

RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

**FEATURES**

- Low Forward Voltage Drop
- Fast Switching
- Ultra-small Surface Mount Package
- PN Junction Guard Ring for Transient and ESD Protection

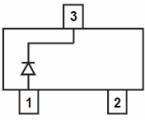
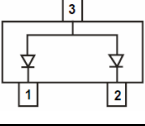
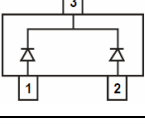
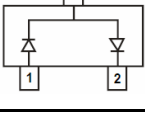
**MECHANICAL DATA**

- Case: SOT-523
- Terminals: solderable per MIL-STD-202, Method 208
- Lead (Pb)-free and Halogen-free

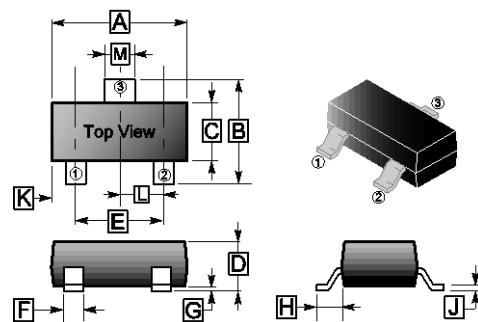
**PACKAGE INFORMATION**

Package	MPQ	Leader Size
SOT-523	3K	7 inch

**ORDER INFORMATION**

Part Number	Equivalent Circuit	Marking
BAT54T-C		L1
BAT54AT-C		L2
BAT54CT-C		L3
BAT54ST-C		L4

**SOT-523**



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.50	1.70	G	-	0.10
B	1.45	1.75	H	0.55 REF.	
C	0.70	0.90	J	0.08	0.18
D	0.60	0.90	K	-	
E	0.90	1.10	L	0.50 TYP.	
F	0.15	0.35	M	0.25	0.40

**ABSOLUTE MAXIMUM RATINGS** ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)

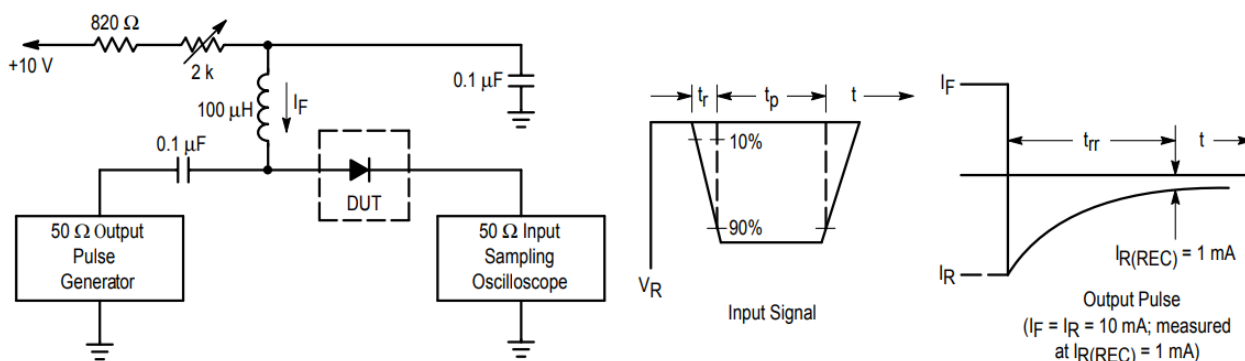
Parameter	Symbol	Ratings	Unit
Peak Repetitive Peak Reverse Voltage	$V_{RRM}$	30	V
Working Peak Reverse Voltage	$V_{RWM}$	30	
DC Reverse Voltage	$V_{DC}$	30	
Forward Continuous Current	$I_F$	200	mA
Power Dissipation <sup>1</sup>	$P_D$	150	mW
Repetitive Peak Forward Current	$I_{FRM}$	300	mA
Forward Surge Current @ $t_p < 1\text{s}$	$I_{FSM}$	600	
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	667	$^{\circ}\text{C}/\text{W}$
Operating Junction & Storage Temperature Range	$T_J, T_{STG}$	125, -55~150	$^{\circ}\text{C}$

**ELECTRICAL CHARACTERISTICS** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Forward Voltage <sup>2</sup>	$V_F$	-	-	0.24	V	$I_F=0.1\text{mA}$
		-	-	0.32		$I_F=1\text{mA}$
		-	-	0.4		$I_F=10\text{mA}$
		-	-	0.5		$I_F=30\text{mA}$
		-	-	1		$I_F=100\text{mA}$
Reverse Current <sup>3</sup>	$I_R$	-	-	2	$\mu\text{A}$	$V_R=25\text{V}$
Capacitance Between Terminals	$C_T$	-	10	-	pF	$V_R=1\text{V}$ , $f=1\text{MHz}$
Reverse Recovery Time	$T_{rr}$	-	5	-	nS	$I_F=I_R=10\text{mA}$ , $I_{rr}=1\text{mA}$ , $R_L=100\Omega$

Notes:

