

FEATURES

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

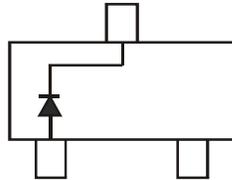
MECHANICAL DATA

- Case: SOT323
- Case Material: Molded plastic, "Green" Molding Compound UL Flammability classification rating 94V-O
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Polarity: See diagrams below
- Weight: 0.006 grams (approximate)

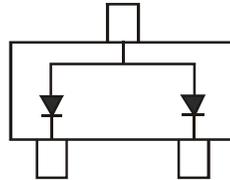
SOT323



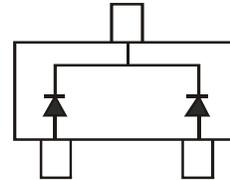
Top View



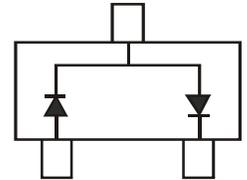
BAT54W



BAT54AW



BAT54CW



BAT54SW

MAXIMUM RATINGS, THERMAL & ELECTRICAL CHARACTERISTICS

(@ TA = +25°C, unless otherwise specified)

Maximum Ratings

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	VRRM	30	V
Working Peak Reverse Voltage	VRWM		
DC Blocking Voltage	VR		
Forward Continuous Current (Note 1)	IF	200	mA
Repetitive Peak Forward Current (Note 1)	IFRM	300	mA
Forward Surge Current (Note 1) @ t < 1.0s	IFSM	600	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	PD	200	mW
Thermal Resistance Junction to Ambient Air (Note 1)	RθJA	625	°C/W
Operating and Storage Temperature Range	TJ, TSTG	-65 to +125	°C

Electrical Characteristics

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	V(BR)R	30	--	--	V	IR = 100µA
Forward Voltage	VF	--	--	240	mV	IF = 0.1mA
				320		IF = 1mA
				400		IF = 10mA
				500		IF = 30mA
				1000		IF = 100mA
Reverse Leakage Current (Note 2)	IR	--	--	2.0	µA	VR = 25V
Total Capacitance	CT	--	--	10	pF	VR = 1.0V, f = 1.0MHz
Reverse Recovery Time	trr	--	--	5.0	ns	IF = 10mA through IR = 10mA to IR = 1.0mA, RL = 100Ω

Notes: 1. Mounted on FR-4 PC board with recommended pad layout
2. Short duration pulse test used to minimize self-heating effect.

ELECTRICAL CHARACTERISTICS CURVES
(@ $T_A = +25^\circ\text{C}$, unless otherwise specified)

