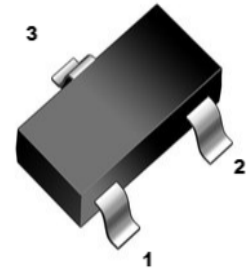




1. Features

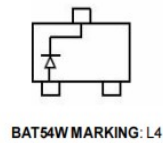
SOT-323

- Extremely Fast Switching Speed

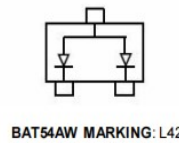


2. Mechanical Data

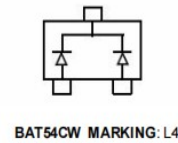
- Case: Molded Plastic, SOT-323.
- Epoxy: UL 94V-0 rate flame retardant.
- Terminals: Plated Leads Solderable per MIL-STD-750, Method-2026.
- Marking: marked on body.



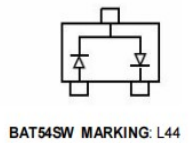
BAT54W MARKING: L4



BAT54AW MARKING: L42



BAT54CW MARKING: L43



BAT54SW MARKING: L44

3. Maximum Ratings

Electrical Characteristics Rating at 25°C ambient temperature unless otherwise specified.

Characteristic	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	30	V
Working Peak reverse voltage	V_{RWM}	30	V
Reverse Voltage	V_R	30	V
Continuous Forward Current	I_F	200	mA
Power Dissipation	P_D	200	mW
Operating junction and storage temperature range	T_j, T_{stg}	-55 to +150	°C

4. Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameters	Symbol	Cindition	Min	TYP	Max	Unit
Reverse breakdown voltage	$V_{(BR)}$	$I_R = 100\mu\text{A}$	30	-	-	V
Forward Voltage	V_F	$I_F = 0.1\text{mA}$	-	-	0.24	V
		$I_F = 1\text{mA}$	-	-	0.32	
		$I_F = 10\text{mA}$	-	-	0.4	
		$I_F = 30\text{mA}$	-	-	0.5	
		$I_F = 100\text{mA}$	-	-	1	
Reverse Current	I_R	$V_R = 25\text{V}$	-	-	2	μA
Diode Capacitance	C_D	$V_R = 1\text{V}, f = 1\text{MHz}$	-	-	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



