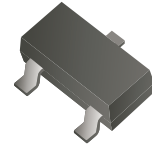


## BAT54xT-HF Series

RoHS Device  
Halogen Free



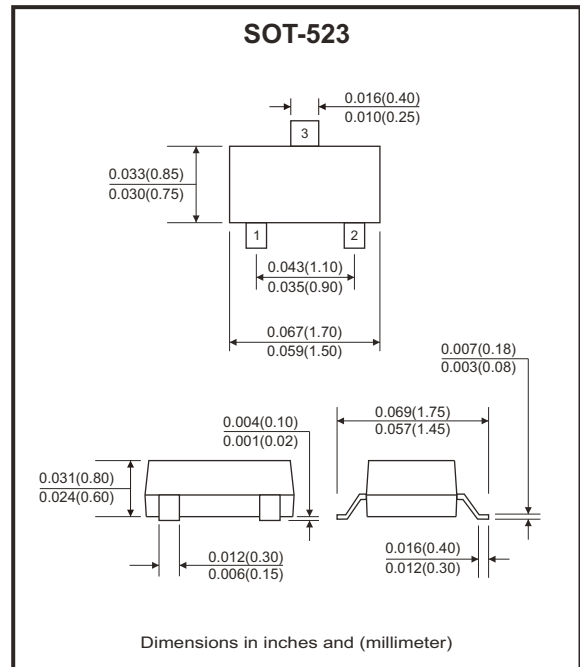
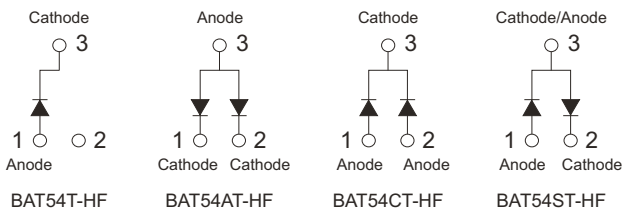
### Features

- 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, molded plastic.
- Terminals: Solderable per MIL-STD-202, method 208.

### Circuit Diagram



### Maximum Rating (at Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak repetitive peak reverse voltage	$V_{RRM}$	30	V
Working peak reverse voltage	$V_{RWM}$		
DC reverse voltage	$V_R$		
Forward continuous current	$I_F$	200	mA
Repetitive peak forward current	$I_{FRM}$	300	mA
Forward surge current @ $t_p < 1s$	$I_{FSM}$	600	mA
Power dissipation (Note 1)	$P_d$	150	mW
Thermal resistance junction to ambient air	$R_{\theta JA}$	667	°C/W
Junction temperature range	$T_J$	-55 to +125	°C
Storage temperature range	$T_{STG}$	-55 to +150	°C

Notes: 1. Mounted on FR-4 board with recommended pad layout.

Company reserves the right to improve product design, functions and reliability without notice.

REV:A

## Electrical Characteristics (at Ta=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Max	Unit
Reverse breakdown voltage	$V_{(BR)}$	$I_R = 100\mu A$	30		V
Forward voltage (Note 1)	$V_F$	$I_F = 0.1mA$ $I_F = 1mA$ $I_F = 10mA$ $I_F = 30mA$ $I_F = 100mA$		0.24 0.32 0.40 0.50 1.00	V
Reverse current (Note 2)	$I_R$	$V_R = 25V$		2	$\mu A$
Capacitance between terminals	$C_T$	$V_R = 1V, f = 1MHz$		10	pF
Reverse recovery time	$t_{rr}$	$I_F = I_R = 10mA, I_{rr} = 0.1 \times I_R, R_L = 100\Omega$		5	ns

Notes: 1. Pulse test,  $t_p \leq 300\mu s$ .  
2. Pulse test,  $t_p \leq 5ms$ .

