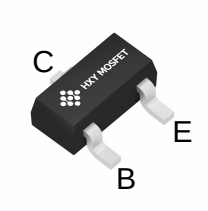
BFS19,215

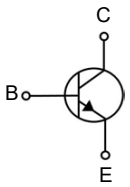
NPN Plastic-Encapsulate Transistors

Features

- Collector Current: I_C=50mA
- Power Dissipation of 225mW



SOT-23



Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
BFS19,215	SOT-23	3EM	3000

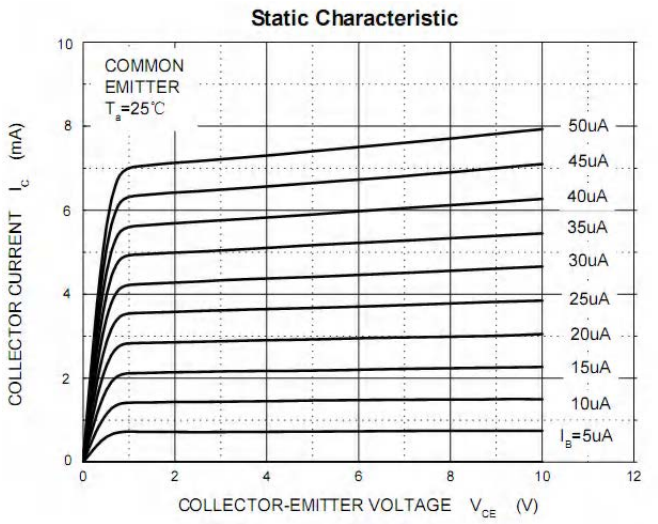
Maximum Ratings (Ta=25℃ unless otherwise noted)

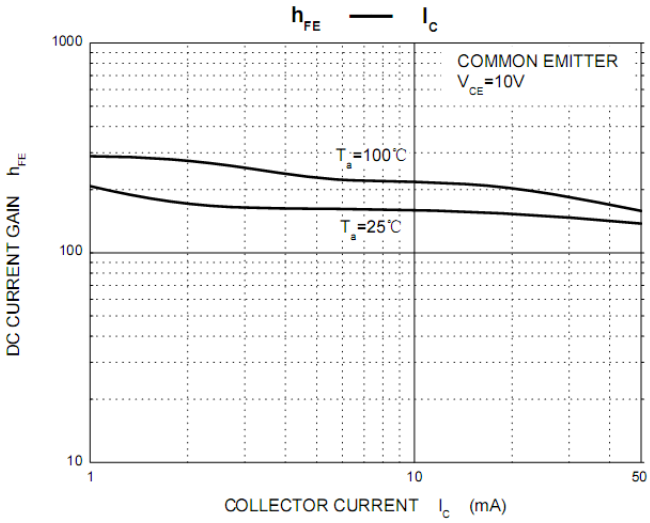
Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	25	V
Emitter-Base Voltage	V_{EBO}	3	V
Collector Current	I_C	50	mA
Collector Power Dissipation	P_C	225	mW
Thermal Resistance From Junction To Ambient	$R_{\Theta JA}$	556	℃/W
Junction Temperature	T_j	150	℃
Storage Temperature	T_{stg}	-55～+150	℃

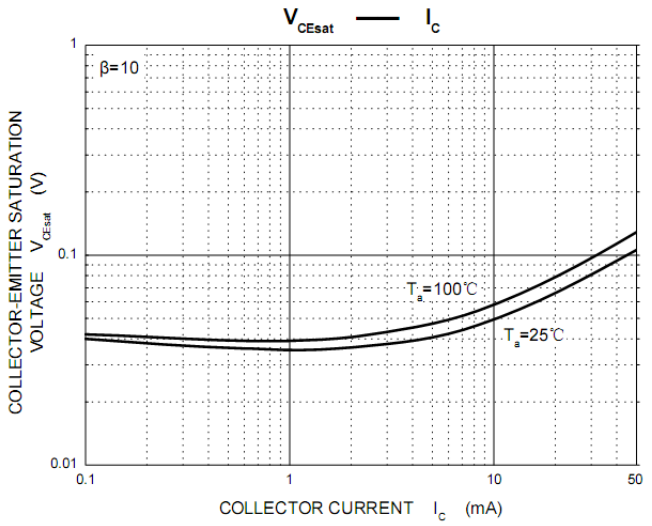
Electrical Characteristics (T_a=25℃ unless otherwise specified)

