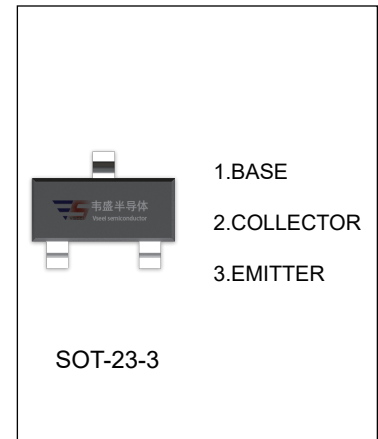


# MMBT5551 TRANSISTOR (NPN)

## FEATURES

- Complementary to MMBT5401
- Ideal for Medium Power Amplification and Switching



## MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	180	V
V <sub>CEO</sub>	Collector-Emitter Voltage	160	V
V <sub>EBO</sub>	Emitter-Base Voltage	6	V
I <sub>C</sub>	Collector Current	600	mA
P <sub>C</sub>	Collector Power Dissipation	300	mW
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient	416	°C/W
T <sub>J</sub> , T <sub>stg</sub>	Operation Junction and Storage Temperature Range	-55~+150	°C

## ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)

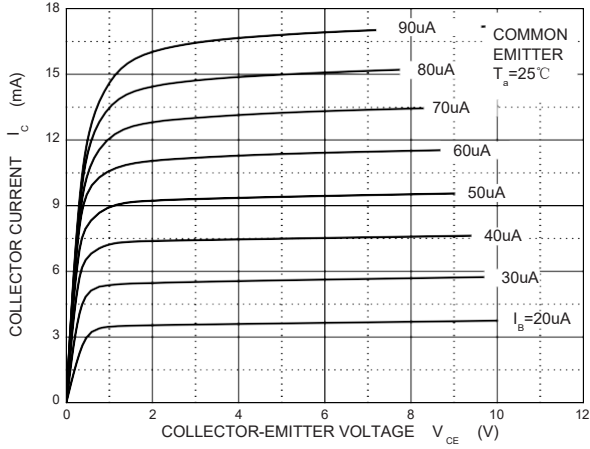
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =100μA, I <sub>E</sub> =0	180			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub> *	I <sub>C</sub> =1mA, I <sub>B</sub> =0	160			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =10μA, I <sub>C</sub> =0	6			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =120V, I <sub>E</sub> =0			50	nA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =4V, I <sub>C</sub> =0			50	nA
DC current gain	h <sub>FE(1)</sub> *	V <sub>CE</sub> =5V, I <sub>C</sub> =1mA	80			
	h <sub>FE(2)</sub> *	V <sub>CE</sub> =5V, I <sub>C</sub> =10mA	100		300	
	h <sub>FE(3)</sub> *	V <sub>CE</sub> =5V, I <sub>C</sub> =50mA	50			
Collector-emitter saturation voltage	V <sub>CE(sat)1</sub> *	I <sub>C</sub> =10mA, I <sub>B</sub> =1mA			0.15	V
	V <sub>CE(sat)2</sub> *	I <sub>C</sub> =50mA, I <sub>B</sub> =5mA			0.2	V
Base-emitter saturation voltage	V <sub>BE(sat)1</sub> *	I <sub>C</sub> =10mA, I <sub>B</sub> =1mA			1	V
	V <sub>BE(sat)2</sub> *	I <sub>C</sub> =50mA, I <sub>B</sub> =5mA			1	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =10mA, f=100MHz	100		300	MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz			6	pF

\*Pulse test: pulse width ≤300μs, duty cycles ≤ 2.0%.

