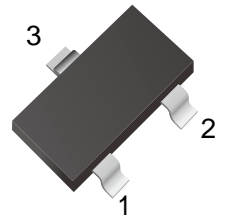
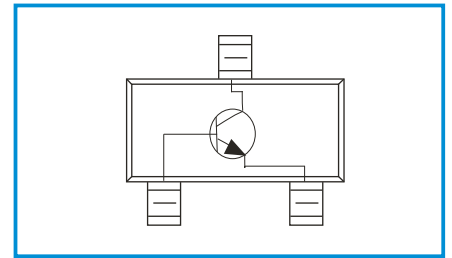


## Transistor(NPN)

### Features

- Complement to LT92
- Power Dissipation of 350mW
- High Stability and High Reliability

1. BASE
2. EMITTER
3. COLLECTOR


**Functional Diagram**


### Mechanical Data

- SOT-23 Small Outline Plastic Package
- Epoxy UL: 94V-0
- Mounting Position: Any
- Marking: 1D

### Maximum Ratings ( Ta=25 unless otherwise noted )

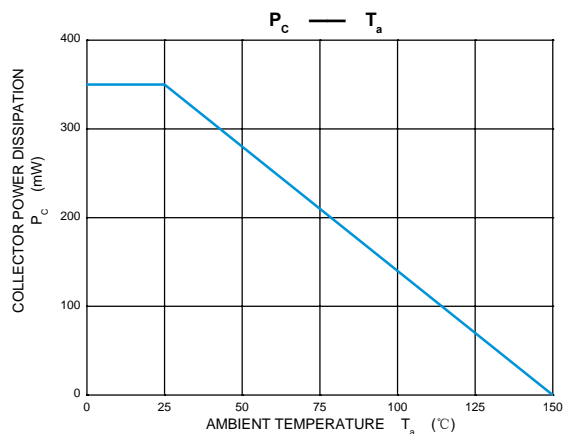
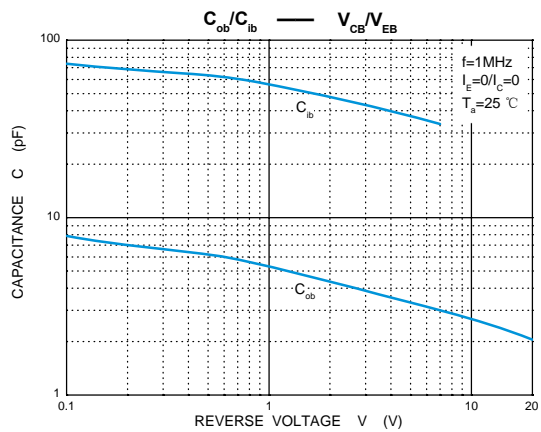
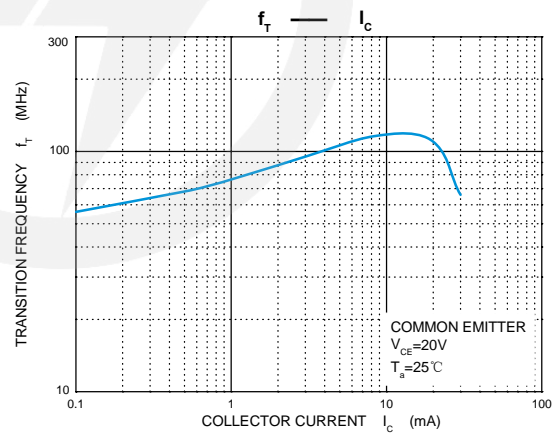
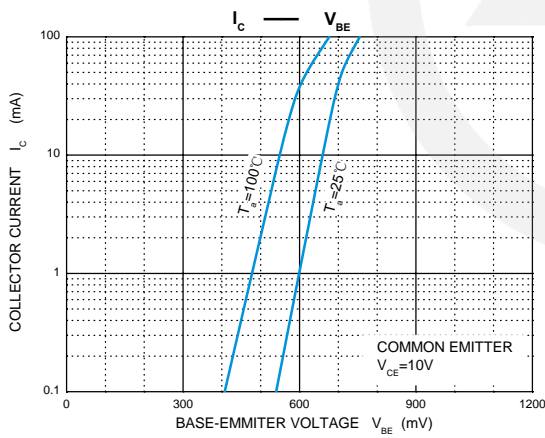
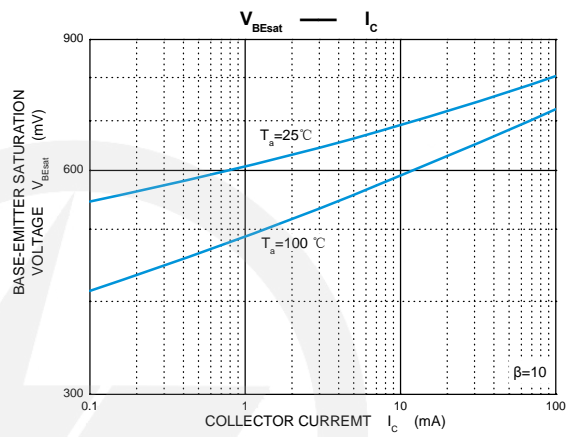
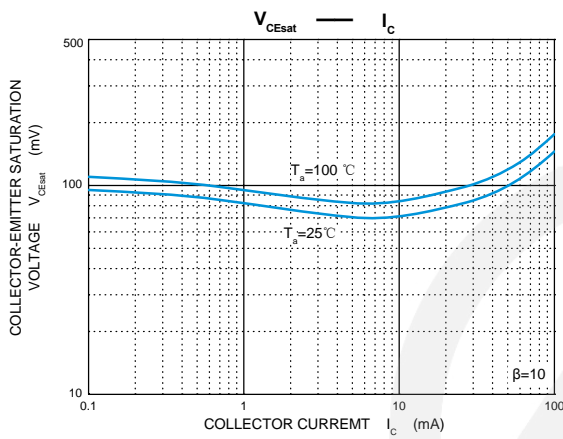
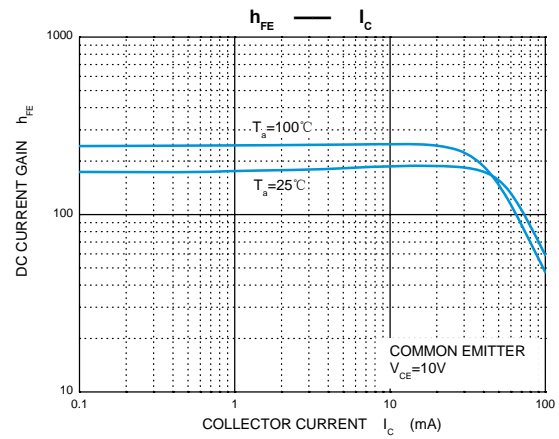
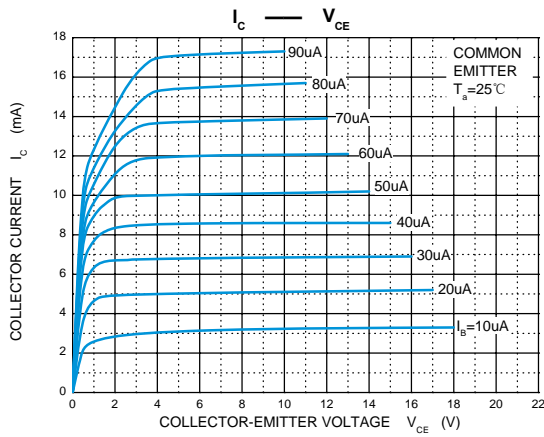
Parameters	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CB0</sub>	300	V
Collector-Emitter Voltage	V <sub>CEO</sub>	300	V
Emitter -Base Voltage	V <sub>EBO</sub>	5	V
Collector Current-Continuous	I <sub>c</sub>	300	mA
Collector Power Dissipation	P <sub>c</sub>	350	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55-+150	°C
Thermal resistance From junction to ambient	R <sub>θJA</sub>	357	°C/W

