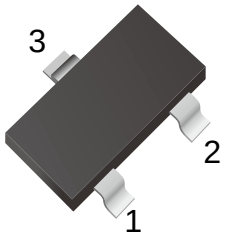
LTBTA94

Transistor(PNP)

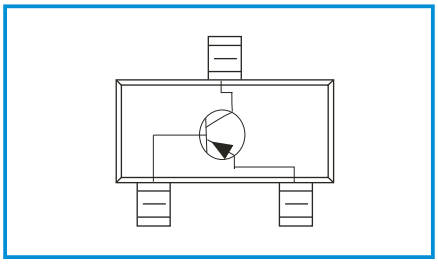


1. BASE
2. EMITTER
3. COLLECTOR

Features

- Complement to LTBTA44
- For Switching and Amplifier Applications
- Power Dissipation of 300mW
- High Stability and High Reliability

Functional Diagram



Mechanical Data

- SOT-23 Small Outline Plastic Package
- Epoxy UL: 94V-0
- Mounting Position: Any
- Marking:4D

Maximum Ratings (Ta=25℃ unless otherwise noted)

Parameters	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-400	V
Collector-Emitter Voltage	V_{CEO}	-400	V
Emitter -Base Voltage	V_{EBO}	-5	V
Collector Current-Continuous	I_C	-200	mA
Collector Current -Pulsed	I_{CM}	-300	mA
Collector Power Dissipation	P_C	350	mW
Junction Temperature	T_j	150	℃
Storage Temperature	Tstg	-55-+150	℃
Thermal resistance From junction to ambient	$R_{\theta JA}$	357	℃/W

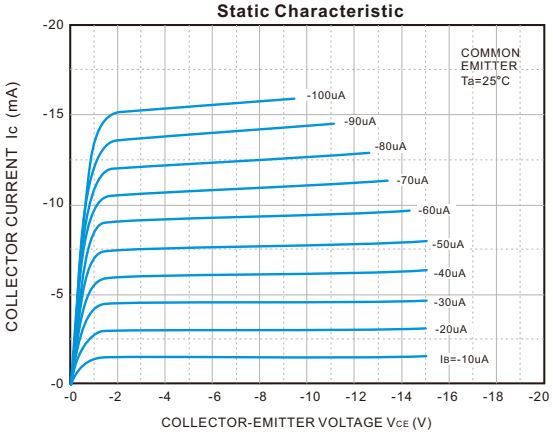
Electrical characteristics (Ta=25℃ unless otherwise specified)

Parameter	Symbols	Test Condition	Limits		Unit
			Min	Max	
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-100μA, I_E=0	-400		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-1mA, I_B=0	-400		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-100μA, I_C=0	-5		V
Collector cut-off current	I_{CBO}	V_{CB}=-400V, I_E=0		-0.1	μA
Collector cut-off current	I_{CEO}	V_{CE}=-400V, I_B=0		-5	μA
Emitter cut-off current	I_{EBO}	V_{EB}=-4V, I_C=0		-0.1	μA
DC current gain	$h_{FE(1)*}$	V_{CE}=-10V, I_C=-10mA	80	300	
	$h_{FE(2)*}$	V_{CE}=-10V, I_C=-1mA	70		
	$h_{FE(3)*}$	V_{CE}=-10V, I_C=-100mA	40		
	$h_{FE(4)*}$	V_{CE}=-10V, I_C=-50mA	40		
Collector-emitter saturation voltage	$V_{CE(sat)1*}$	I_C=-10mA, I_B=-1mA		-0.2	V
	$V_{CE(sat)2*}$	I_C=-50mA, I_B=-5mA		-0.3	V
Base -emitter saturation voltage	$V_{BE(sat)*}$	I_C=-10mA, I_B=-1mA		-0.75	V
Transition frequency	f_T	VCE=-20V, IC=10mA,f=30MHz	50		MHz

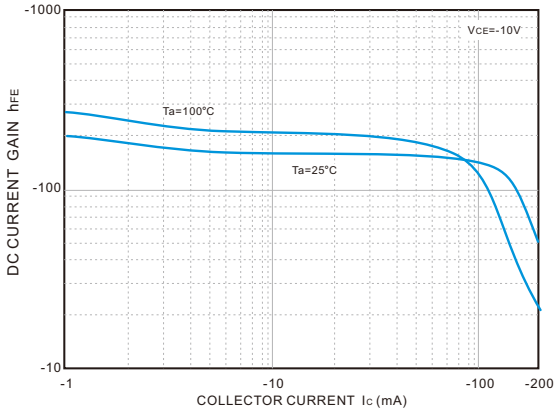
*Pulse test: pulse width≤300us, duty cycle≤2.0%.

