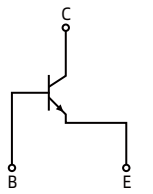
TL-MMBT5551

SOT23 Plastic-Encapsulate Transistors (NPN)

Features

- High Breakdown Voltage.
- Ideal for Medium Power Amplification and Switching.
- Complementary to MMBT5401.

SOT23



Equivalent Circuit

Absolute Maximum Ratings(T_A=25℃)

Symbol	Parameter	Value	Uniat
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	0.6	A
P_C	Collector Power Dissipation	300	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	400	℃/W
T_J,T_{stg}	Operation Junction And Storage Temperature Range	-55 ~ +150	℃/W

Electrical Characteristics (T_A=25℃ unless otherwise specified)

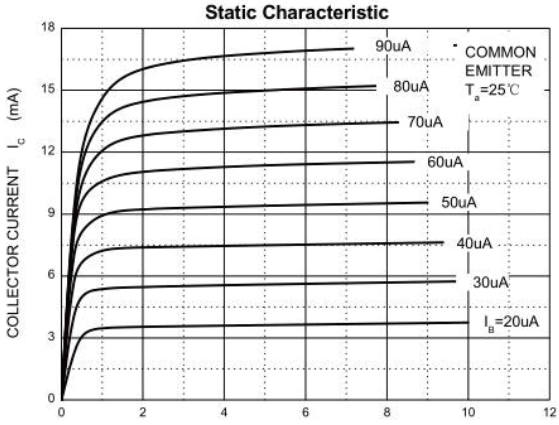
Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C=10μA, I_E=0	180			V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C=1mA, I_B=0	160			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=10μA, I_C=0	6			V
I_{CBO}	Collector cut-off current	V_{CE}=120V, I_E=0			50	nA
I_{EBO}	Collector cut-off current	V_{CB}=4V, I_E=0			50	nA
$h_{FE(1)}$	DC current gain(1)	V_{CE}=5V, I_C=1mA	80			
$h_{FE(2)}$	DC current gain(2)	V_{CE}=5V, I_C=10mA	100		300	
$h_{FE(3)}$	DC current gain(3)	V_{CE}=5V, I_C=50mA	50			
$V_{CE(sat)1}$	Collector-emitter saturation voltage	I_C=10mA, I_B=1mA			0.15	V
$V_{BE(sat)1}$	Base-emitter saturation voltage				1	V
$V_{CE(sat)2}$	Collector-emitter saturation voltage	I_C=50mA, I_B=5mA			0.2	V
$V_{BE(sat)2}$	Base-emitter saturation voltage				1	V
f_T	Transition frequency	V_{CE}=20V, I_C=10mA, f=100MHz	100		1	MHz
C_{ob}	Collector output capacitance	V_{CB}=10V, I_E=0, f=1MHz			6	

Ordering information

Product ID	Pack	Naming rule	Marking	hFE(1)	Qty(PCS)
MMBT5551	SOT23	MMBT5551 产品名称 product name	G1	100 ~ 300	3000

