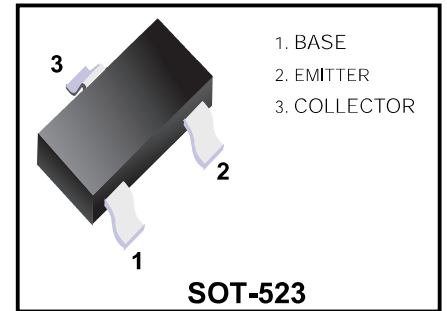


**NPN Transistor**



**Features**

- Small Package
- Complementary to MMBT3906T

<b>Marking Code</b>	
MMBT3904T	1N

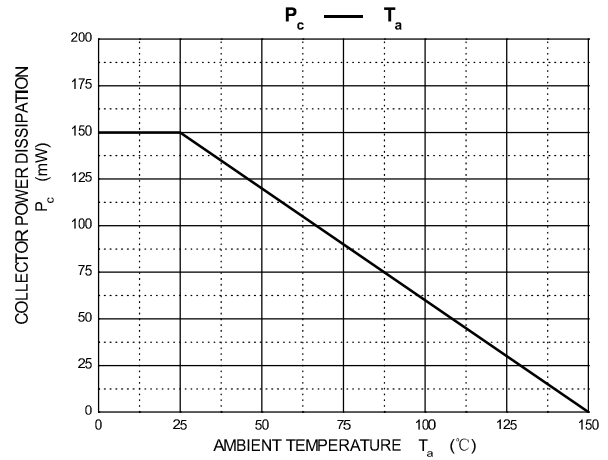
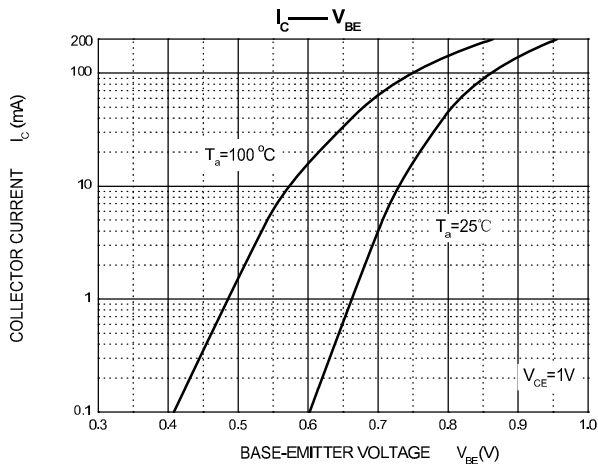
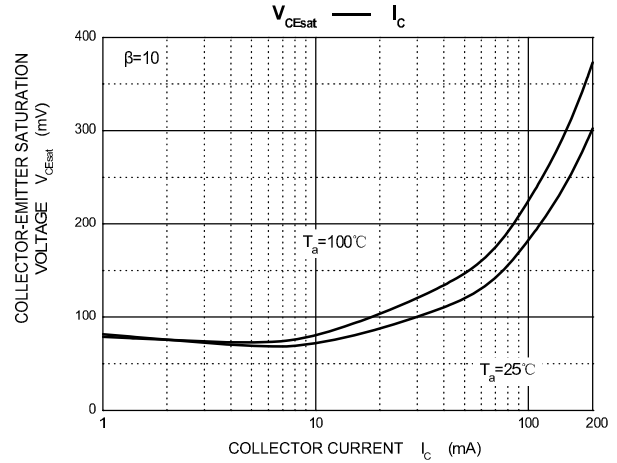
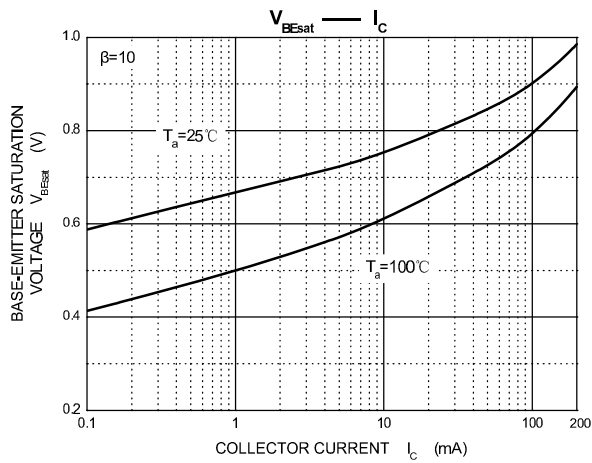
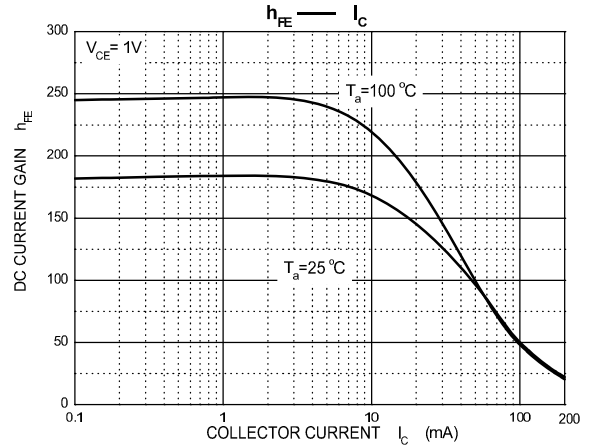
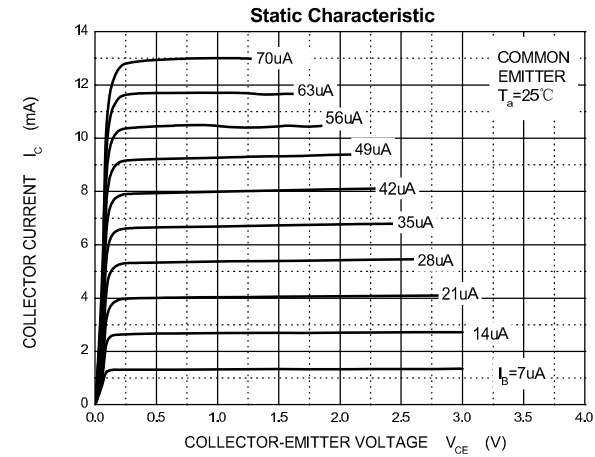
**Absolute Maximum Ratings Ta=25°C**

