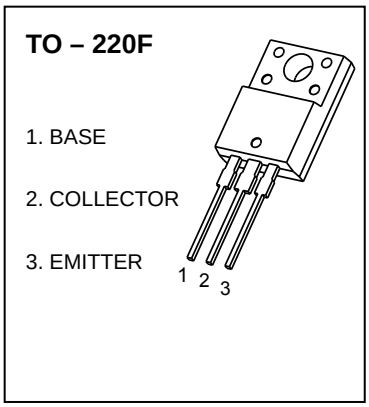
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

TO-220F Plastic-Encapsulate Transistors

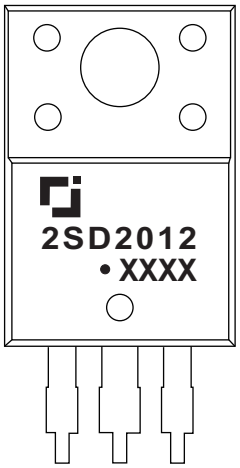
2SD2012 TRANSISTOR (NPN)



FEATURES

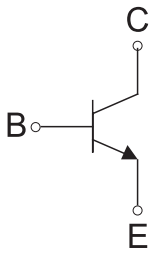
- **Audio frequency power amplifier applications**
- **High DC current gain**
- **Low saturation voltage**
- **High power dissipation**

MARKING



2SD2012=Device code
Solid dot=Green moldinn compound device,
if none,the normal device
XXXX=Code

Equivalent Circuit



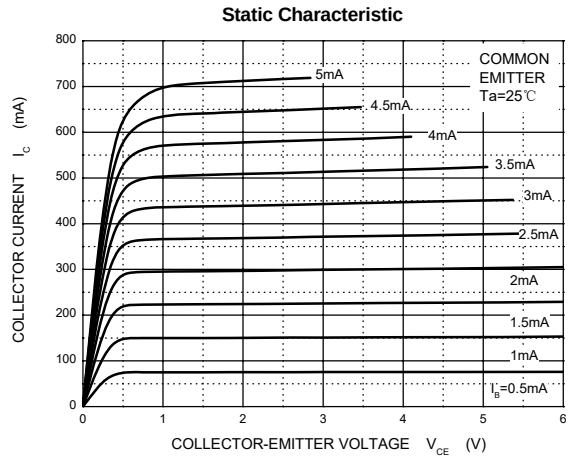
MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

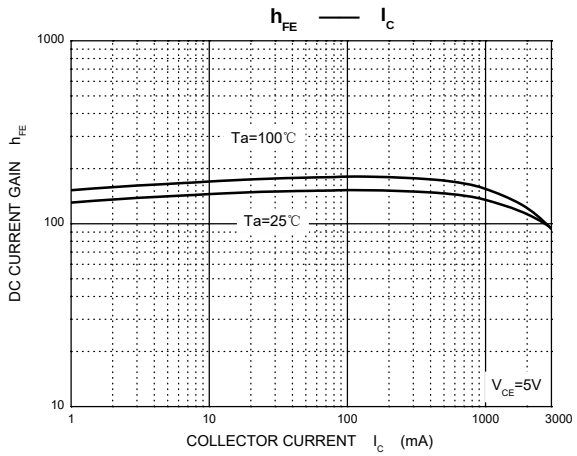
Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current -Continuous	3	A
P_C	Collector power dissipation	2	W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55-150	℃

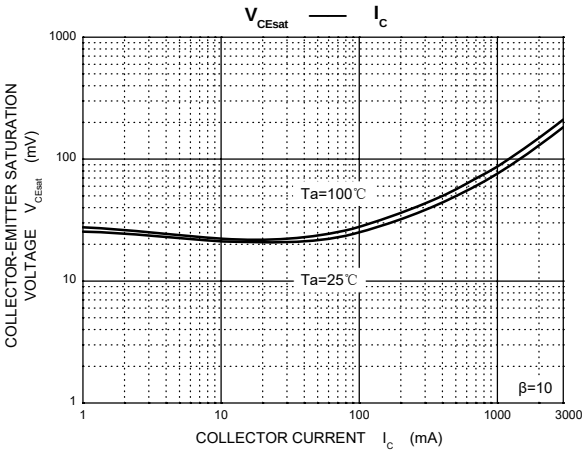
ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