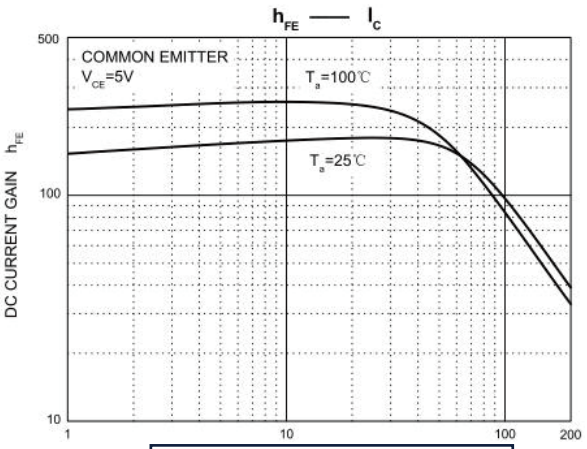
Typical Characteristics

Static Characteristic



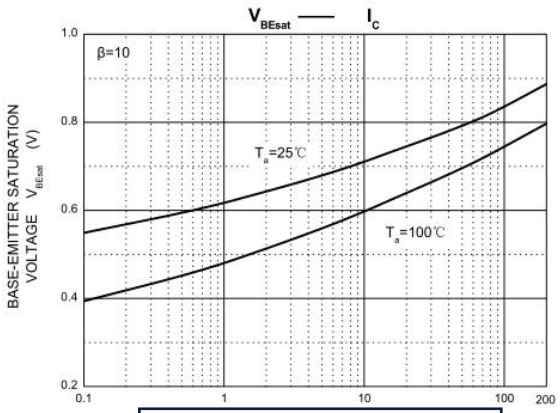
COLLECTOR-EMITTER VOLTAGE V_{CE}(V)

h_{FE} — I_C



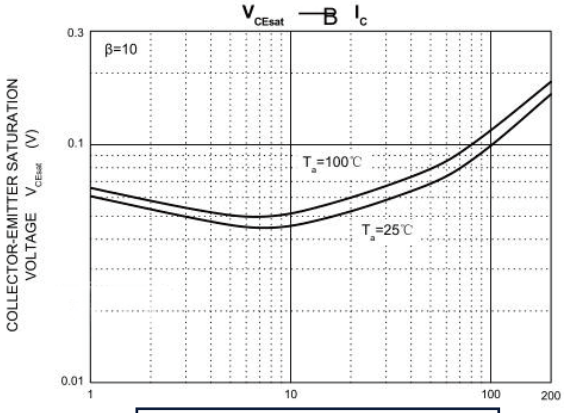
COLLECTOR CURRENT I_C(mA)

V_{BEsat} — I_C



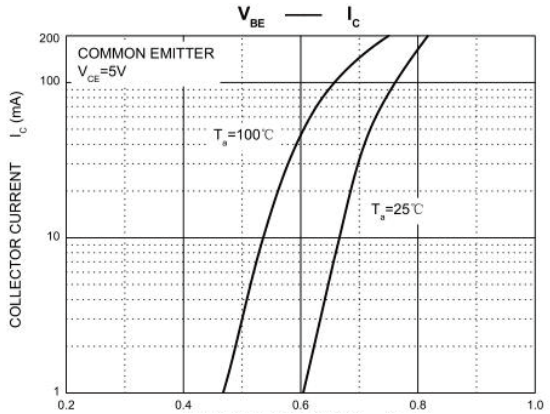
COLLECTOR CURRENT I_C(mA)

V_{CEsat} — I_C



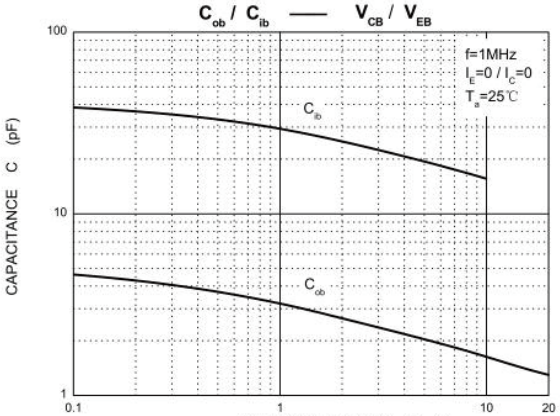
COLLECTOR CURRENT I_C(mA)

V_{BE} — I_C



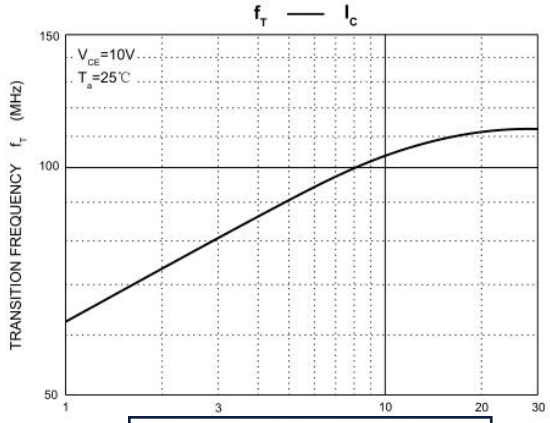
BASE-EMMITER VOLTAGE V_{BE}(V)