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V <sub>CBO</sub>	60	V
Collector - Emitter Voltage	V <sub>CEO</sub>	40	
Emitter - Base Voltage	V <sub>EB0</sub>	6	
Collector Current - Continuous	I <sub>c</sub>	200	mA
Collector Power Dissipation	P <sub>c</sub>	150	mW
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	833	°C/W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to 150	

**Electrical Characteristics Ta=25°C**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V <sub>CB0</sub>	I <sub>c</sub> = 100 μA, I <sub>E</sub> = 0	60			V
Collector- emitter breakdown voltage	V <sub>CEO</sub>	I <sub>c</sub> = 1 mA, I <sub>B</sub> = 0	40			
Emitter - base breakdown voltage	V <sub>EB0</sub>	I <sub>E</sub> = 100 μA, I <sub>C</sub> = 0	6			
Collector-base cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = 60 V, I <sub>E</sub> = 0			100	nA
Collector cut-off current	I <sub>CEx</sub>	V <sub>CE</sub> = 30 V, V <sub>EB(off)</sub> =3V			50	
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = 5V, I <sub>C</sub> =0			100	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =10 mA, I <sub>B</sub> =1mA			0.2	V
		I <sub>C</sub> = 50 mA, I <sub>B</sub> = 5mA			0.3	
Base - emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =10 mA, I <sub>B</sub> =1mA	0.65		0.85	
		I <sub>C</sub> = 50 mA, I <sub>B</sub> = 5mA			0.95	
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 0.1mA	40			
	h <sub>FE(2)</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 1mA	70			
	h <sub>FE(3)</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 10mA	100		300	
	h <sub>FE(4)</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 50mA	60			
Delay time	t <sub>d</sub>	V <sub>CC</sub> =3V, V <sub>BE(off)</sub> =-0.5V			35	nS
Rise time	t <sub>r</sub>	I <sub>C</sub> =10mA, I <sub>B1</sub> =1mA			35	
Storage time	t <sub>s</sub>	V <sub>CC</sub> =3V, I <sub>C</sub> =10mA, I <sub>B1</sub> =I <sub>B2</sub> =1mA			200	
Fall time	t <sub>f</sub>				50	
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 5V, I <sub>E</sub> = 0, f=1MHz			4	pF
Base input capacitance	C <sub>ib</sub>	V <sub>EB</sub> =0.5V, I <sub>C</sub> =0, f=1MHz			8	
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 20V, I <sub>C</sub> = 10mA, f=100MHz	300			MHz

**Typical Characteristics**



**Ordering information**

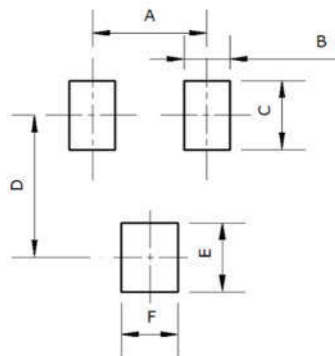
Package	Packing Description	Base Quantity	Packing Quantity
SOT-523	Tape/Reel,7"reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

**Package Dimensions**

**SOT-523**

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	1.50	1.70	59	67
B	0.75	0.85	30	33
C	1.45	1.75	57	69
D	0.50TYP		0.020TYP	
E	0.90	1.10	35	43
G	0.00	0.10	0	4
H	0.60	0.80	24	31
J	0.10	0.20	4	8
K	0.15	0.35	6	14
L	0.26	0.46	10	18

**The recommended mounting pad size**



Millimeter (mm)	
Dim.	TYP
A	1.00
B	0.40
C	0.60
D	1.24
E	0.60
F	0.50

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