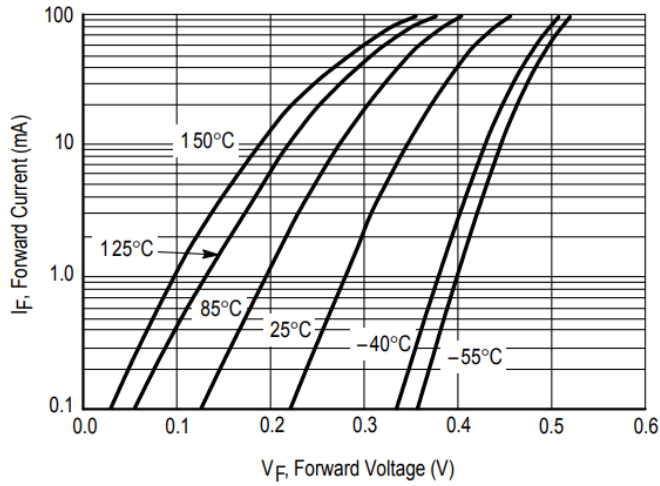
1. Mounted on FR-4 board with recommended pad layout.
2. Pulse Test:  $t_p \leq 300\mu\text{s}$ .
3. Pulse Test:  $t_p \leq 5\text{ms}$ .



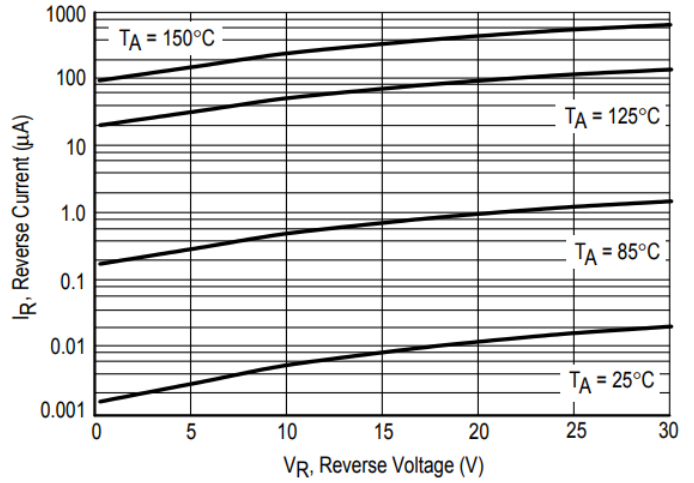
- Notes:
1. A 2.0 k $\Omega$  variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.
  2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10 mA.
  3.  $t_p \gg t_{rr}$

**Recovery Time Equivalent Test Circuit**

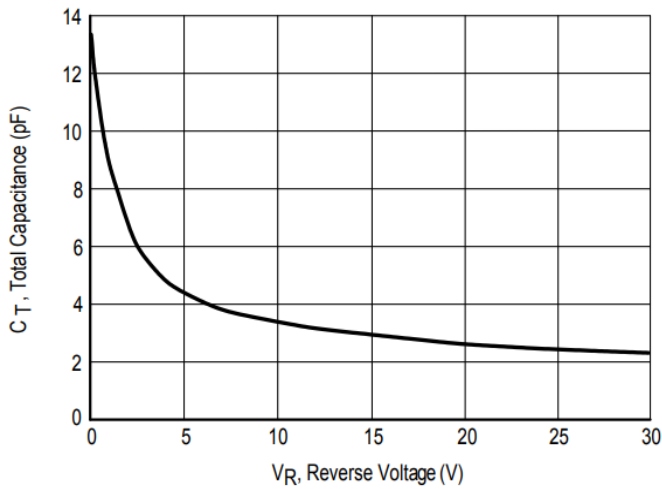
**RATINGS AND CHARACTERISTIC CURVES**



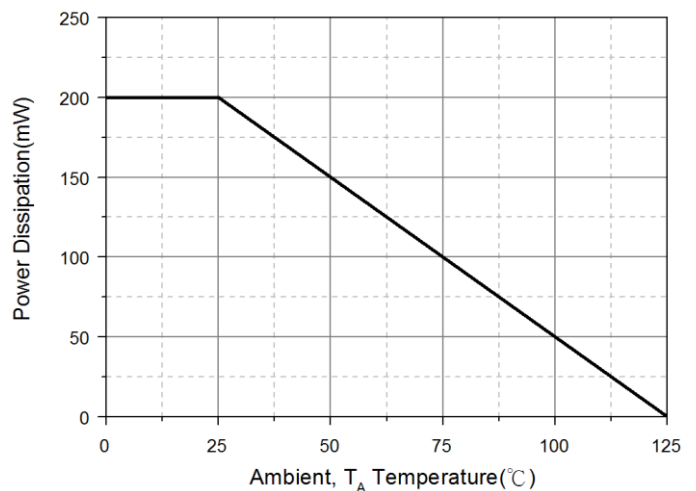
**Figure 1. Forward Voltage**



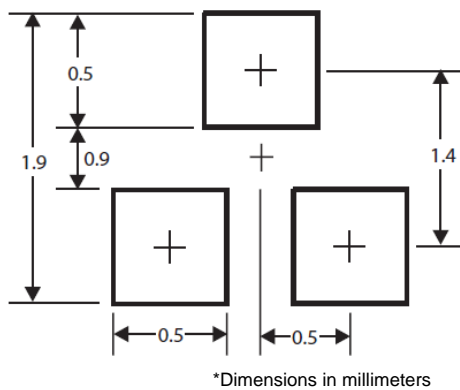
**Figure 2. Leakage Current**



**Figure 3. Total Capacitance**



**Figure 4. Derating Curve**



**Figure 5. Mounting Pad Layout**