



### BAT54T /AT /CT /ST

### SURFACE MOUNT SCHOTTKY BARRIER DIODE

### **Features**

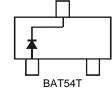
- Ultra-Small Surface Mount Package
- Low Forward Voltage Drop
- Fast Switching
- PN Junction Guard Ring for Transient and ESD Protection
- Lead Free/RoHS Compliant (Note 1)
- "Green" Device (Note 2 and 3)
- Qualified to AEC-Q101 Standards for High Reliability

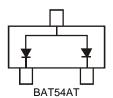
## **Mechanical Data**

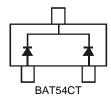
- Case: SOT-523
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: See Diagrams Below
- Weight: 0.002 grams (approximate)

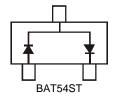


Top View









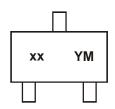
### Ordering Information (Note 4)

Part Number	Case	Packaging
BAT54T-7-F	SOT-523	3000/Tape & Reel
BAT54AT-7-F	SOT-523	3000/Tape & Reel
BAT54CT-7-F	SOT-523	3000/Tape & Reel
BAT54ST-7-F	SOT-523	3000/Tape & Reel

### Notes:

- 1. No purposefully added lead.
- 2. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com.
- 3. Product manufactured with Date Code UO (week 40, 2007) and newer are built with Green Molding Compound. Product manufactured prior to Date Code UO are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.
- 4. For packaging details, go to our website at http://www.diodes.com.

## **Marking Information**



xx = Product Type Marking Code

L1 = BAT54T

L2 = BAT54AT

L3 = BAT54CT

L4 = BAT54ST

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	2010	2011	2012	2013	2014	2015
Code	N	Р	R	S	Т	U	V	W	Χ	Υ	Z	Α	В	С
Month	Jan	Feb	Ma	ır /	Apr	May	Jun	Jul	Aug	Se	р	Oct	Nov	Dec
Code	1	2	3		4	5	6	7	8	9		0	N	D



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

Characteristic		Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V <sub>RRM</sub> V <sub>R</sub> WM	30	V
Forward Continuous Current	(Note 5)	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

## **Thermal Characteristics**

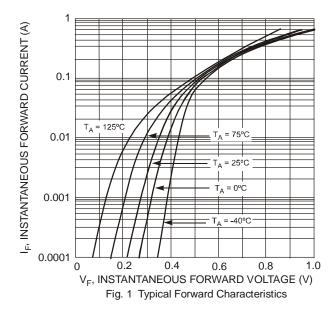
Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 5)	$P_{D}$	150	mW
Thermal Resistance, Junction to Ambient	(Note 5)	$R_{ hetaJA}$	833	°C/W
Operating and Storage Temperature Range		$T_J$ , $T_{STG}$	-65 to +125	°C

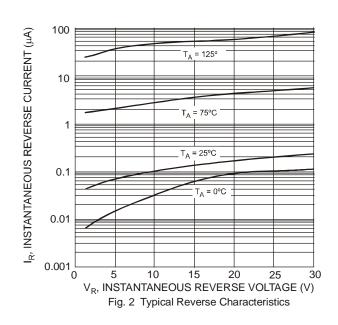
## **Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition	
Reverse Breakdown Voltage	(Note 6)	$V_{(BR)R}$	30	_	_	V	$I_R = 100 \mu A$
Forward Voltage		V <sub>F</sub>	_	_	240 320 400 500 1000	mV	IF = 0.1mA IF = 1mA IF = 10mA IF = 30mA IF = 100mA
Reverse Leakage Current	(Note 6)	$I_R$	_	_	2.0	μΑ	V <sub>R</sub> = 25V
Total Capacitance		C <sub>T</sub>	_	_	10	pF	$V_R = 1.0V, f = 1.0MHz$
Reverse Recovery Time		t <sub>rr</sub>	_	_	5.0	ns	$I_F = 10$ mA through $I_R = 10$ mA to $I_R = 1.0$ mA, $R_L = 100$ Ω

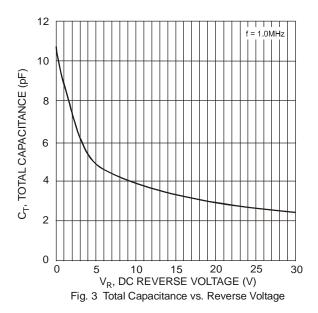
Notes:

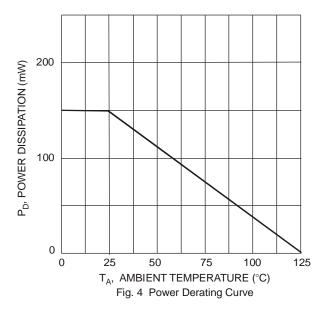
- Device mounted on FR-4 PC board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
- 6. Short duration pulse test used to minimize self-heating effect.



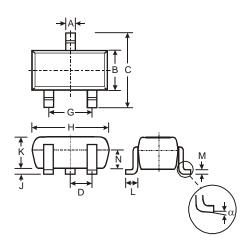






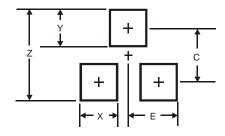


# **Package Outline Dimensions**



SOT-523								
Dim	Min	Max	Тур					
Α	0.15	0.30	0.22					
В	0.75	0.85	0.80					
C	1.45	1.75	1.60					
D			0.50					
G	0.90	1.10	1.00					
Н	1.50	1.70	1.60					
7	0.00	0.10	0.05					
K	0.60	0.80	0.75					
L	0.10	0.30	0.22					
М	0.10	0.20	0.12					
N	0.45	0.65	0.50					
α	0°	8°	_					
All Dimensions in mm								

# **Suggested Pad Layout**



Dimensions	Value (in mm)
Z	1.8
Х	0.4
Υ	0.51
С	1.3
E	0.7



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