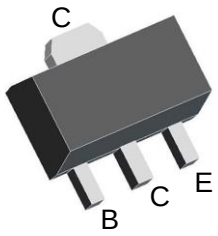
CXT5551

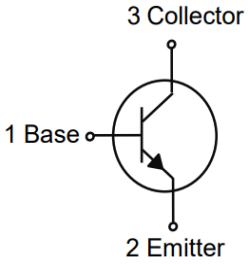
Plastic-Encapsulate Transistors

Features

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



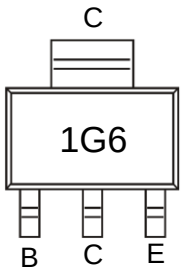
SOT-89-3L top view



Schematic diagram

Application

- High voltage amplifier application



Marking and pin assignment

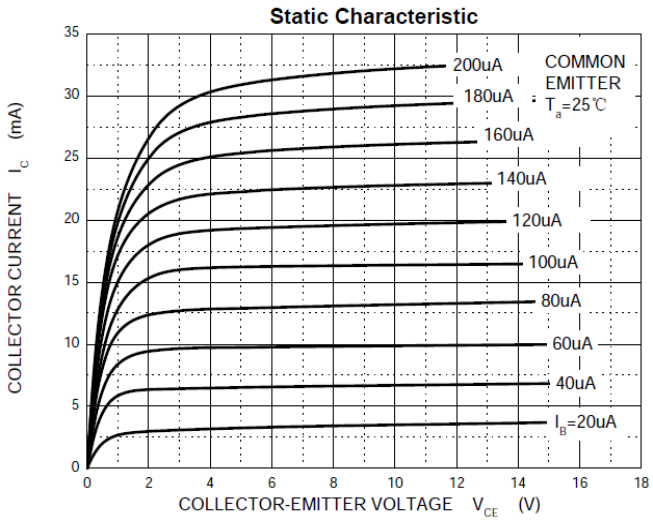
Maximum Ratings(Ta=25℃ unless otherwise noted)

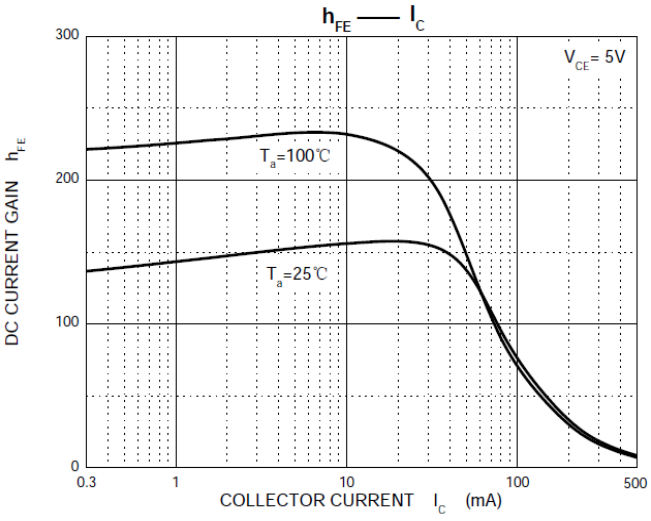
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	180	V
V_{CEO}	Collector-Emitter Voltage	160	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	600	mA
P_C	Collector Power Dissipation	500	mW
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

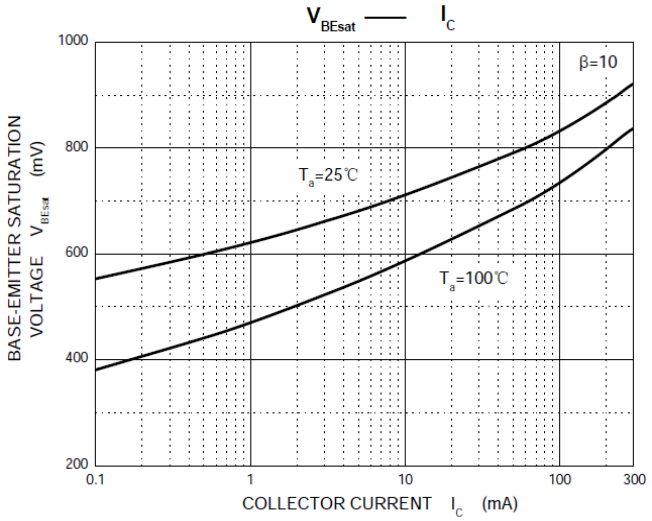
Electrical Characteristics (TJ=25℃ unless otherwise noted)

