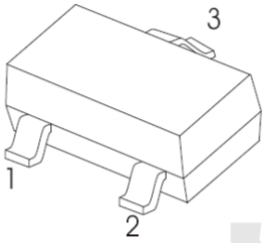
BF820-TP

SOT-23 Plastic-Encapsulate Transistors

FEATURES

- High breakdown voltage
- Low collector-emitter saturation voltage

SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

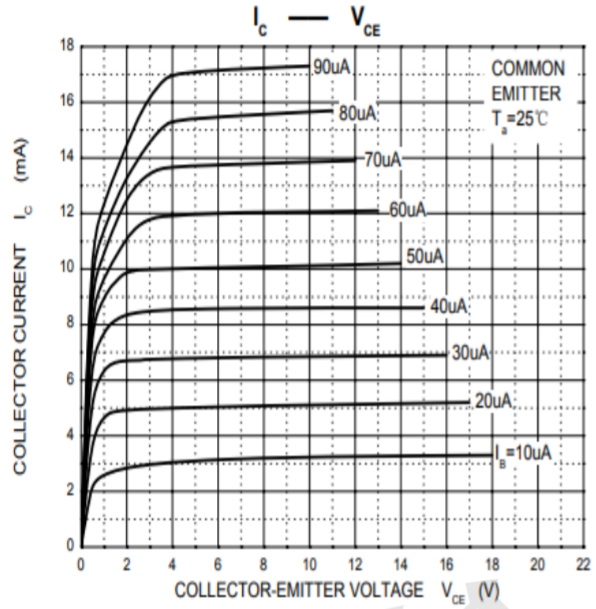
MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

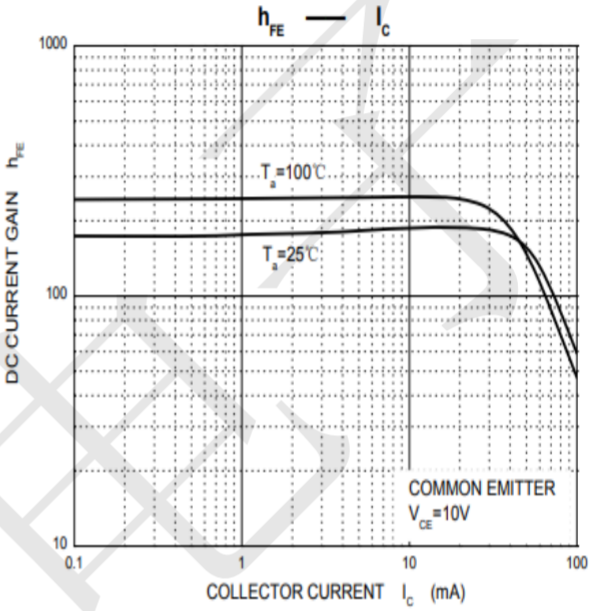
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	300	V
V_{CEO}	Collector-Emitter Voltage	300	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	0.3	A
I_{CM}	Collector Current-Peak	0.5	
P_C	Collector Power dissipation	0.35	W
$R_{\Theta JA}$	Thermal Resistance, junction to Ambient	357	℃/W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55~+150	℃

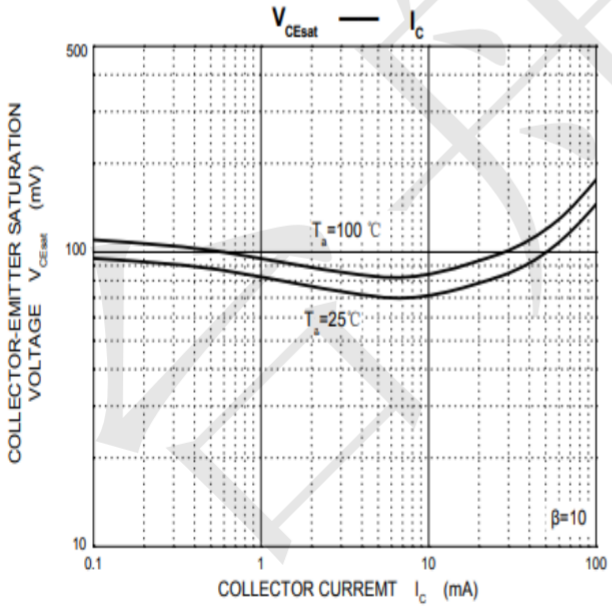
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