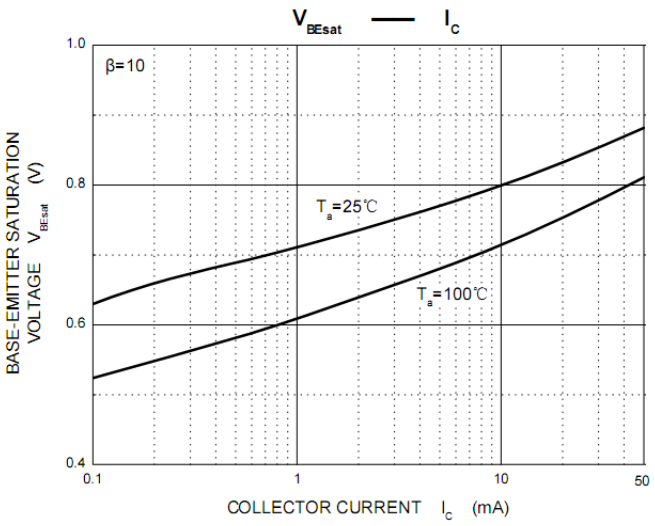
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA, I_E=0	30		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA, I_B=0	25		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	3		V
Collector cut-off current	I_{CBO}	V_{CB}=25V, I_E=0		0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=2V, I_C=0		0.1	μA
DC current gain	h_{FE}	V_{CE}=10V, I_C=4mA	100	200	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=4mA, I_B=0.4mA		0.5	V
Base-emitter voltage	V_{BE}	V_{CE}=10V, I_C=4mA		0.95	V
Transition frequency	f_T	V_{CE}=10V,I_C=4mA f=100MHz	650		MHz
Collector output capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz		0.7	pF