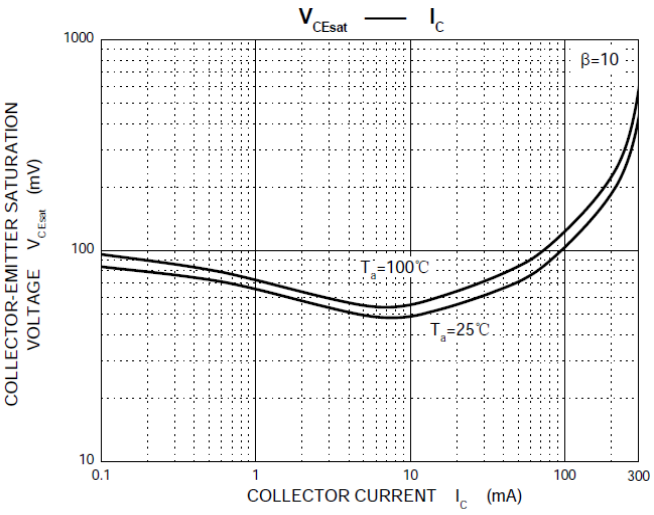
Symbol	Parameter	Condition	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C=100μA, I_E=0	180	--	--	V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C=1mA, I_B=0	160	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=10μA, I_C=0	6	--	--	V
I_{CBO}	Collector cut-off current	V_{CB}=120V , I_E=0	--	--	50	nA
I_{EBO}	Emitter cut-off current	V_{CB}= 4V , I_C=0	--	--	50	nA
h_{FE}	DC current gain	V_{CE}=5V, I_C= 1mA	80	--	--	
		V_{CE}=5V, I_C= 10mA	100	--	300	
		V_{CE}=5V, I_C= 50mA	30	--	--	
$V_{CE(sat)}$	Collector-emitter saturation voltage	I_C=10 mA, I_B= 1mA	--	--	0.15	V
		I_C=50 mA, I_B= 5mA	--	--	0.2	V
$V_{BE(sat)}$	Base-emitter saturation voltage	I_C=10 mA, I_B= 1mA	--	--	1	V
		I_C=50 mA, I_B= 5mA	--	--	1	V
f_T	Transition frequency	V_{CE}=10V, I_C= 10mA f=100MHz	100	--	--	MHz
C_{ob}	Collector output capacitance	VCB=10V,IE=0,f=1MHz	--	--	35	pF
NF	Noise figure	VCE=5V,Ic=0.2mA, f=10Hzto15.7KHZ,Rs=10Ω	--	--	35	dB

