CXT5551 TRANSISTOR (NPN)

1.BASE

2.COLLECTOR

3.EMITTER

SOT-89

FEATURES

- Switching and amplification in high voltage Applications such as telephony
- Low current(max. 600mA)
- High voltage(max.180V)

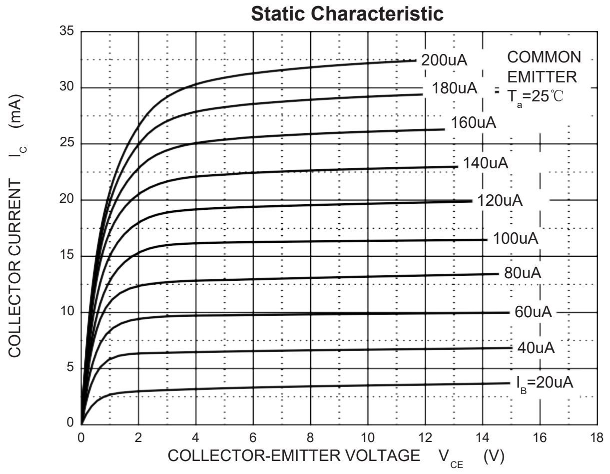
Marking: 1G6

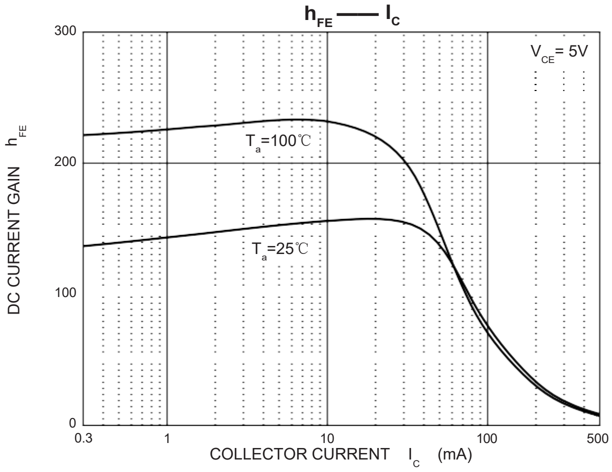
MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

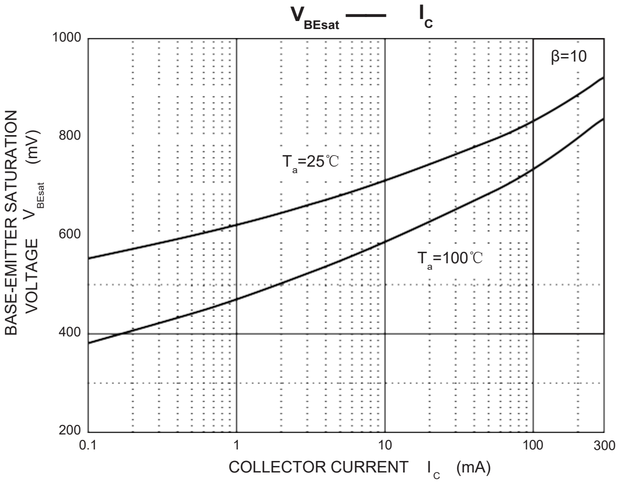
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	180	V
V_{CEO}	Collector-Emitter Voltage	160	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	0.6	A
P_C	Collector Power Dissipation	0.5	W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~150	℃

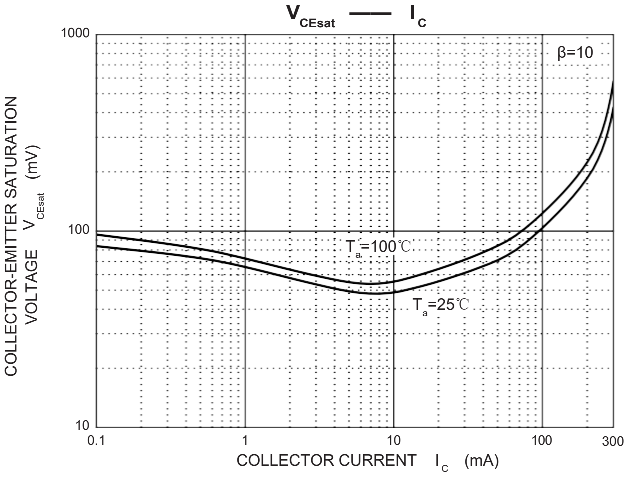
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