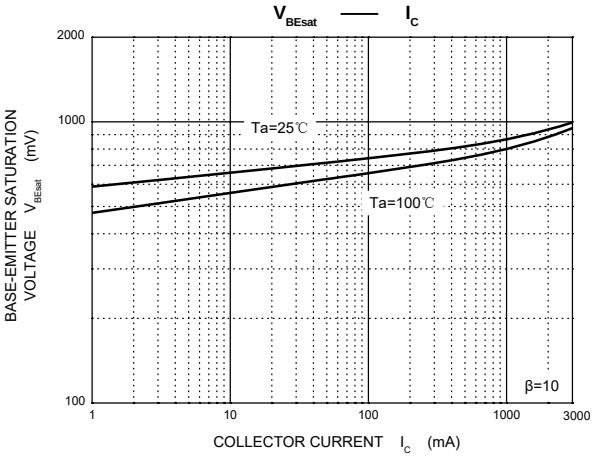
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA , I_E=0	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=50mA, I_B=0[1)]	60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=100μA, I_C=0	7			V
Collector cut-off current	I_{CBO}	V_{CB}=60V, I_E=0			100	μA
Emitter cut-off current	I_{EBO}	V_{EB}=7V, I_C=0			100	μA
DC current gain	h_{FE1}	V_{CE}=5V, I_C=0.5A	100		320	
	h_{FE2}	V_{CE}=5V, I_C=2A	20			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=2A, I_B=0.2A			1	V
Base-emitter voltage	V_{BE}	V_{CE}=5V, I_C=0.5A			1	V
Transition frequency	f_T	V_{CE}=5V, I_C=0.5A		3		MHz
collector capacitance	Cob	$_{CB}$=10V, I_E=0,f=1MHz		35		pF