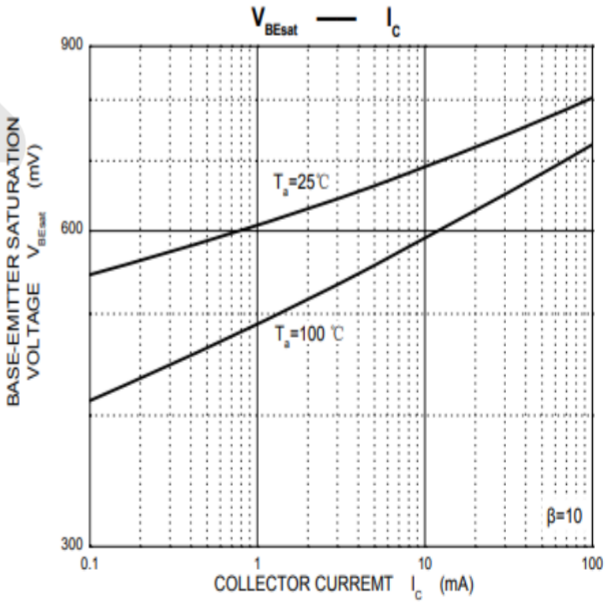
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= 100μA,I_E=0	300		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= 1mA, I_B=0	300		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E= 100μA, I_C=0	5		V
Collector cut-off current	I_{CBO}	V_{CB}=200V, I_E=0		0.25	μA
Emitter cut-off current	I_{EBO}	V_{EB}= 5V, I_C=0		0.1	μA
DC current gain	$h_{FE(1)}$	V_{CE}= 10V, I_C= 1mA	60		
	$h_{FE(2)}$	V_{CE}= 10V, I_C=10mA	100	200	
	$h_{FE(3)}$	V_{CE}=10V, I_C=30mA	60		
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=20mA, I_B= 2mA		0.2	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C= 20mA, I_B=2mA		0.9	V
Transition frequency	f_T	V_{CE}= 20V, I_C= 10mA, f=30MHz	50		MHz

