

Features

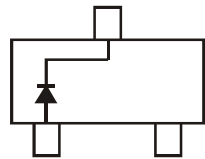
- Ultra-Small Surface Mount Package
- Low Forward Voltage Drop
- Fast Switching
- PN Junction Guard Ring for Transient and ESD Protection
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High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

Mechanical Data

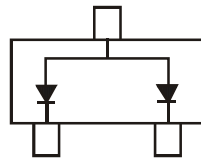
- Case: SOT523
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Annealed over Alloy 42 Leadframe. Solderable per MIL-STD-202, Method 208
- Lead-Free Plating
- Polarity: See Diagrams Below
- Weight: 0.002 grams (Approximate)



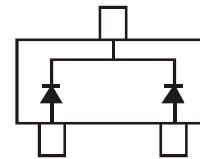
Top View



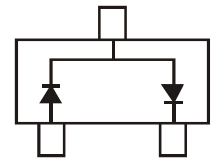
BAT54T



BAT54AT



BAT54CT



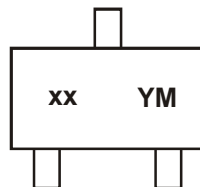
BAT54ST

Ordering Information (Note 4)

Part Number	Case	Packaging
BAT54T-7-F	SOT523	3,000/Tape & Reel
BAT54AT-7-F	SOT523	3,000/Tape & Reel
BAT54CT-7-F	SOT523	3,000/Tape & Reel
BAT54ST-7-F	SOT523	3,000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



xx = Product Type Marking Code

- L1 = BAT54T
- L2 = BAT54AT
- L3 = BAT54CT
- L4 = BAT54ST

YM = Date Code Marking

- Y = Year (ex: C = 2015)
- M = Month (ex: 9 = September)

Date Code Key

Year	2002	...	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Code	N	...	B	C	D	E	F	G	H	I	J	K	L	M

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

Maximum Ratings (@T_A = +25°C unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	30	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _R		
Forward Continuous Current (Note 5)	I _{FM}	200	mA
Repetitive Peak Forward Current	I _{FRM}	300	mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	600	mA

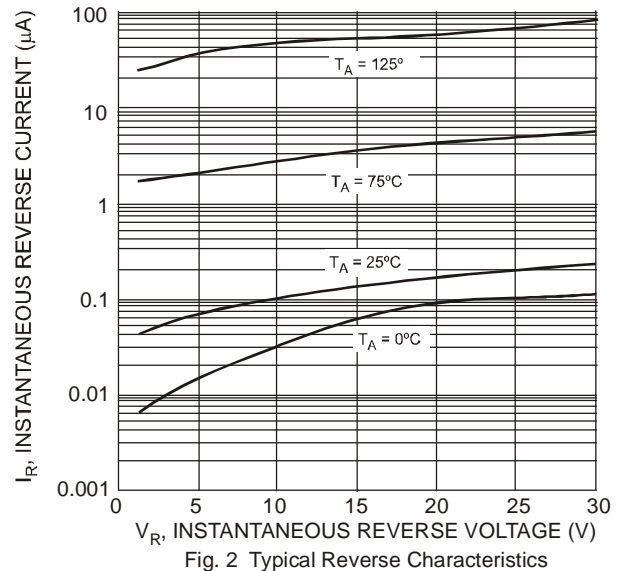
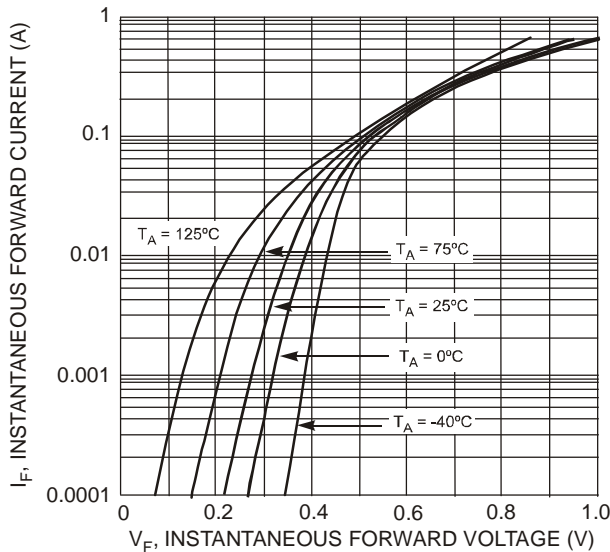
Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	150	mW
Typical Thermal Resistance, Junction to Ambient (Note 5)	R _{θJA}	490	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V _{(BR)R}	30	—	—	V	I _R = 100μA
Forward Voltage	V _F	—	—	240 320 400 500 1,000	mV	I _F = 0.1mA I _F = 1mA I _F = 10mA I _F = 30mA I _F = 100mA
Reverse Leakage Current (Note 6)	I _R	—	—	2.0	μA	V _R = 25V
Total Capacitance	C _T	—	—	10	pF	V _R = 10V, f = 1.0MHz
Reverse Recovery Time	t _{RR}	—	—	5.0	ns	I _F = I _R = 10mA, I _{tr} = 0.1 x I _R , R _L = 100Ω