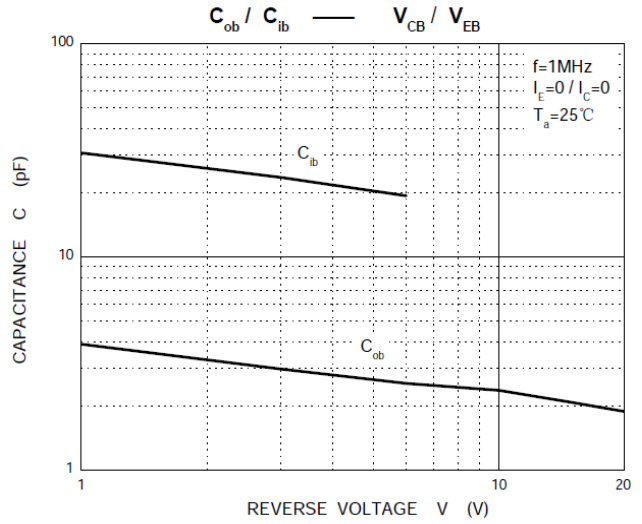
Typical Operating Characteristics

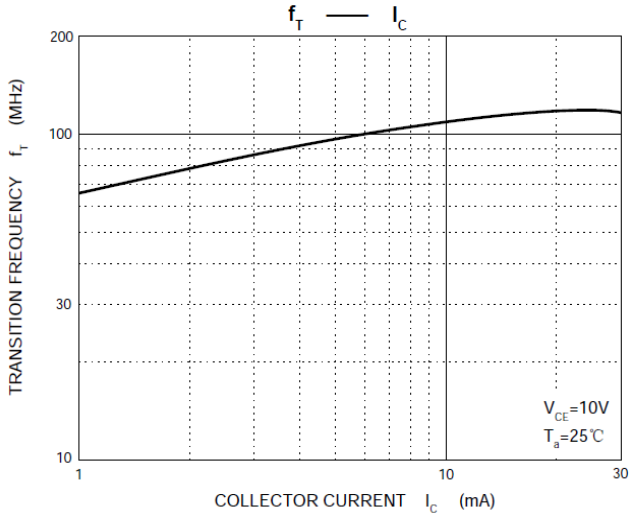


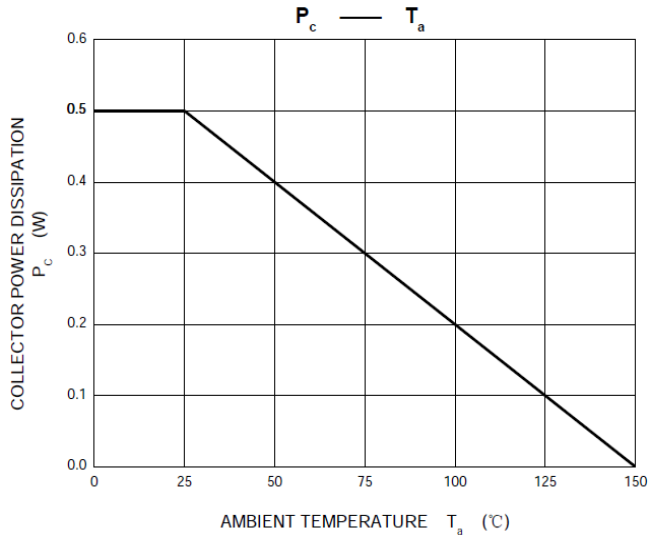



V_{BEsat} —— I_C
β=10
T_a=25℃
T_a=100℃
BASE-EMITTER SATURATION VOLTAGE V_{BEsat} (mV)
COLLECTOR CURRENT I_C (mA)
1000
800
600
400
200
0.1
1
10
100
300

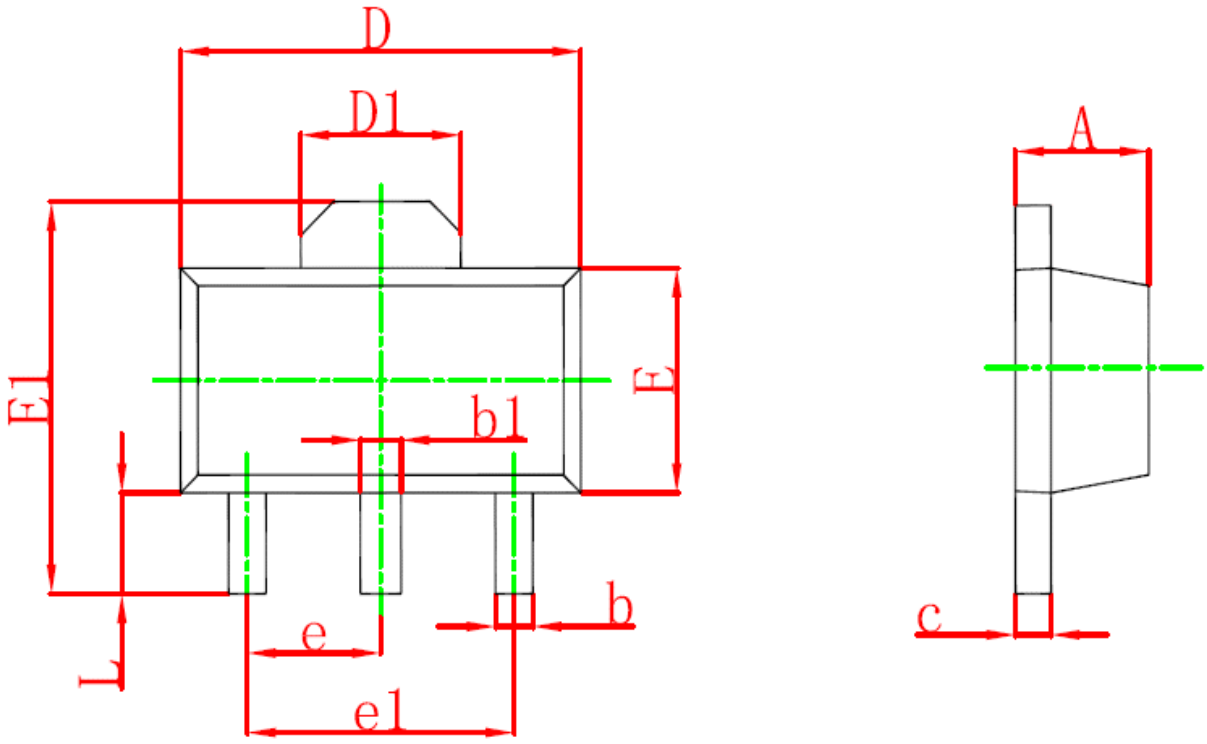

V_{CEsat} —— I_C
β=10
T_a=100℃
T_a=25℃
COLLECTOR-EMITTER SATURATION VOLTAGE V_{CEsat} (mV)
COLLECTOR CURRENT I_C (mA)
1000
100
10
0.1
1
10
100
300


C_{ob} / C_{ib} —— V_{CB} / V_{EB}
f=1MHz
I_E=0 / I_C=0
T_a=25℃
C_{ib}
C_{ob}
CAPACITANCE C (pF)
REVERSE VOLTAGE V (V)
100
10
1
1
10
20


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


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

SOT-89-3L Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions in Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF		0.061 REF	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP		0.060 TYP	
e1	3.000 TYP		0.118 TYP	
L	0.900	1.200	0.035	0.047