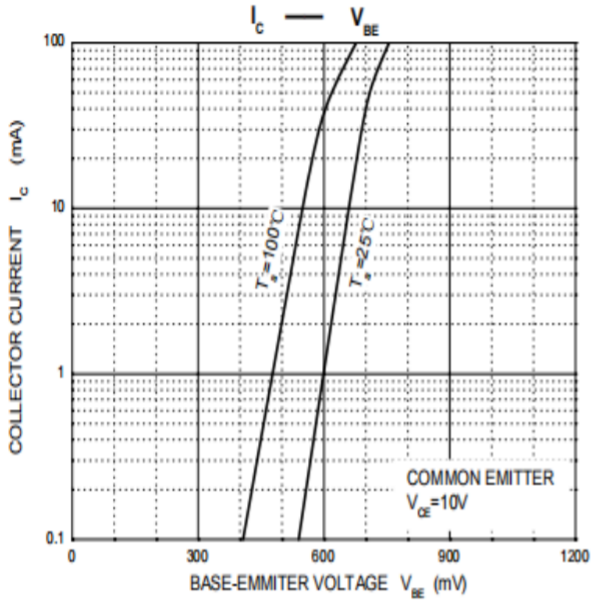
Typical Characteristics

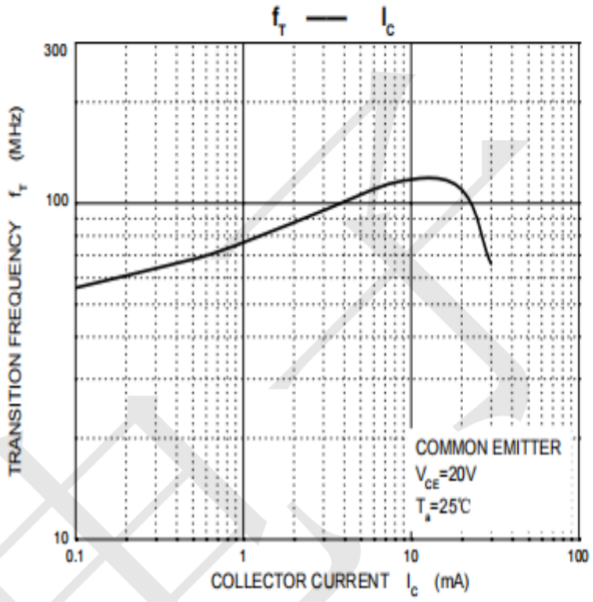


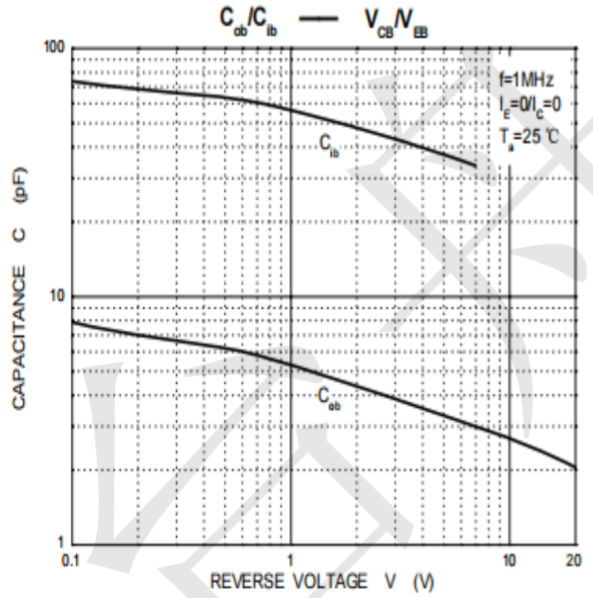


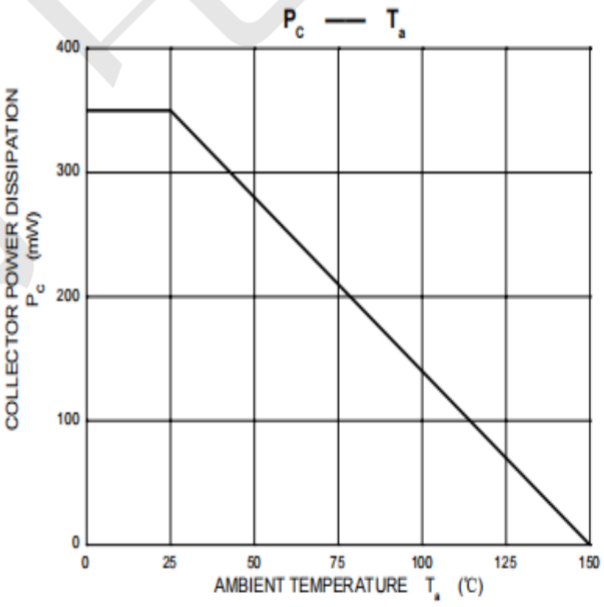





I_C — V_{BE}
COLLECTOR CURRENT I_C (mA)
100
10
1
0.1
0
300
600
900
1200
T_a=100℃
T_a=25℃
COMMON EMITTER
V_{CE}=10V
BASE-EMMITER VOLTAGE V_{BE} (mV)