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



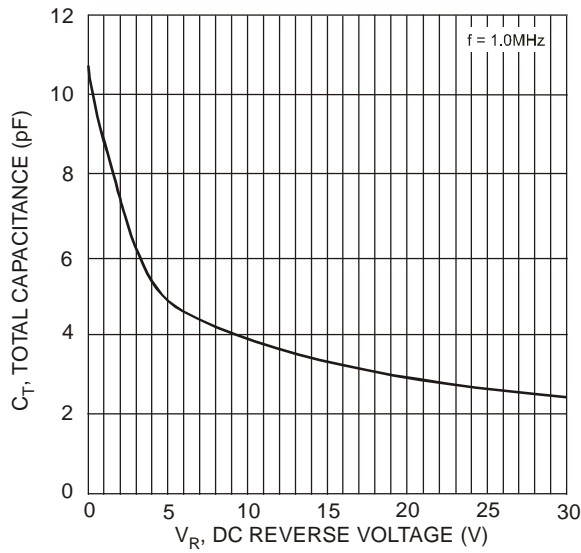


Fig. 3 Total Capacitance vs. Reverse Voltage

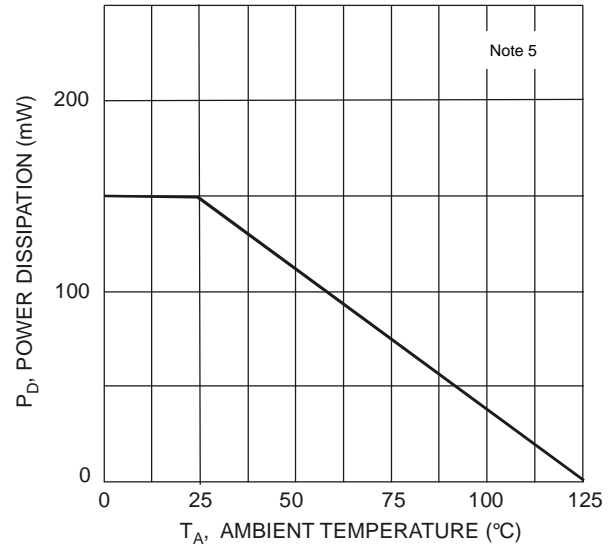
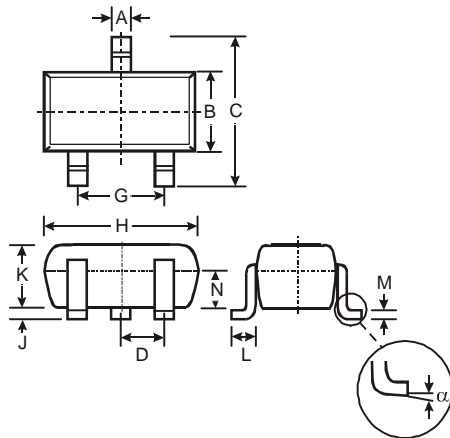


Fig. 4 Power Derating Curve

Package Outline Dimensions

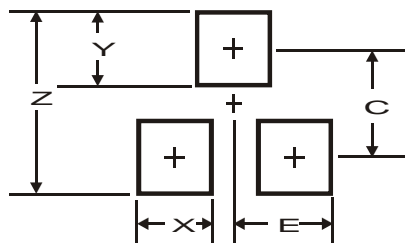
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



SOT523			
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
α	0°	8°	—
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



Dimensions	Value (in mm)
Z	1.8
X	0.4
Y	0.51
C	1.3
E	0.7

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