Fig. 1 Typical Forward Characteristics

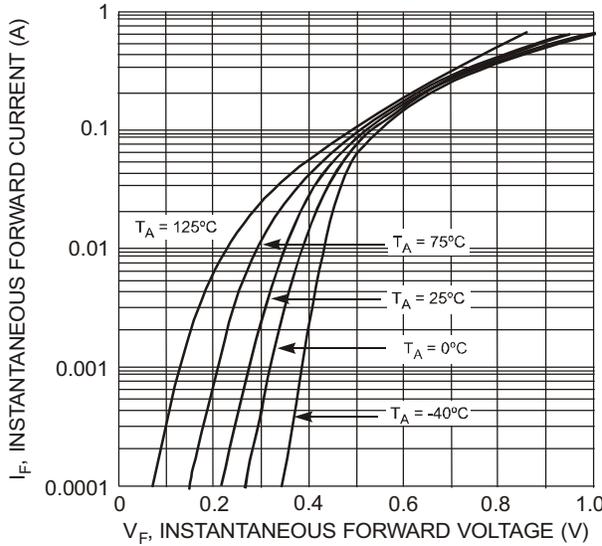


Fig. 2 Typical Reverse Characteristics

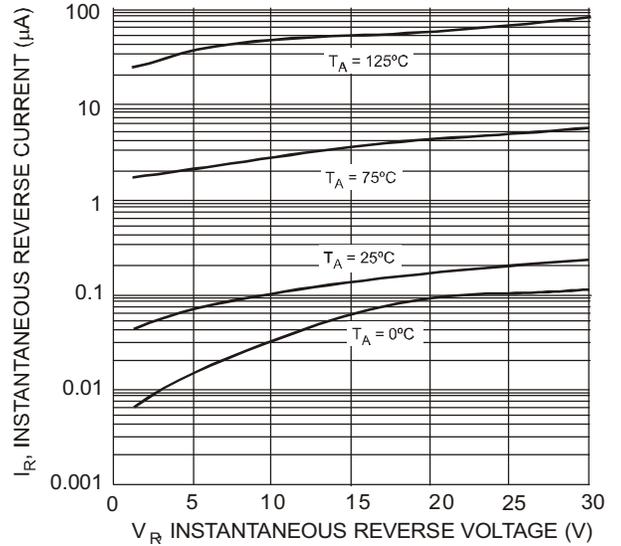


Fig. 3 Total Capacitance vs. Reverse Voltage

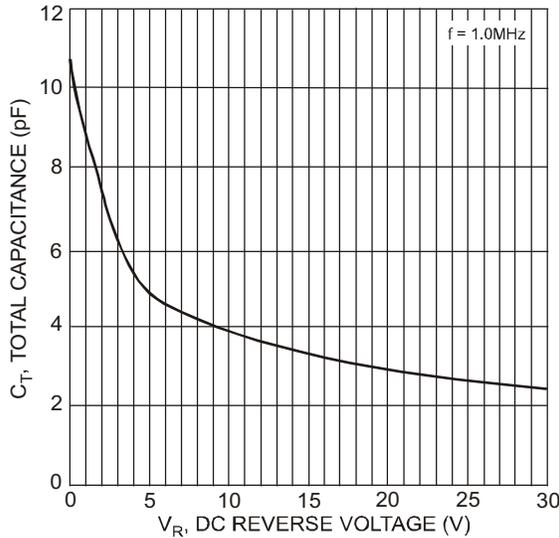
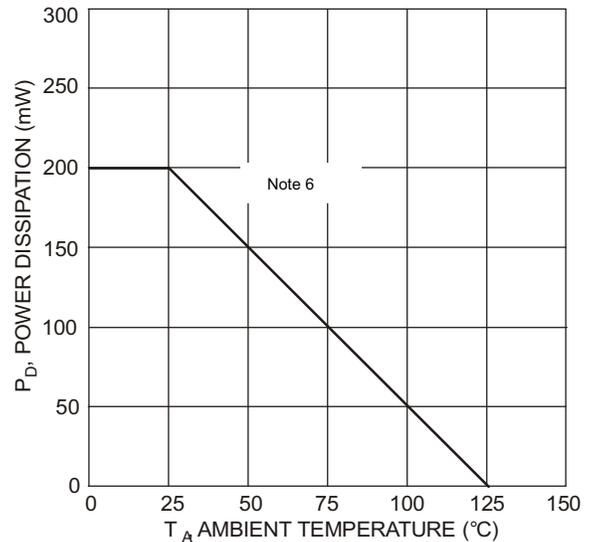
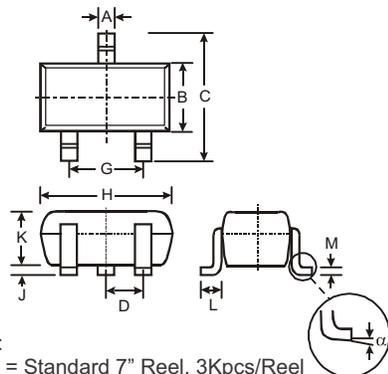


Fig. 4 Power Derating Curve



PACKAGE OUTLINE DIMENSIONS



Part# Example:
BAT54AWR = Standard 7" Reel, 3Kpcs/Reel
BAT54AWR13 = 13" Reel, 10Kpcs/Reel

SOT323			
Dim	Min	Max	Typ
A	0.25	0.40	0.30
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	-	-	0.65
G	1.20	1.40	1.30
H	1.80	2.20	2.15
J	0.0	0.10	0.05
K	0.90	1.00	1.00
L	0.25	0.40	0.30
M	0.10	0.18	0.11
α	0°	8°	-

All Dimensions in mm