

# MMBTA92

## SOT-23 Plastic-Encapsulate Transistors(PNP)

### General description

SOT-23 Plastic-Encapsulate Transistors(NPN)

### FEATURES

- Complementary to MMBTA42
- Power Dissipation of 300mW
- High Stability and High Reliability
- SOT-23 Small Outline Plastic Package
- Epoxy UL: 94V-0



### DEVICE MARKING CODE:

Device Type	Device Marking
MMBTA92	2D

### Maximum Ratings & Thermal Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified.)

Parameters	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CBO</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>	-200	mA
Collector Power Dissipation	P <sub>C</sub>	300	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>	417	°C/W

### Electrical Characteristics

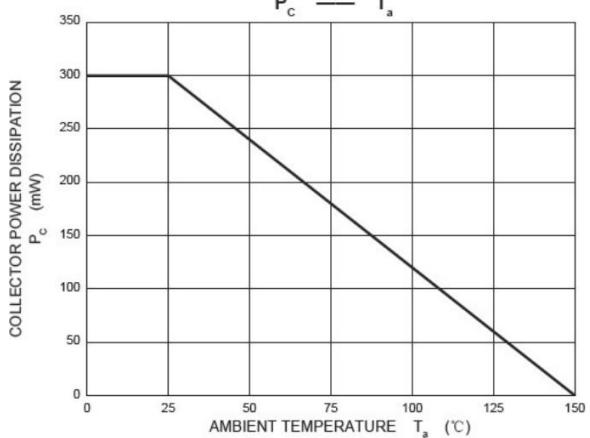
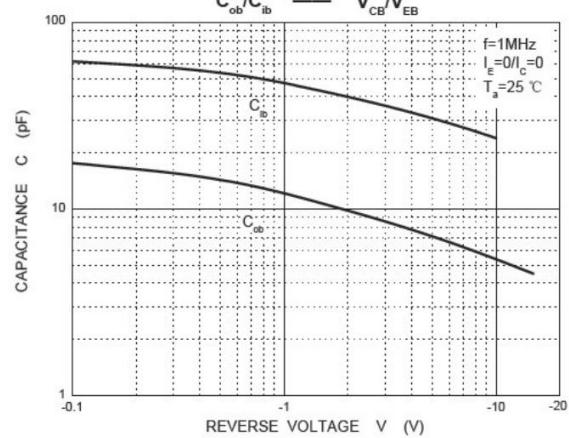
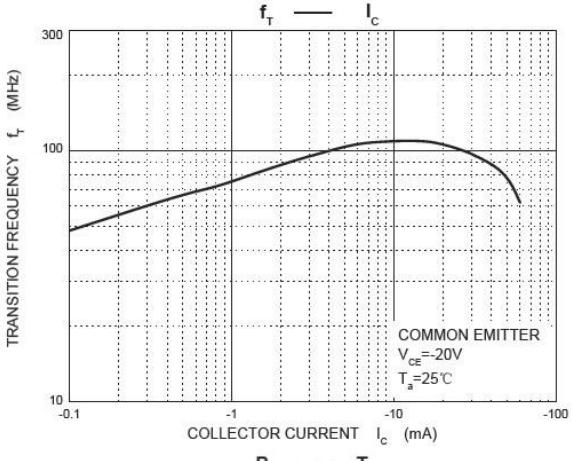
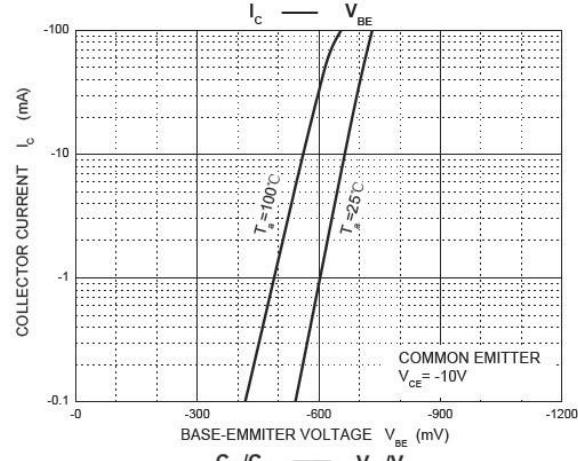
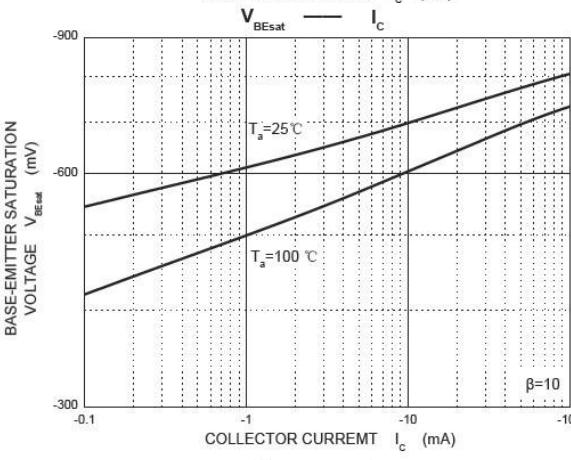
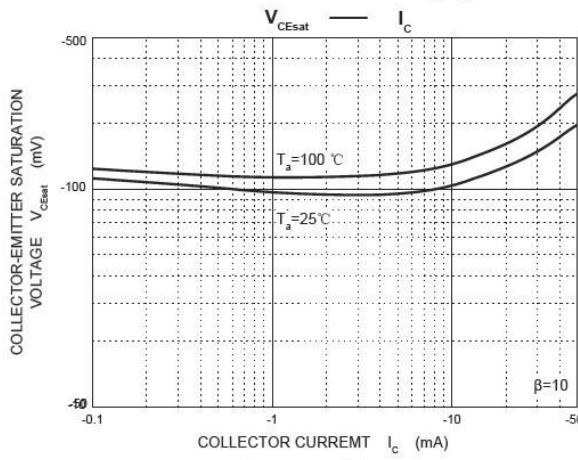
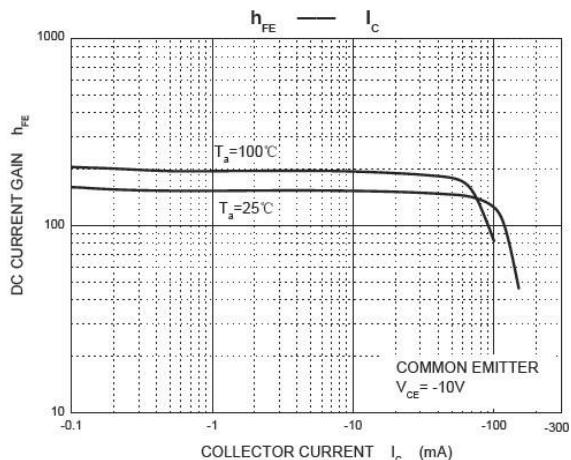
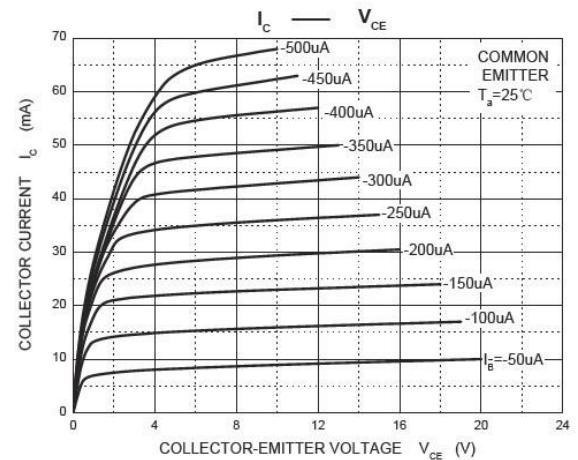
(Ratings at 25°C ambient temperature unless otherwise specified.)

