



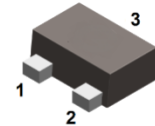
### Features

- Fast switching
- Low turn-on voltage
- PN junction guard ring for transient and ESD protection



### Mechanical Data

- Case: SOT-723
- Molding compound: UL flammability classification rating 94-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



**SOT-723**

### Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BAT54M	SOT-723	10000 pcs / Tape & Reel	KL1

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

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	30	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Reverse Voltage	V <sub>R</sub>		
Maximum Average Forward Output Current	I <sub>F(AV)</sub>	200	mA
Repetitive Peak Forward Current	I <sub>FRM</sub>	300	mA
Forward Surge Current @ t <sub>p</sub> < 1s	I <sub>FSM</sub>	600	mA

### Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P <sub>D</sub>	150	mW
Thermal Resistance (Junction-to-Ambient)	R <sub>θJA</sub>	667	°C/W
Thermal Resistance (Junction-to-Case)	R <sub>θJC</sub>	480	°C/W
Operating junction Temperature	T <sub>J</sub>	-55 ~ +125	°C
Storage Temperature Range	T <sub>STG</sub>	-55 ~ +150	°C



### Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage	$V_{(BR)}$	$I_R = 100\mu\text{A}$	30	-	-	V
Forward Voltage *1	$V_F$	$I_F = 0.1\text{mA}$	-	-	0.24	V
		$I_F = 1\text{mA}$	-	-	0.32	V
		$I_F = 10\text{mA}$	-	-	0.40	V
		$I_F = 30\text{mA}$	-	-	0.50	V
		$I_F = 100\text{mA}$	-	-	1	V
Maximum Peak Reverse Current *2	$I_R$	$V_R = 10\text{V}$	-	-	3	$\mu\text{A}$
Capacitance Between Terminals	$C_T$	$V_R = 1\text{V}, f = 1\text{MHz}$	-	-	10	pF
Reverse Recovery Time	$t_{rr}$	$I_F = I_R = 10\text{mA}$ $I_{rr} = 0.1 \cdot I_R, R_L = 100\Omega$	-	-	5	ns

\*1: pulse test,  $t_p \leq 300\mu\text{s}$   
\*2: pulse test,  $t_p \leq 10\mu\text{s}$

### Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

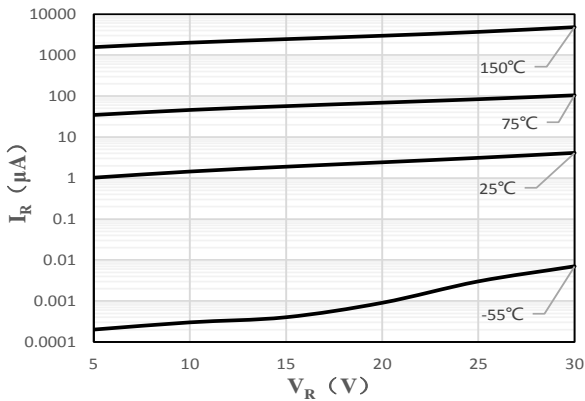


Fig 1 Typical Reverse Characteristic

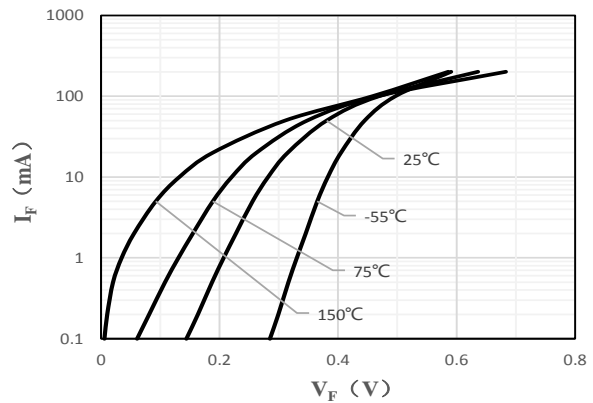


Fig 2 Typical Forward Characteristics

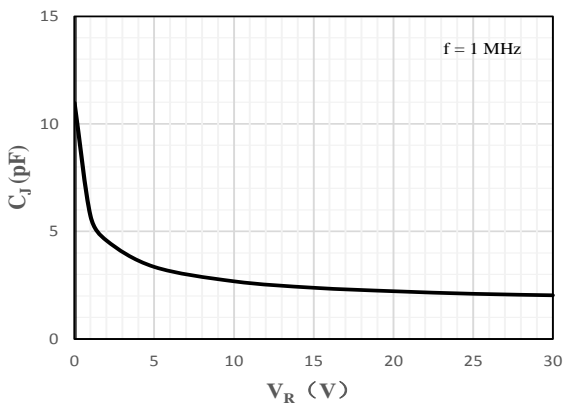


Fig 3 Capacitance Characteristics

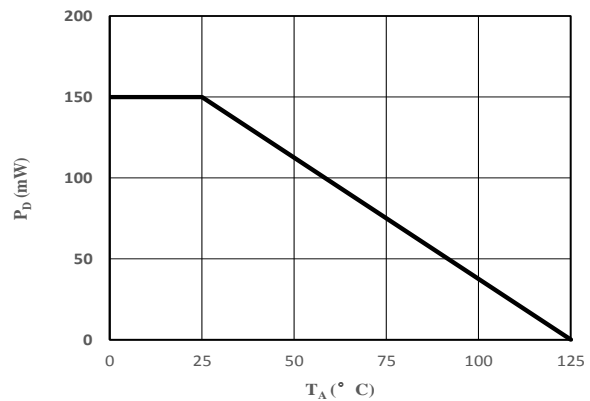
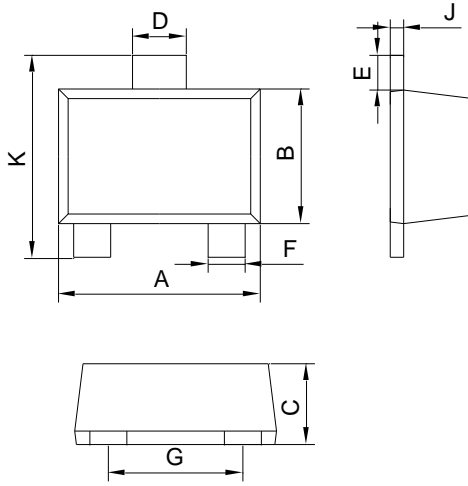


Fig 4 Derating Curve



## Package Outline Dimensions (Unit: mm)



SOT-723		
Dimension	Min.	Max.
A	1.10	1.30
B	0.70	0.90
C	0.40	0.54
D	0.22	0.42
E	0.10	0.30
F	0.12	0.32
G	0.70	0.90
J	0.08	0.15
K	1.10	1.30

## Mounting Pad Layout (Unit: mm)

### SOT-723

