



**浩畅半导体**  
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**MMBT5551** TRANSISTOR (NPN)

**SOT-23 Plastic-Encapsulate Transistors**

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客户确认：

公司签章：

部门

工程部

品保部

采购部

签名

日期

SOT-23 Plastic-Encapsulate Transistors**MMBT5551** TRANSISTOR (NPN)**FEATURES**

- Complementary to MMBT5401
- Ideal for medium power amplification and switching

**MARKING: G1****MAXIMUM RATINGS** ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	180	V
$V_{CEO}$	Collector-Emitter Voltage	160	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current -Continuous	0.6	A
$P_C$	Collector Power Dissipation	300	mW
$T_j$	Junction Temperature	150	$^{\circ}\text{C}$
$T_{stg}$	Storage Temperature	-55-150	$^{\circ}\text{C}$

**SOT-23**

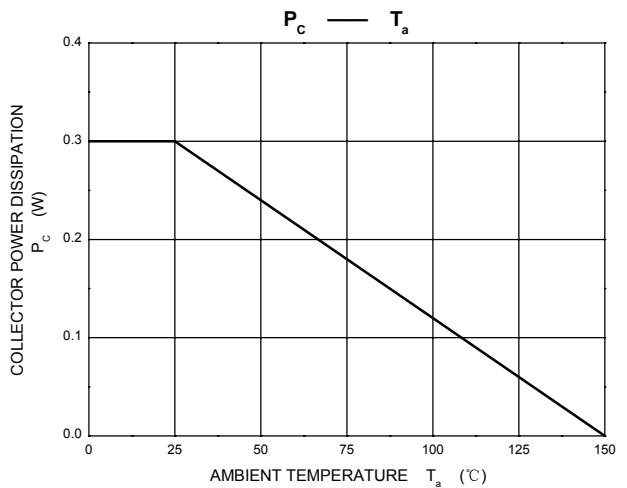
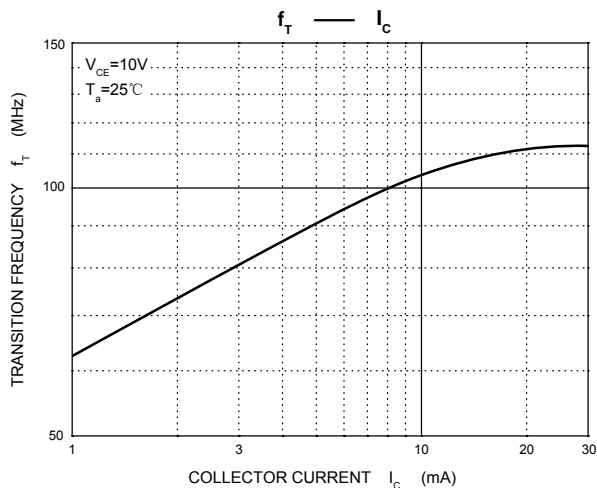
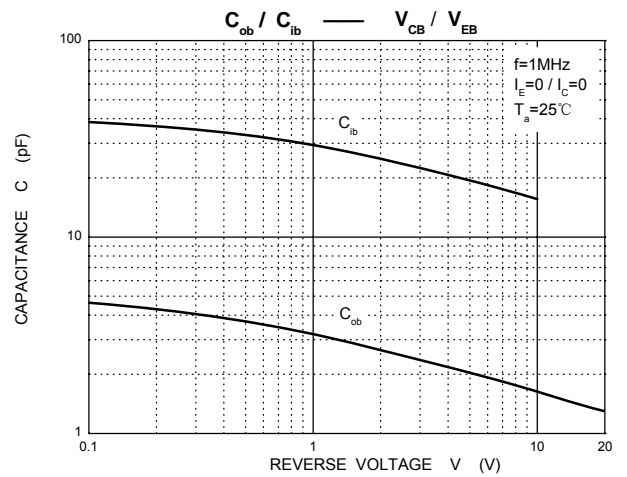
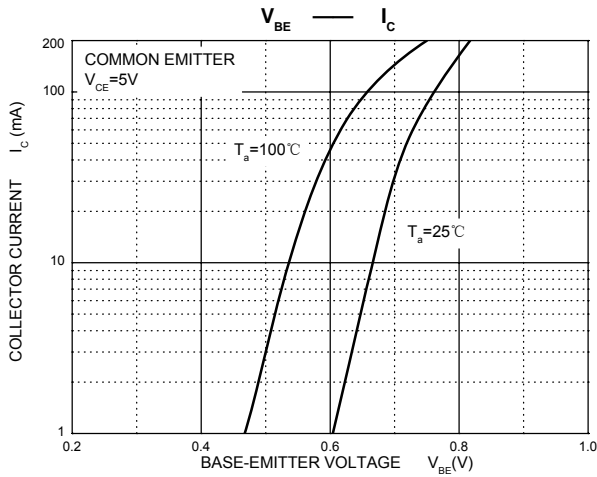
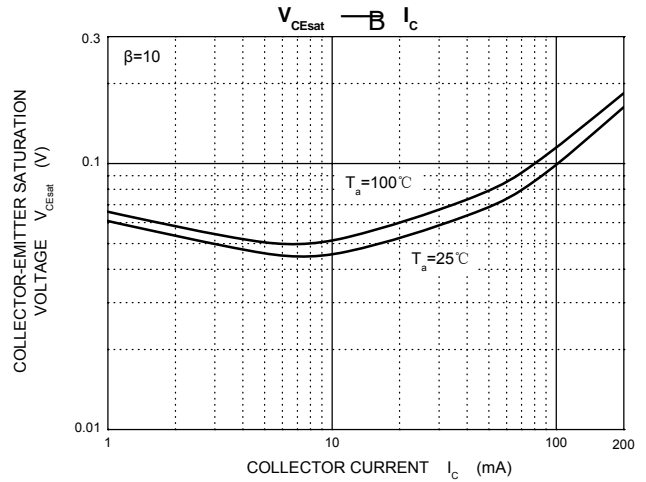
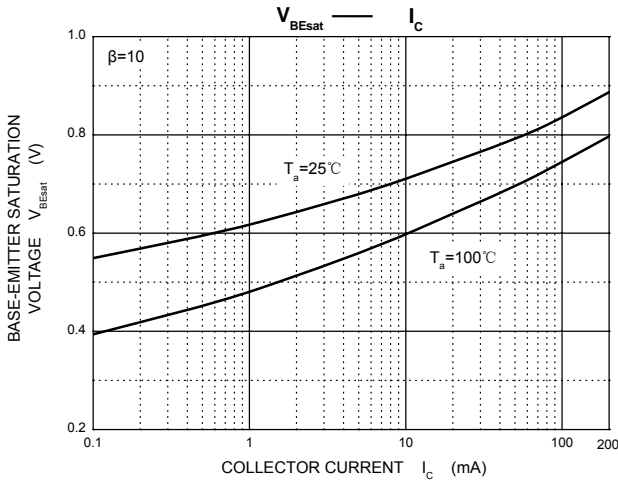
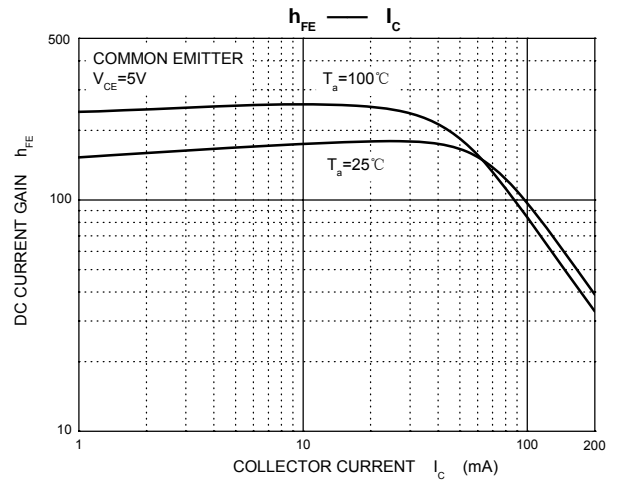
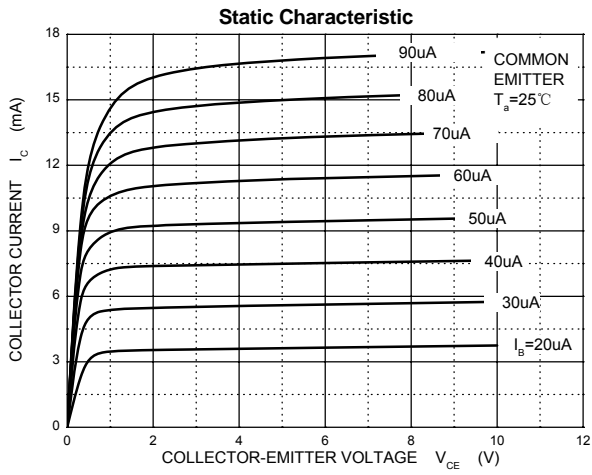
1. BASE
2. EMITTER
3. COLLECTOR