5. Rating And Characteristic Curves

Fig. 1 Forward Characteristics

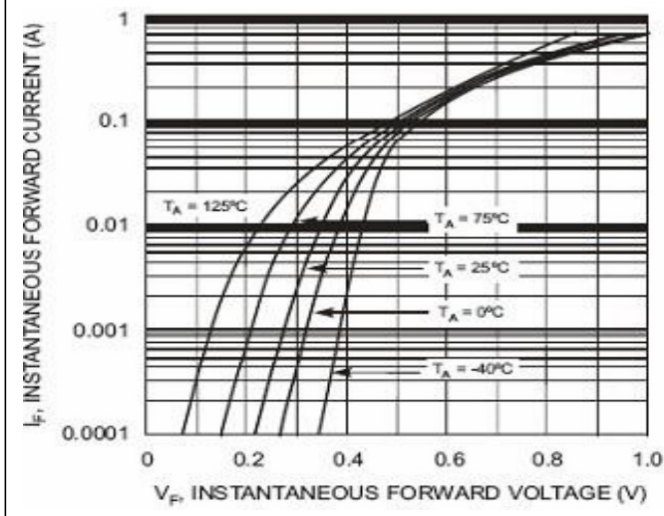


Fig. 2 Typical Reverse Characteristics

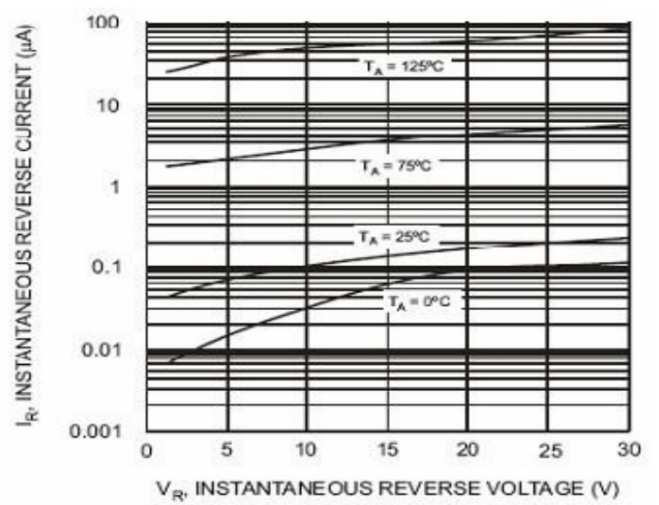


Fig. 3 Typical Capacitance vs. Reverse Voltage

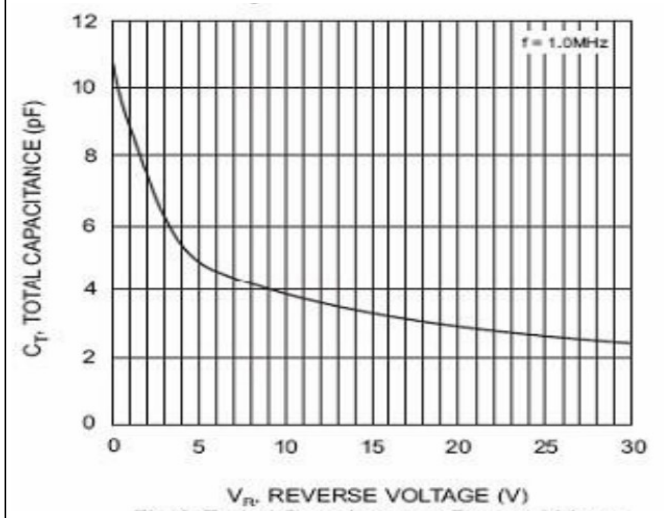
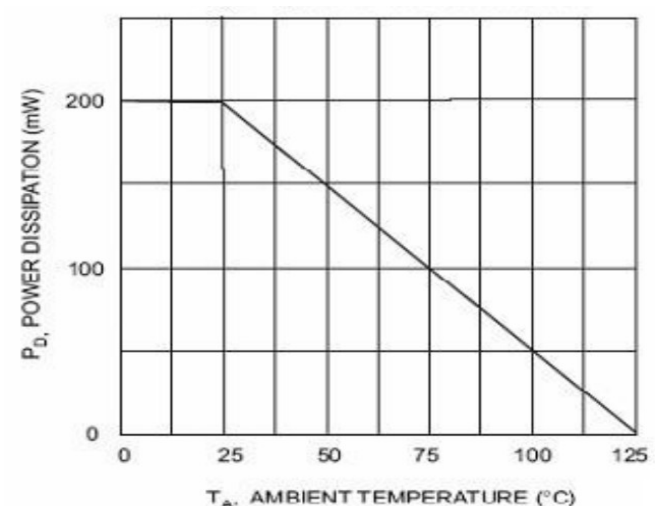
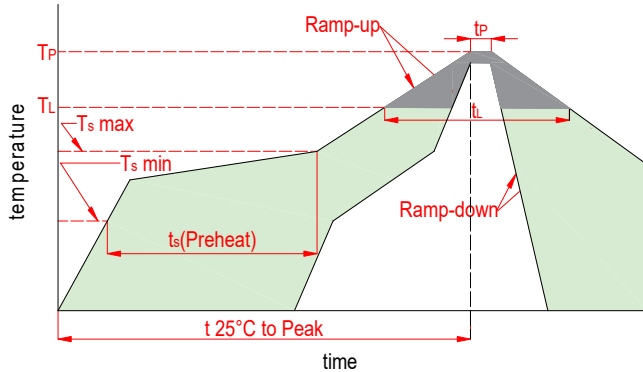


Fig. 4 Power Derating Curve



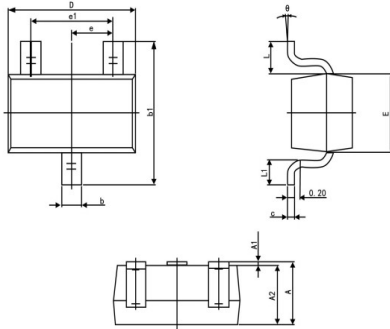


6. Soldering Parameters



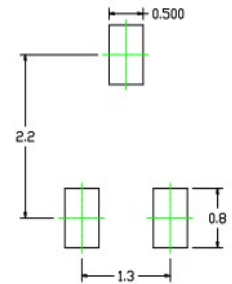
Reflow Condition		Lead-free
Pre Heat	Temp. min(T_s (min))	150℃
	Temp. max(T_s (min))	200℃
	Time(min to max)(t_s)	60~120s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3℃/s max
T_s (max) to T_L -Ramp-up Rate		3℃/s max
Reflow	Temp.(T_L)(Liquidus)	217℃
	Temp.(t_L)(Liquidus)	60~150s
Peak Temp.(T_P)		260 ^{+0/-5} ℃
Time within actual peak Temp.(t_p)		30s max
Ramp-down Rate		6℃/s max
Time 25℃ to peak Tempe.(T_p)		8 minutes max
Do not exceed		260℃

7. Dimensions

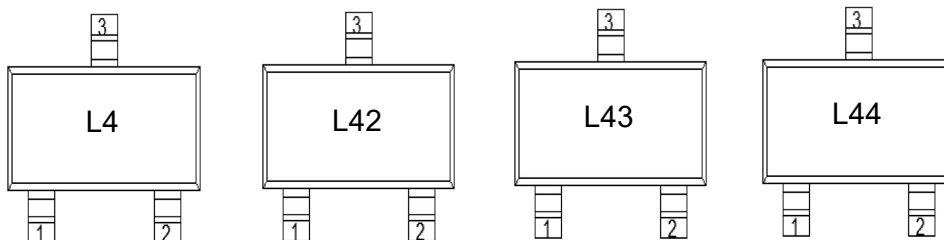


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.008	0.016	0.200	0.400
c	0.003	0.006	0.080	0.150
D	0.079	0.087	2.000	2.200
E	0.045	0.053	1.150	1.350
E1	0.085	0.096	2.150	2.450
e1	0.047	0.055	1.200	1.400
L1	0.010	0.018	0.260	0.460

Mounting PAD Layout



8. Part Marking System



9. Package Information

Package	Part Number	Marking Code	Tape Width(mm)	Quantity(pcs)
SOT-323	BAT54W	L4	8	3000
SOT-323	BAT54AW	L42	8	3000
SOT-323	BAT54CW	L43	8	3000
SOT-323	BAT54SW	L44	8	3000



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