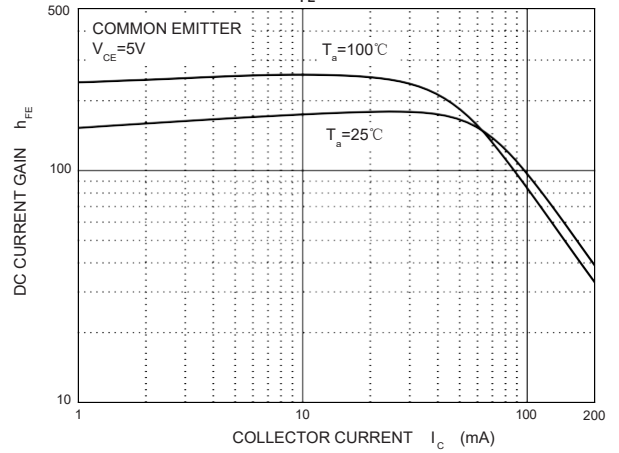
## CLASSIFICATION OF h<sub>FE(2)</sub>

RANK	L	H
RANGE	100-200	200-300

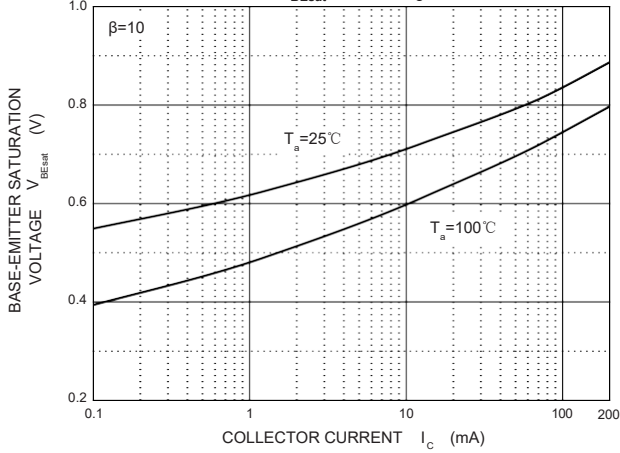
**Static Characteristic**



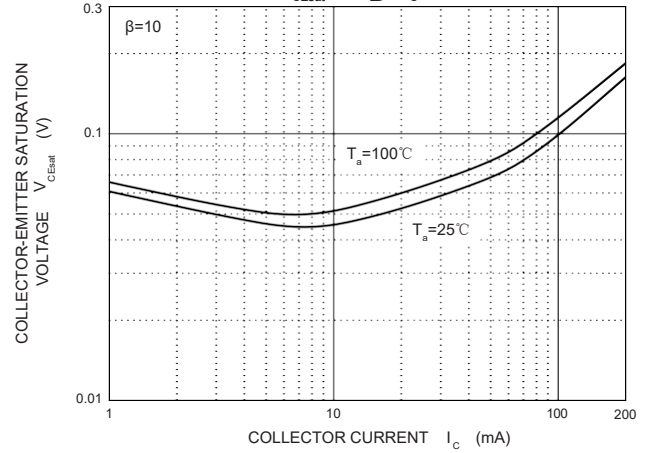
$h_{FE} - I_c$



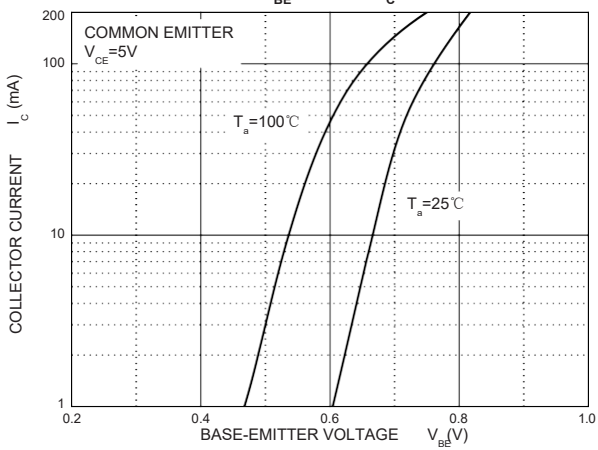
$V_{BEsat} - I_c$



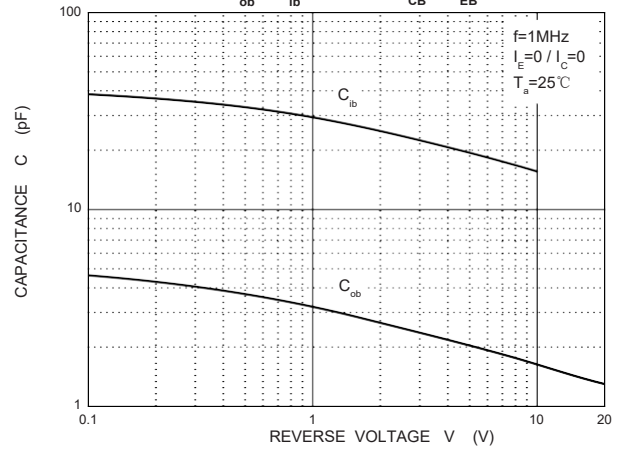
$V_{CEsat} - I_c$



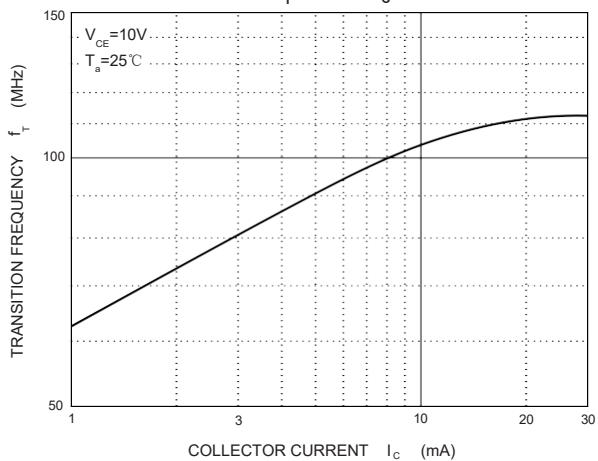
$V_{BE} - I_c$



$C_{ob} / C_{ib} - V_{CB} / V_{EB}$



$f_T - I_c$



$P_c - T_a$