## Rating and Characteristic Curves (BAT54xT-HF Series)

Fig.1 - Typical Reverse Characteristic

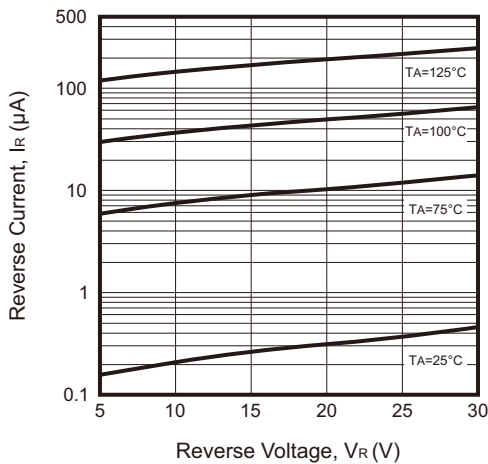


Fig.2 - Typical Forward Characteristic

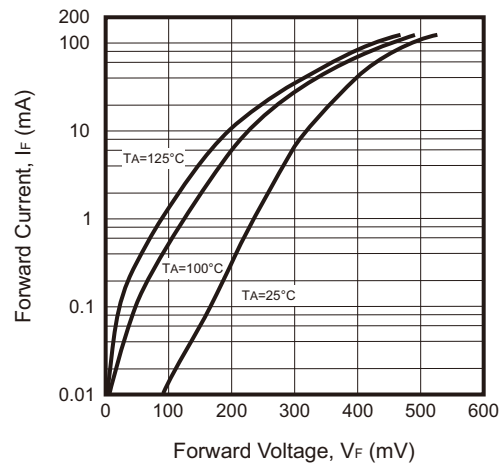


Fig.3 - Capacitance vs Reverse Voltage

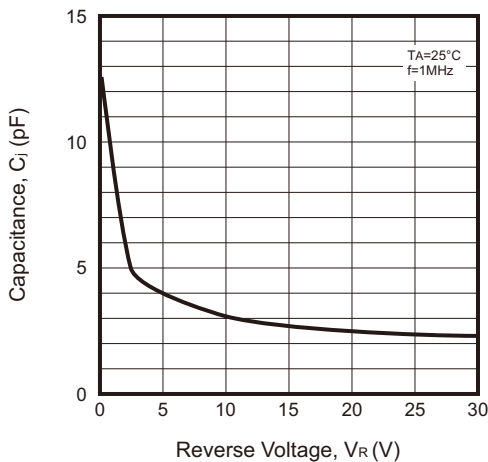
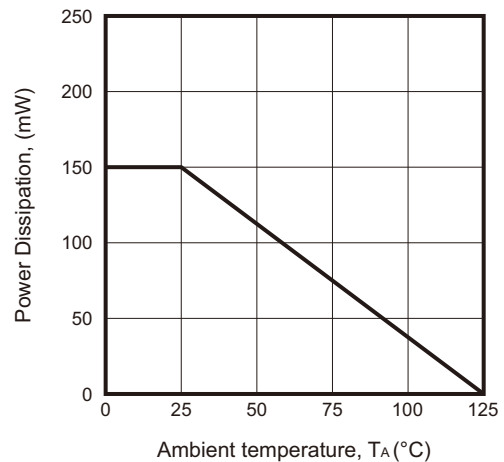
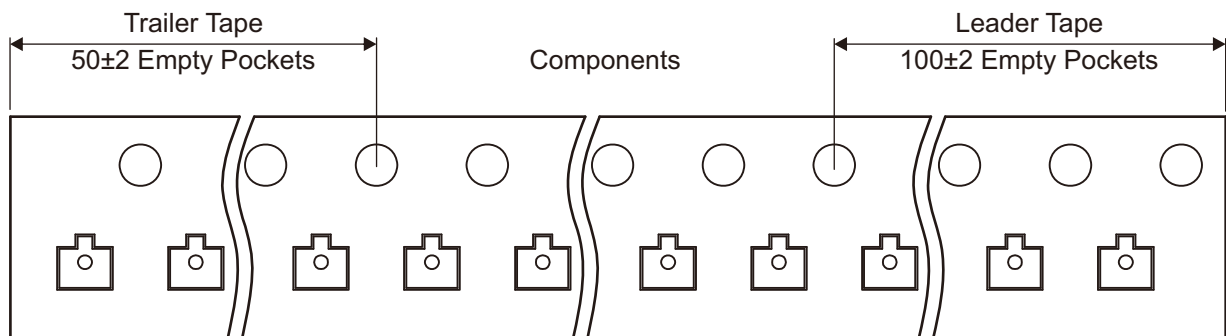
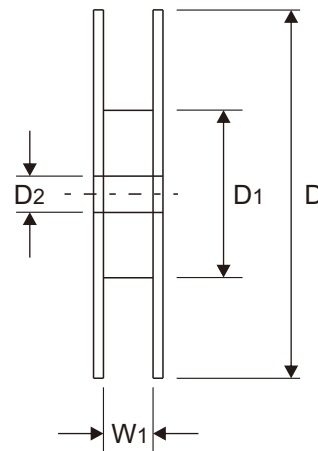
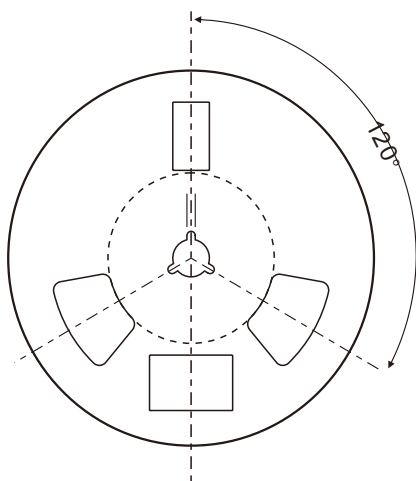
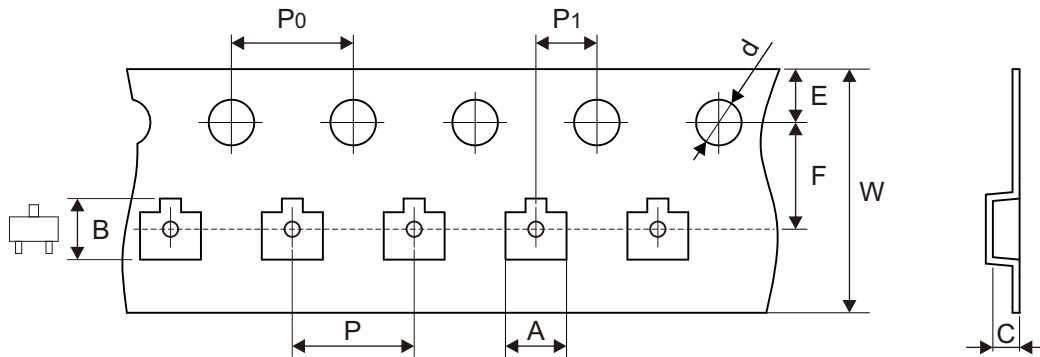


