

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
- Qualified to AEC-Q101 Standards for High Reliability

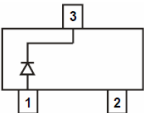
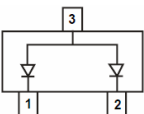
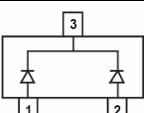
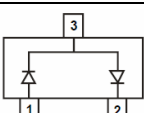
MECHANICAL DATA

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

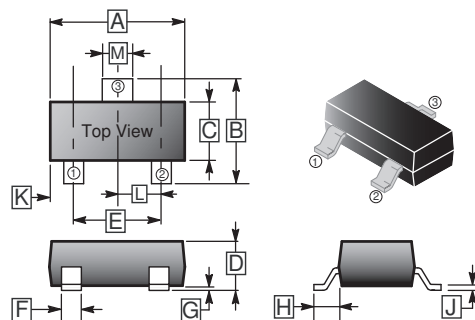
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-523	3K	7 inch

ORDER INFORMATION

Part Number	Equivalent Circuit	Marking
BAT54TCR-C		L1
BAT54ATCR-C		L2
BAT54CTCR-C		L3
BAT54STCR-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)

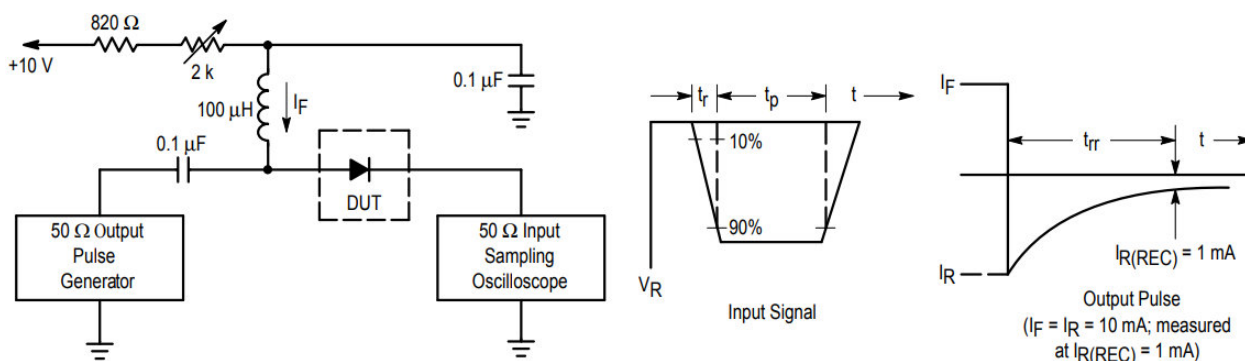
Parameter	Symbol	Ratings	Unit
Peak Repetitive Peak Reverse Voltage	V_{RRM}	30	V
Working Peak Reverse Voltage	V_{RWM}	30	
DC Reverse Voltage	V_{DC}	30	
Forward Continuous Current	I_F	200	mA
Power Dissipation ¹	P_D	150	mW
Repetitive Peak Forward Current	I_{FRM}	300	mA
Forward Surge Current @ $t_p < 1s$	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 ²	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 ³	I_R	-	-	2	μA	$V_R=25\text{V}$
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 kΩ variable resistor adjusted for a Forward Current (I_F) of 10 mA.
 2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 10 mA.
 3. $t_p \gg t_{rr}$