Typical Characteristics

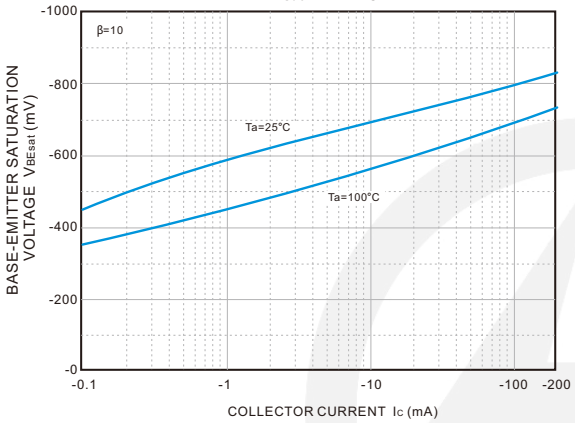
Static Characteristic



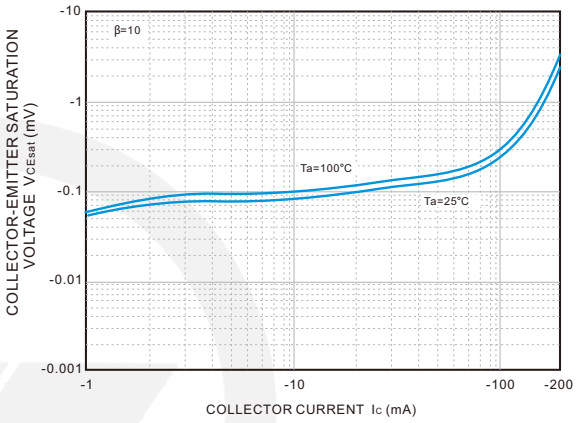
hFE —— Ic



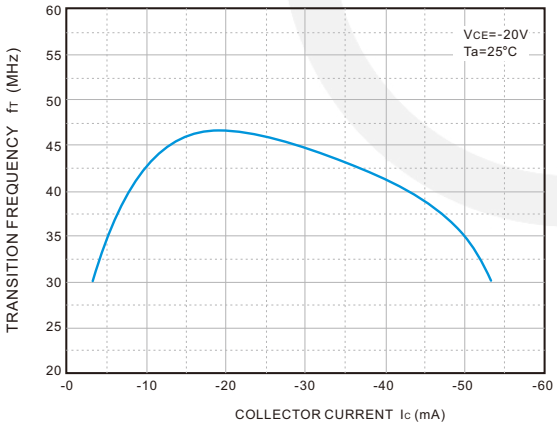
VBEsat —— Ic



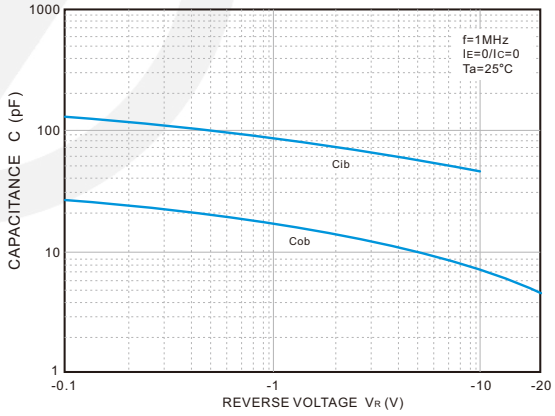
VCEsat —— Ic



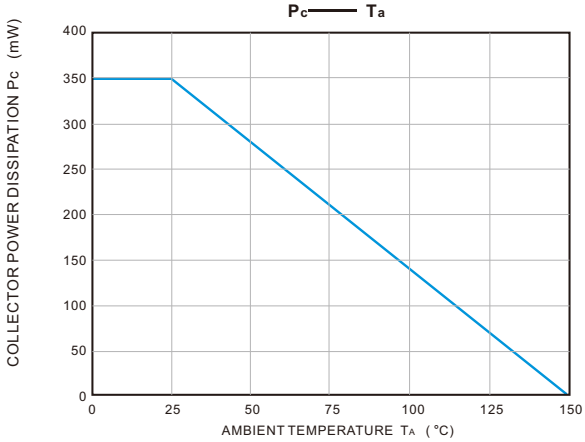
fT —— Ic



Cob / Cib —— VCB / VEB

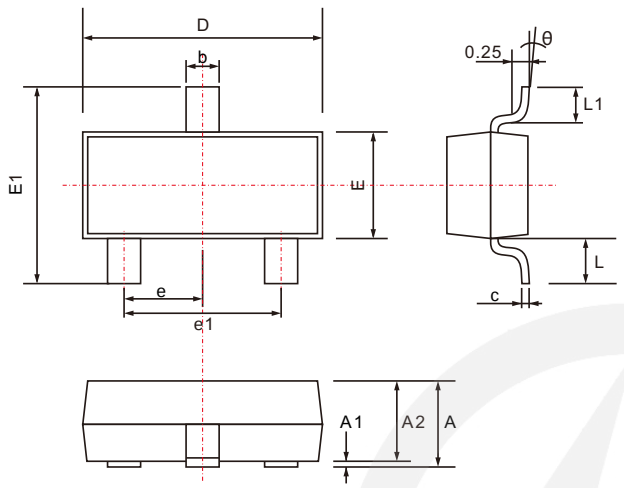


Pc —— Ta



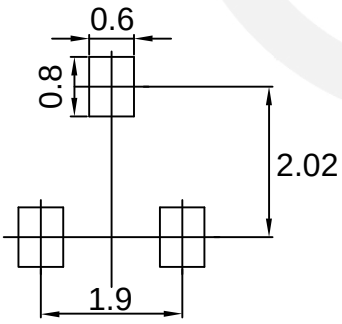
SOT-23 Package Outline

Unit: mm



SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.200
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.200
D	2.700	3.100
E	1.200	1.400
E1	2.200	3.000
e	0.950 TYP.	
e1	1.750	2.050
L	0.550 TYP.	
L1	0.300	0.500
θ	0°	8°