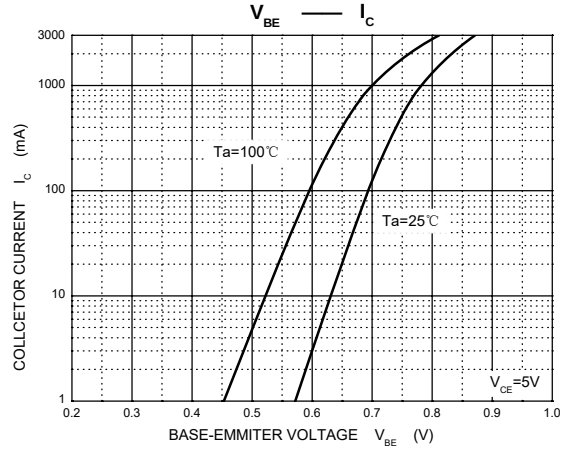
Typical Characteristics

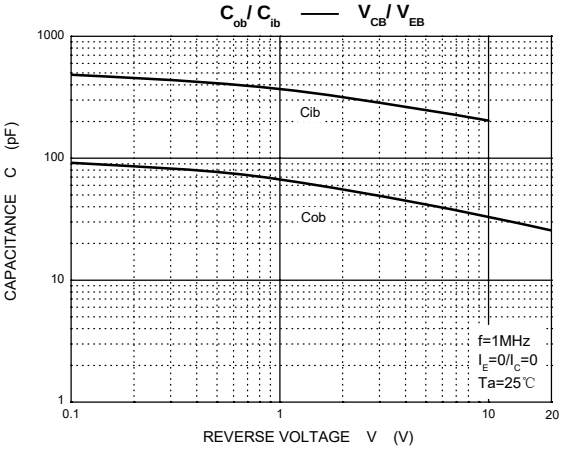


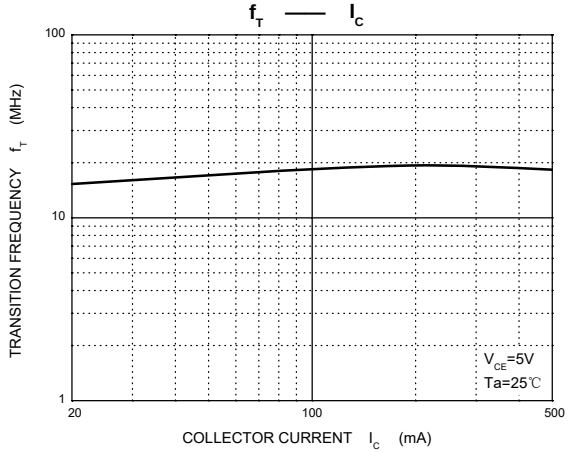


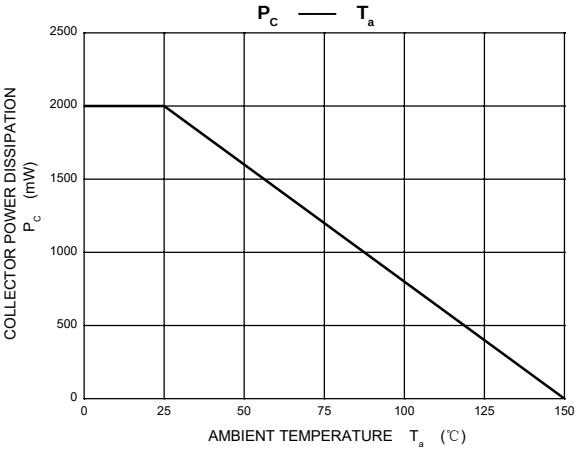




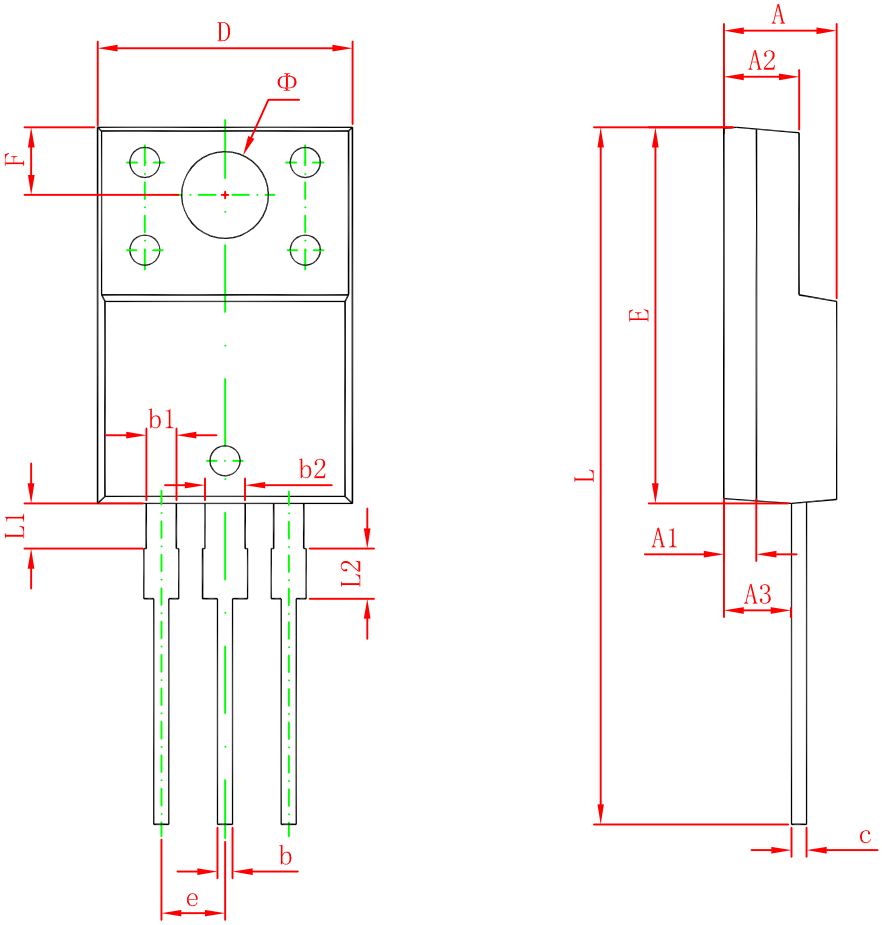








TO-220F Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.300	4.700	0.169	0.185
A1	1.300 REF.		0.051 REF.	
A2	2.800	3.200	0.110	0.126
A3	2.500	2.900	0.098	0.114
b	0.500	0.750	0.020	0.030
b1	1.100	1.350	0.043	0.053
b2	1.500	1.750	0.059	0.069
c	0.500	0.750	0.020	0.030
D	9.960	10.360	0.392	0.408
E	14.800	15.200	0.583	0.598
e	2.540 TYP.		0.100 TYP.	
F	2.700 REF.		0.106 REF.	
Φ	3.300	3.700	0.130	0.146
L	28.000	28.400	1.102	1.118
L1	1.700	1.900	0.067	0.075
L2	0.900	1.100	0.035	0.043