Parameter	Symbols	Test Condition	Limits		Unit
			Min	Max	
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =-100uA, I <sub>E</sub> =0	-300		V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =-1mA, I <sub>B</sub> =0	-300		V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	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%

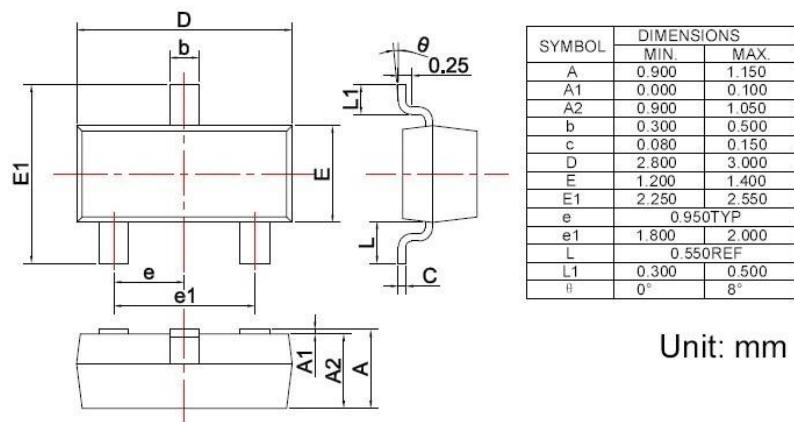
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## TYPICAL CHARACTERISTIC



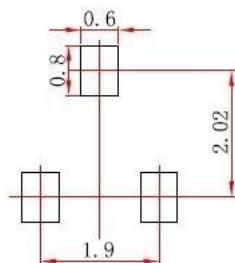
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## SOT-23 PACKAGE OUTLINE Plastic surface mounted package



### Precautions: PCB Design

Recommended land dimensions for SOT-23 diode. Electrode patterns for PCBs



#### Note:

1. Controlling dimension: In millimeters.
2. General tolerance:  $\pm 0.05$  mm.
3. The pad layout is for reference purposes only.

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