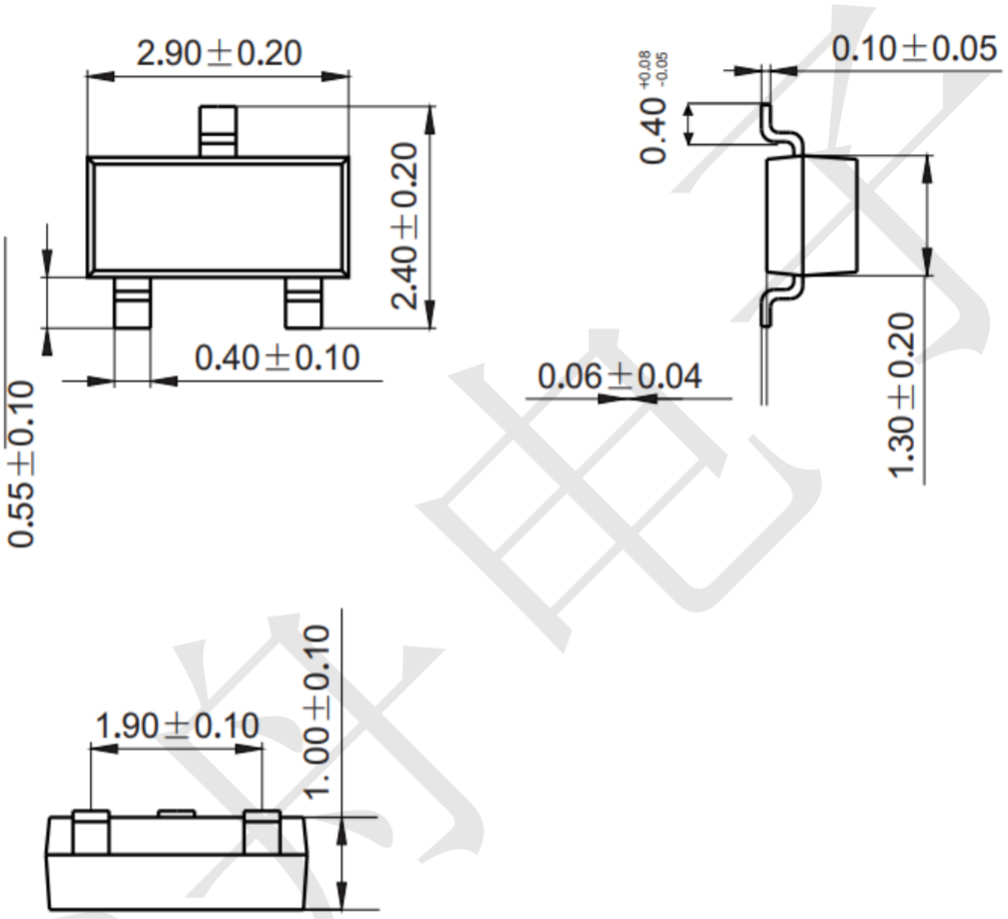

f_T — I_C
TRANSITION FREQUENCY f_T (MHz)
300
100
10
0.1
1
10
100
COMMON EMITTER
V_{CE}=20V
T_a=25℃
COLLECTOR CURRENT I_C (mA)


C_{ob}/C_{ib} — V_{CB}/V_{EB}
CAPACITANCE C (pF)
100
10
1
0.1
1
10
20
f=1MHz
I_E=0/I_C=0
T_a=25 ℃
C_{ib}
C_{ob}
REVERSE VOLTAGE V (V)


P_C — T_a
COLLECTOR POWER DISSIPATION P_C (mW)
400
300
200
100
0
0
25
50
75
100
125
150
AMBIENT TEMPERATURE T_a (℃)

Package information (Unit: mm)

SOT-23



Mounting Pad Layout (Unit: mm)