C_{ob} / C_{ib} — V_{CB} / V_{EB}



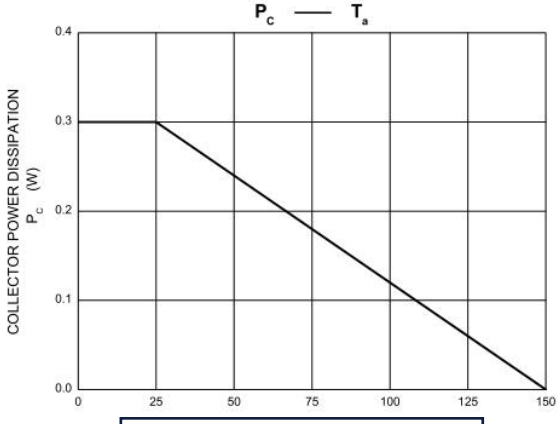
OLTAGE V (V)

f_T — I_C



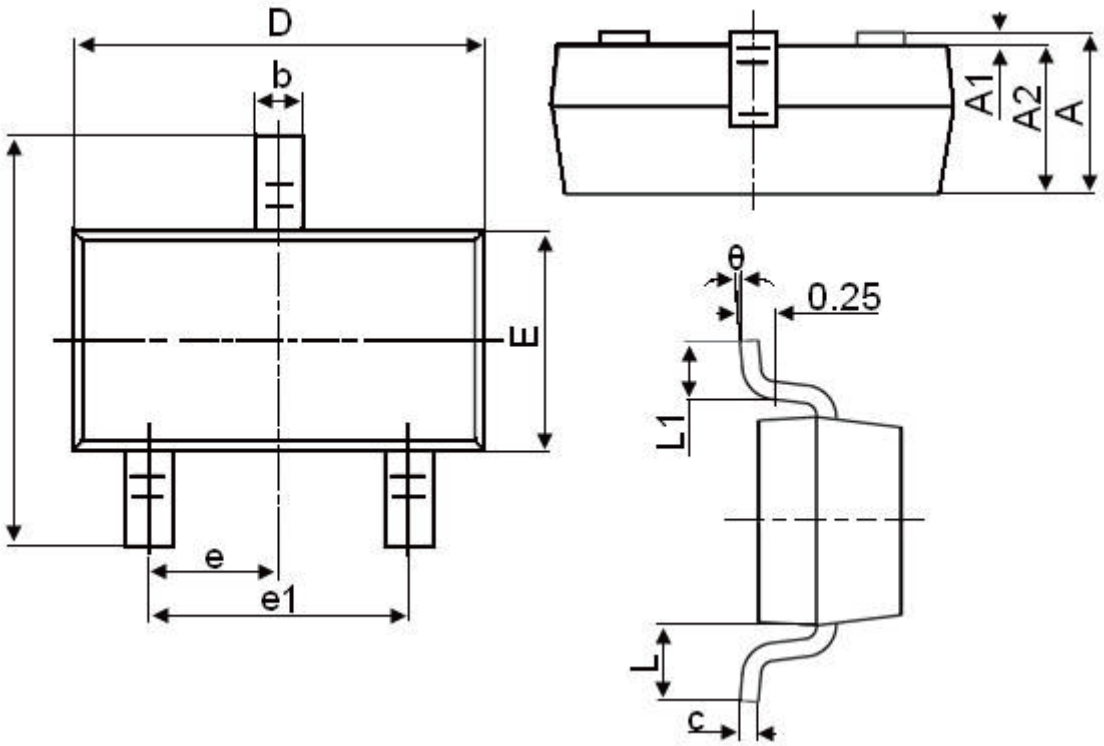
COLLECTOR CURRENT I_C(mA)

P_C — T_a



AMBIENT TEMPERATURE Ta(°C)

SOT23 Package Outline Dimensions



Symbol	Dimensions in Millimeters	
	mm	
	Min	Max
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°