Fig.4 - Derating Curve ( $P_D$ - $T_A$ )



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## Reel Taping Specification



SOT-523	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	1.85 ± 0.05	1.85 ± 0.05	0.875 ± 0.05	1.50 ± 0.10	178.00 ± 1.00	54.00 ± 0.50	13.00 ± 0.50
	(inch)	0.073 ± 0.002	0.073 ± 0.002	0.034 ± 0.002	0.059 ± 0.004	7.008 ± 0.039	2.126 ± 0.020	0.512 ± 0.020

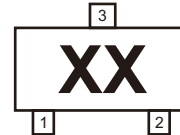
SOT-523	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	8.00 + 0.20 - 0.10	9.50 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.315 + 0.008 - 0.004	0.374 ± 0.039

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REV:A

## Marking Code

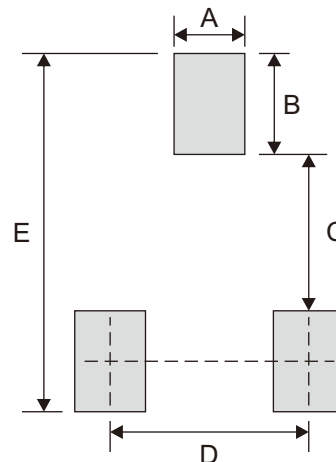
Part Number	Marking Code
BAT54T-HF	L1
BAT54AT-HF	L2
BAT54CT-HF	L3
BAT54ST-HF	L4



XX = Product type marking code

## Suggested P.C.B. PAD Layout

SIZE	SOT-523	
	(mm)	(inch)
A	0.356	0.014
B	0.508	0.020
C	0.787	0.031
D	1.00	0.039
E	1.803	0.071



Note: 1. The pad layout is for reference purposes only.

## Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-523	3,000	7