### Electrical characteristics ( Ta=25 unless otherwise specified )

Parameter	Symbols	Test Condition	Limits		Unit
			Min	Max	
Collector-base breakdown voltage	V(BR)CBO	I <sub>C</sub> =100uA, I <sub>E</sub> =0	300		V
Collector-emitter breakdown voltage	V(BR)CEO	I <sub>C</sub> =1mA, I <sub>B</sub> =0	300		V
Emitter-base breakdown voltage	V(BR)EBO	I <sub>E</sub> =10uA, I <sub>C</sub> =0	5		V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =200V, I <sub>E</sub> =0		250	nA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0		100	nA
DC current gain	h <sub>FE</sub> (1)*	V <sub>CE</sub> =10V, I <sub>C</sub> =1mA	60		
	h <sub>FE</sub> (2)*	V <sub>CE</sub> =10V, I <sub>C</sub> =10mA	100	200	
	h <sub>FE</sub> (3)*	V <sub>CE</sub> =10V, I <sub>C</sub> =30mA	65		
Collector-emitter saturation voltage	V <sub>CE(sat)</sub> *	I <sub>C</sub> =20mA, I <sub>B</sub> =2mA		0.20	V
Base -emitter saturation voltage	V <sub>BE(sat)</sub> *	I <sub>C</sub> =20mA, I <sub>B</sub> =2mA		0.90	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =20V, I <sub>C</sub> =100mA; f=30MHz	50		MHz

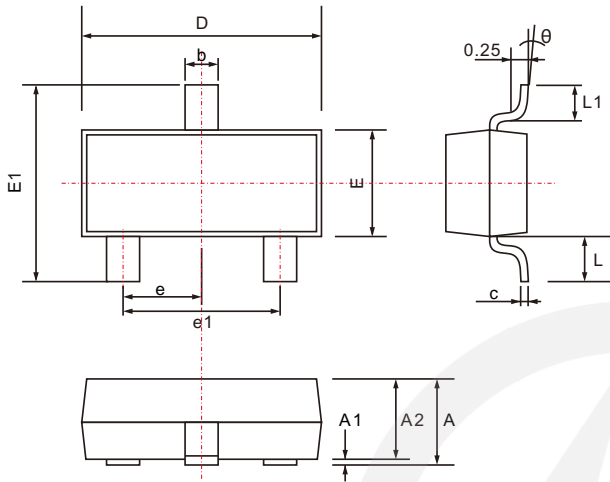
\*Pulse test: pulse width ≤ 300us, duty cycle ≤ 2.0%.