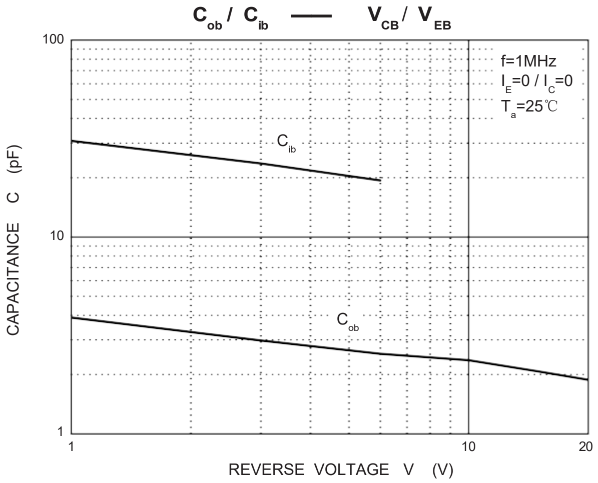
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μ A,I_E=0	180			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA,I_B=0	160			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10 μ A,I_C=0	6			V
Collector cut-off current	I_{CBO}	V_{CB}=120V,I_E=0			50	nA
Emitter cut-off current	I_{EBO}	V_{EB}=4V,I_C=0			50	nA
DC current gain	$h_{FE(1)}$	V_{CE}=5V,I_C=1mA	80			
	$h_{FE(2)}$	V_{CE}=5V,I_C=10mA	100		300	
	$h_{FE(3)}$	V_{CE}=5V,I_C=50mA	30			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=10mA,I_B=1mA			0.15	V
	$V_{CE(sat)}$	I_C=50mA,I_B=5mA			0.2	V
Base-emitter voltage	$V_{BE(sat)}$	I_C=10mA,I_B=1mA			1	V
	$V_{BE(sat)}$	I_C=50mA,I_B=5mA			1	V
Transition frequency	f_T	V_{CE}=10V,I_C=10mA,f=100MHz	100			MHz
Collector output capacitance	C_{ob}	V_{CB}=10V,I_E=0,f=1MHz			6	pF
Noise figure	NF	V_{CE}=5V,I_c=0.2mA, f=10Hzto15.7KHZ,Rs=10Ω			8	dB

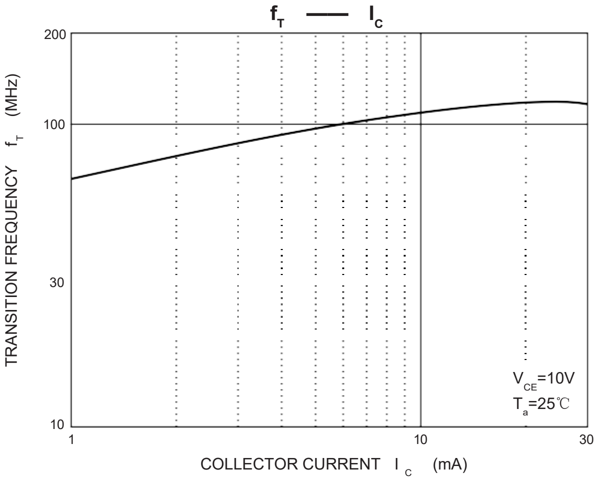

Static Characteristic
COLLECTOR CURRENT I_C (mA)
0
5
10
15
20
25
30
35
COLLECTOR-EMITTER VOLTAGE V_CE (V)
0
2
4
6
8
10
12
14
16
18
COMMON EMITTER
T_a=25℃
200uA
180uA
160uA
140uA
120uA
100uA
80uA
60uA
40uA
I_B=20uA

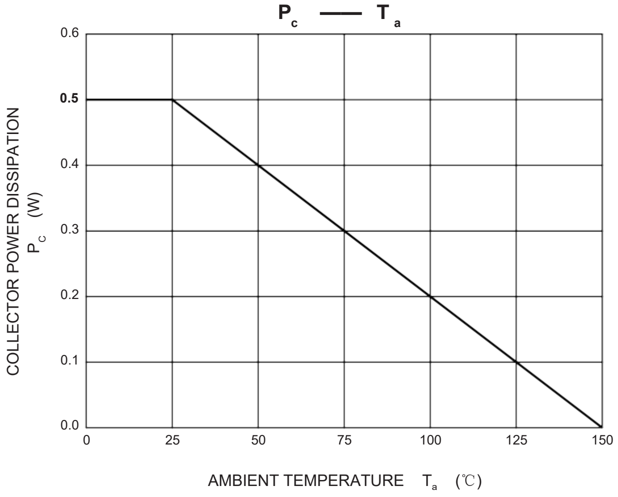

h_FE —— I_C
DC CURRENT GAIN h_FE
0
100
200
300
COLLECTOR CURRENT I_C (mA)
0.3
1
10
100
500
V_CE= 5V
T_a=100℃
T_a=25℃


V_BEsat —— I_C
BASE-EMITTER SATURATION VOLTAGE V_BEsat (mV)
200
400
600
800
1000
COLLECTOR CURRENT I_C (mA)
0.1
1
10
100
300
β=10
T_a=25℃
T_a=100℃


V_CEsat —— I_C
COLLECTOR-EMITTER SATURATION VOLTAGE V_CEsat (mV)
10
100
1000
COLLECTOR CURRENT I_C (mA)
0.1
1
10
100
300
β=10
T_a=100℃
T_a=25℃


C_ob / C_ib —— V_CB / V_EB
CAPACITANCE C (pF)
1
10
100
REVERSE VOLTAGE V (V)
1
10
20
f=1MHz
I_E=0 / I_C=0
T_a=25℃
C_ib
C_ob


f_T —— I_C
TRANSITION FREQUENCY f_T (MHz)
10
30
100
200
COLLECTOR CURRENT I_C (mA)
1
10
30
V_CE=10V
T_a=25℃


P_c —— T_a
COLLECTOR POWER DISSIPATION P_C (W)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
AMBIENT TEMPERATURE T_a (℃)
0
25
50
75
100
125
150