Recovery Time Equivalent Test Circuit

RATINGS AND CHARACTERISTIC CURVES

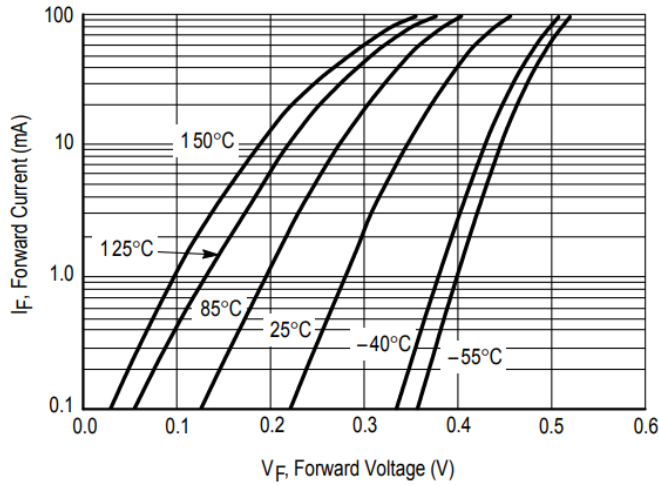


Figure 1. Forward Voltage

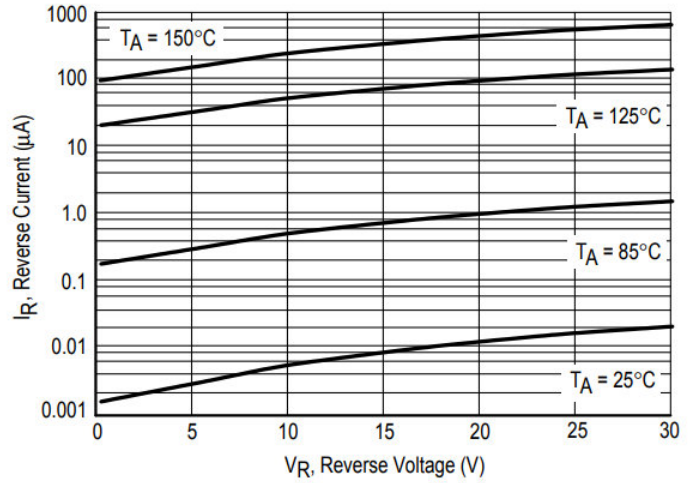


Figure 2. Leakage Current

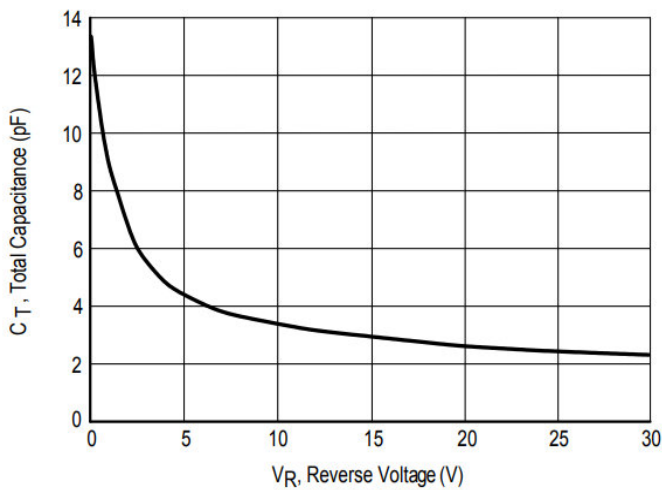


Figure 3. Total Capacitance

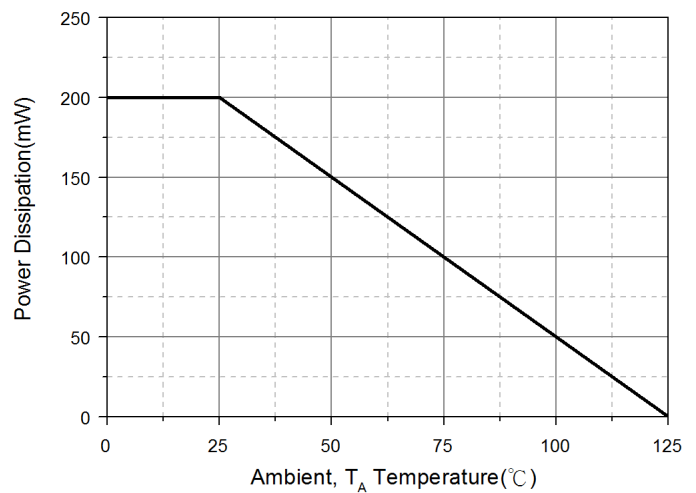


Figure 4. Derating Curve