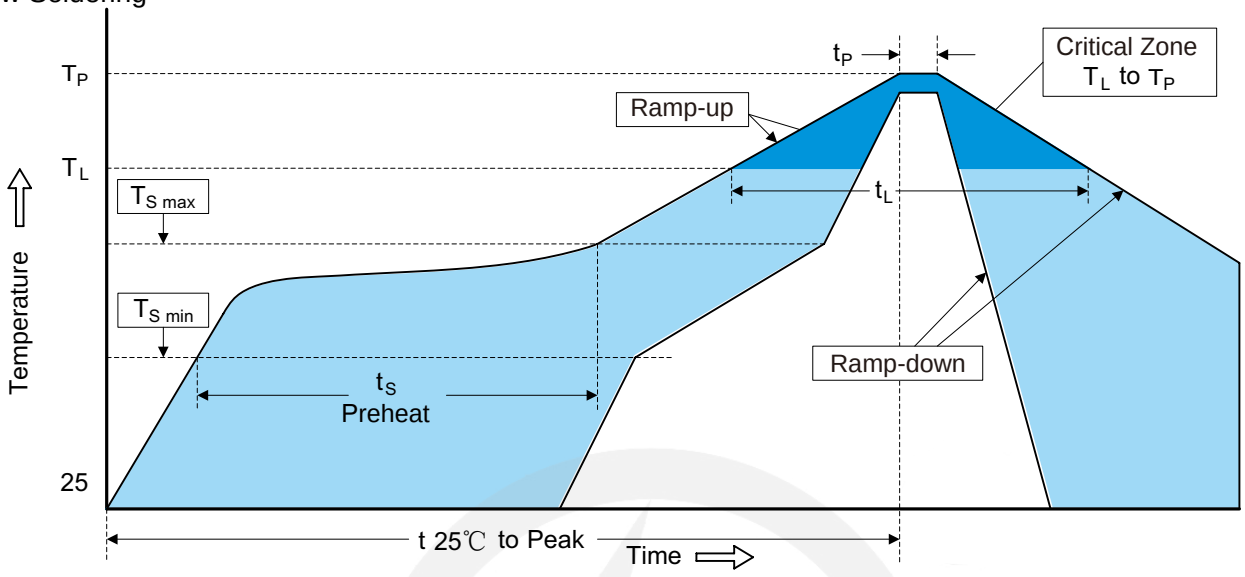
SOT-23 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm
3.The pad layout is for reference purpose only.

Recommended Soldering Conditions

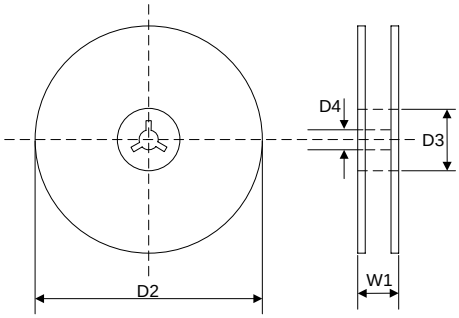
Reflow Soldering



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3℃/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (t_S)	 150℃ 200℃ 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	 3℃/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	 217℃ 60-150 seconds
Peak Temperature (T_P)	260℃
Time within 5℃ of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max.

7” Reel



D2	Φ178.0±2.0
D3	Φ50.0Min.
D4	Φ13.0±0.5
W1	16.0±2.0
Quantity: 3000PCS	