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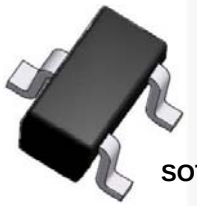
August 2015

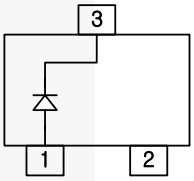
BAT54T / BAT54ST
Schottky Barrier Diode

Features

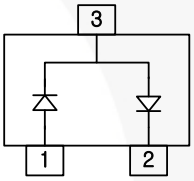
- Low Forward Voltage Drop
- Surface Mount Device at 0.95 mm Maximum Height
- MSL 1 per J-STD-020
- Pb Free and RoHS Compliant
- Matte Sn Lead Finish
- Green Mold Compound



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°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	°C
T_{STG}	Storage Temperature Range	-55 to +125	°C

Thermal Characteristics[1]

Values are at T_A = 25°C unless otherwise noted.

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

Note:

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

Electrical Characteristics

Values are at T_A = 25°C unless otherwise noted. Parameters are tested per individual diode.

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

Typical Performance Characteristics

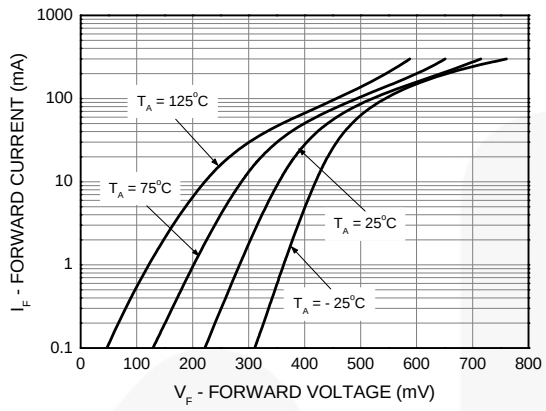


Figure 1. Forward Current vs. Forward Voltage

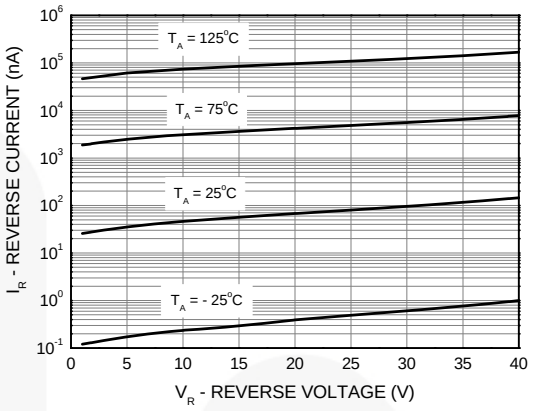


Figure 2. Reverse Current vs. Reverse Voltage

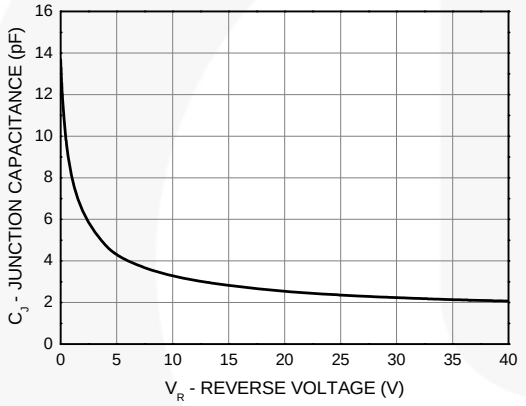


Figure 3. Total Capacitance vs. Reverse Voltage

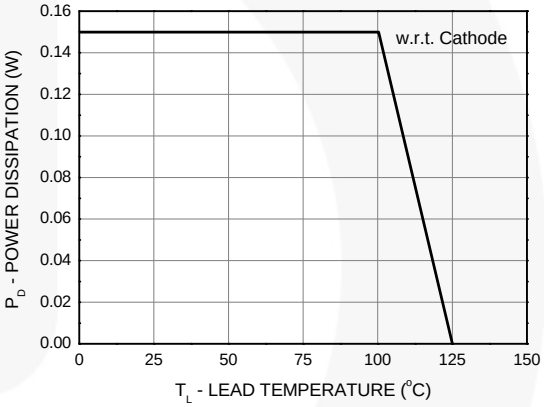
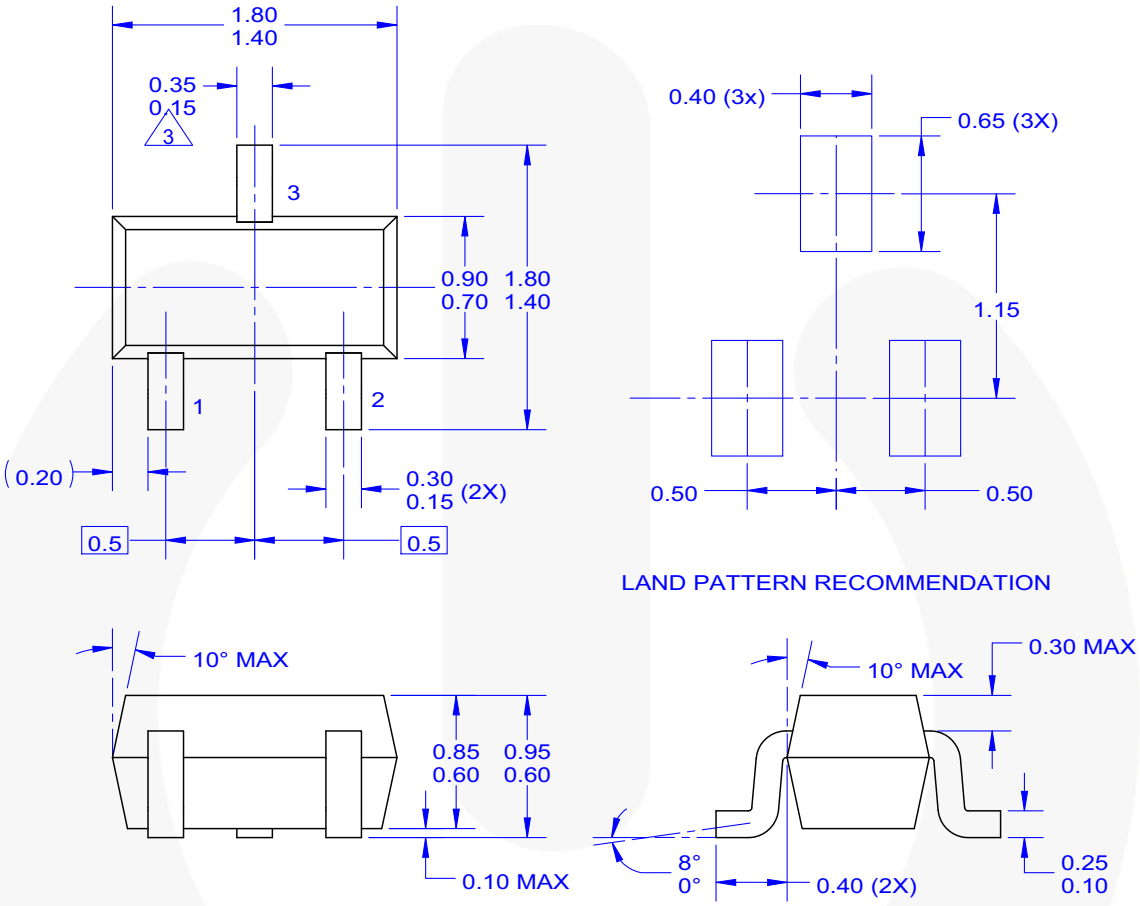


Figure 4. Power Derating Curve

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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Datasheet Identification	Product Status	Definition
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Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

Rev. I76

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