## Typical Characteristics



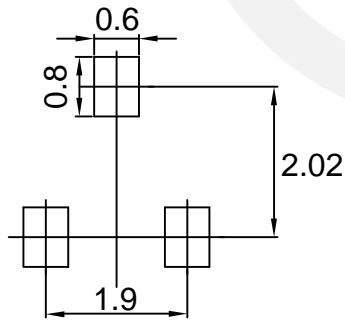
## SOT-23 Package Outline

Unit: mm



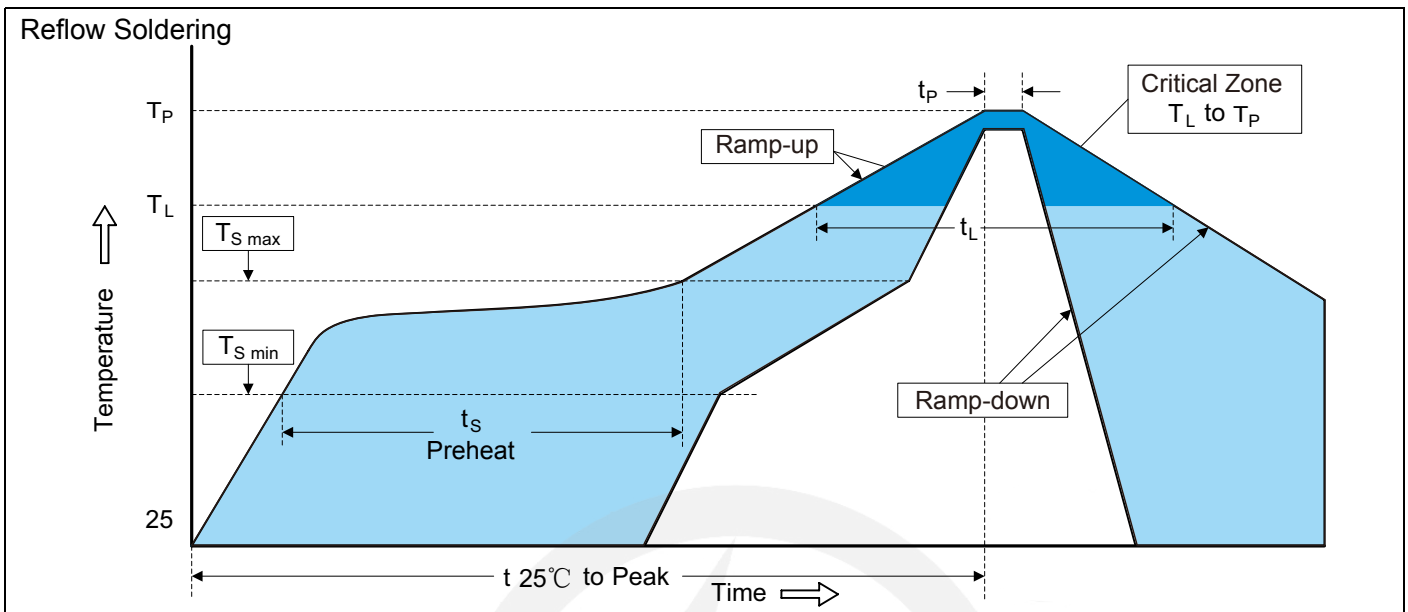
SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.200
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.200
D	2.700	3.100
E	1.200	1.400
E1	2.200	3.000
e	0.950 TYP.	
e1	1.750	2.050
L	0.550 TYP.	
L1	0.300	0.500
$\theta$	0°	8°

## SOT-23 Suggested Pad Layout

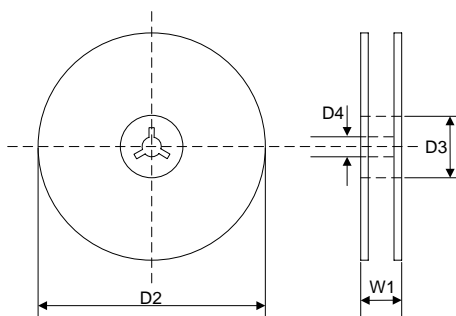


Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference purpose only.

**Recommended Soldering Conditions**

**Recommended Conditions**

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

**7" Reel**


D2	$\Phi 178.0 \pm 2.0$
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D3	$\Phi 50.0 \text{ Min.}$
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D4	$\Phi 13.0 \pm 0.5$
----	---------------------

W1	$16.0 \pm 2.0$
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Quantity: 3000PCS