**ELECTRICAL CHARACTERISTICS** ( $T_{amb}=25^{\circ}\text{C}$  unless otherwise specified)

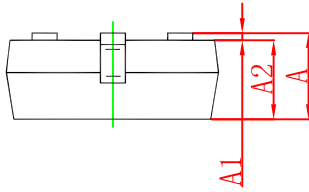
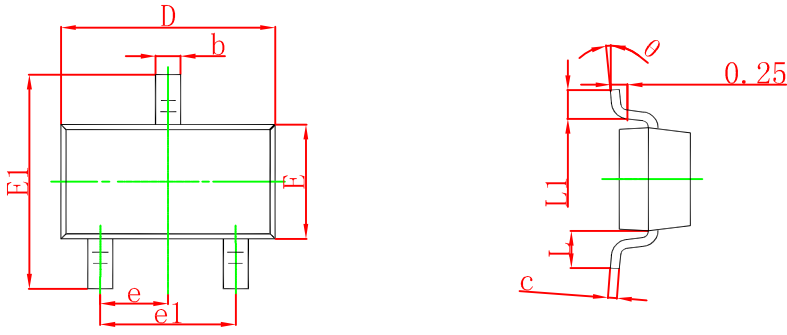
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	180			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}^*$	$I_C=1\text{mA}, I_B=0$	160			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=120\text{V}, I_E=0$			50	nA
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0$			50	nA
DC current gain	$h_{FE1}^*$	$V_{CE}=5\text{V}, I_C=1\text{mA}$	80			
	$h_{FE2}^*$	$V_{CE}=5\text{V}, I_C=10\text{mA}$	100		300	
	$h_{FE3}^*$	$V_{CE}=5\text{V}, I_C=50\text{mA}$	50			
Collector-emitter saturation voltage	$V_{CEsat}^*$	$I_C=10\text{mA}, I_B=1\text{mA}$			0.15	V
		$I_C=50\text{mA}, I_B=5\text{mA}$			0.2	
Base-emitter saturation voltage	$V_{BEsat}^*$	$I_C=10\text{mA}, I_B=1\text{mA}$			1	V
		$I_C=50\text{mA}, I_B=5\text{mA}$			1	
Transition frequency	$f_T$	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	100		300	MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$			6	pF
Input capacitance	$C_{ib}$	$V_{BE}=0.5\text{V}, I_C=0, f=1\text{MHz}$			20	pF
Noise figure	NF	$V_{CE}=5\text{V}, I_C=0.25\text{mA},$ $f=10\text{Hz to }15.7\text{KHz}, R_s=1\text{k}\Omega$			8	dB

\*Pulse test

# Typical Characteristics

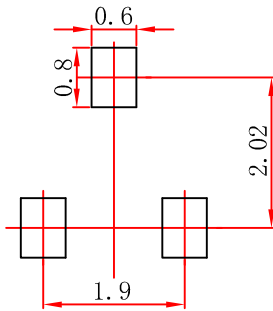


## SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	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 purposes only.