text{mA}$		0.50	
		$I_F = 100\ \text{mA}$		1.00	
$C_T$	Total Capacitance	$V_R = 1\ \text{V}, f = 1\ \text{MHz}$		10	pF
$t_{rr}$	Reverse Recovery Time	$I_F = I_R = 10\ \text{mA}, I_{RR} = 0.1 \times I_R$ $R_L = 100\ \Omega$		5	ns

## Typical Performance Characteristics

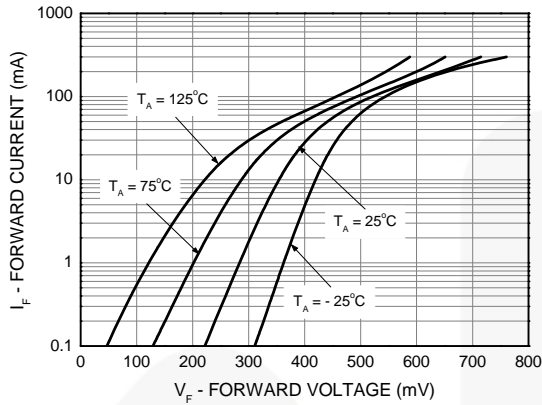


Figure 1. Forward Current vs. Forward Voltage

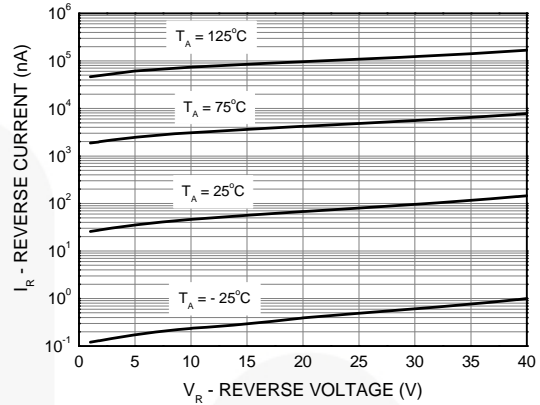


Figure 2. Reverse Current vs. Reverse Voltage

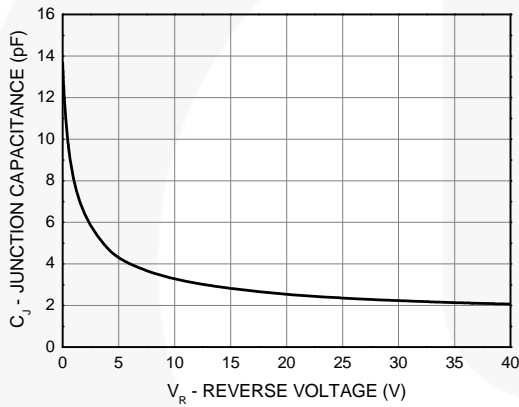


Figure 3. Total Capacitance vs. Reverse Voltage

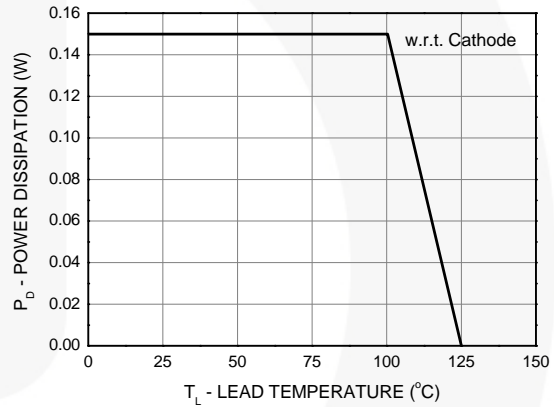
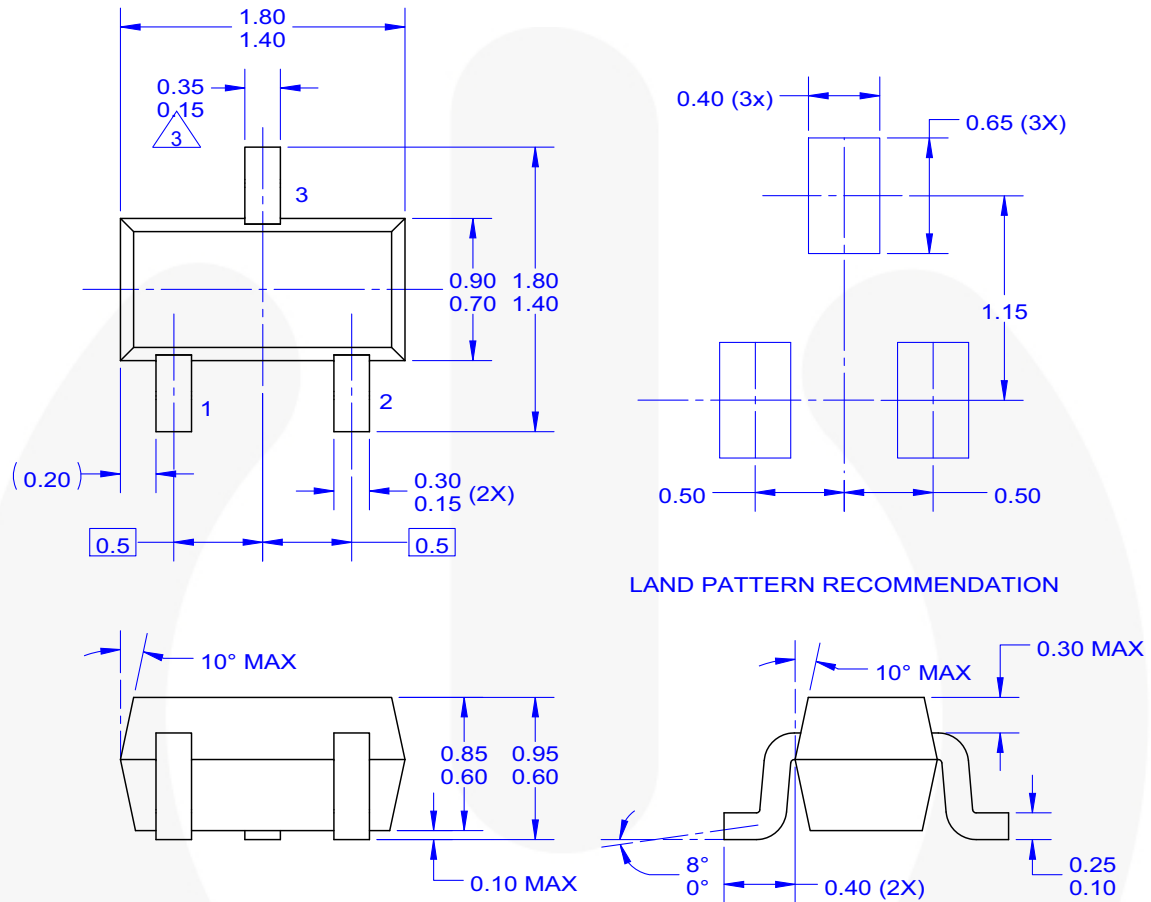


Figure 4. Power Derating Curve

# Physical Dimensions



## NOTES:

- A. REFERENCE TO EIAJ SC75 STANDARD.
- B. ALL DIMENSIONS ARE IN MILLIMETERS.
- C. DOES NOT COMPLY EIAJ SC75 STANDARD.
- D. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
- E. LAND PATTERN RECOMMENDATION BASE FROM EIAJ STD.
- F. DRAWING FILE NAME: MKT-MAD03B REV1



Figure 5. 3-Lead, SOT523



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Rev. 176