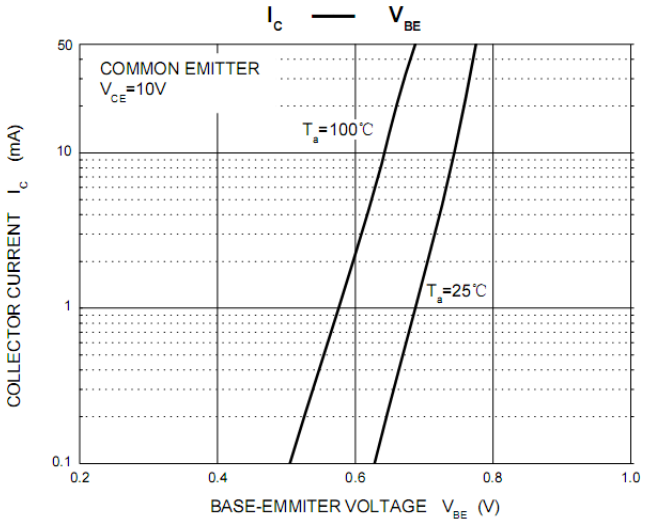
Typical Characteristics

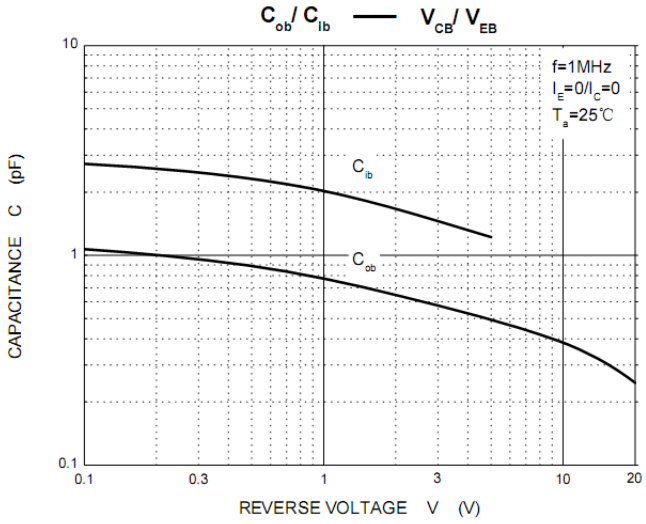


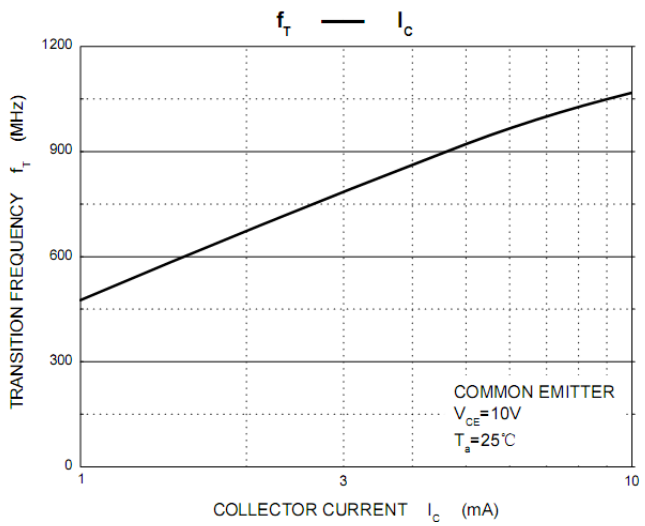


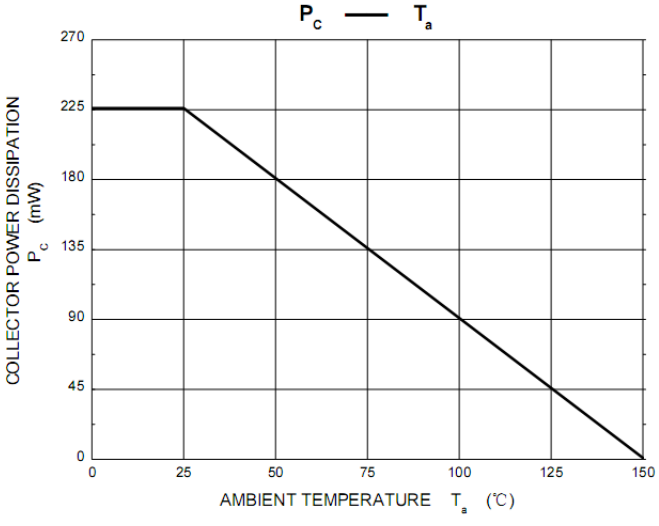

V_{CEsat} — I_C
β=10
T_a=100℃
T_a=25℃
COLLECTOR-EMITTER SATURATION VOLTAGE V_{CEsat} (V)
COLLECTOR CURRENT I_C (mA)
1
0.1
0.01
0.1
1
10
50


V_{BEsat} — I_C
β=10
T_a=25℃
T_a=100℃
BASE-EMITTER SATURATION VOLTAGE V_{BEsat} (V)
COLLECTOR CURRENT I_C (mA)
1.0
0.8
0.6
0.4
0.1
1
10
50

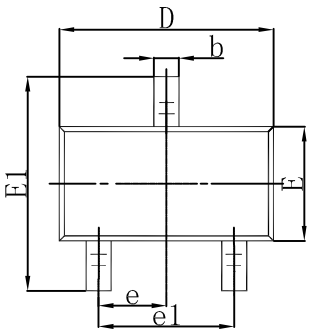

I_C — V_{BE}
COMMON EMITTER
V_{CE}=10V
T_a=100℃
T_a=25℃
COLLECTOR CURRENT I_C (mA)
BASE-EMMITER VOLTAGE V_{BE} (V)
50
10
1
0.1
0.2
0.4
0.6
0.8
1.0

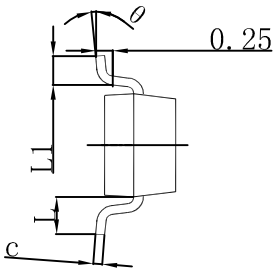

C_{ob}/ C_{ib} — V_{CB}/ V_{EB}
f=1MHz
I_E=0/I_C=0
T_a=25℃
C_{ib}
C_{ob}
CAPACITANCE C (pF)
REVERSE VOLTAGE V (V)
10
1
0.1
0.1
0.3
1
3
10
20

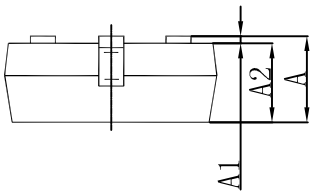

f_T — I_C
COMMON EMITTER
V_{CE}=10V
T_a=25℃
TRANSITION FREQUENCY f_T (MHz)
COLLECTOR CURRENT I_C (mA)
1200
900
600
300
0
1
3
10


P_C — T_a
COLLECTOR POWER DISSIPATION P_C (mW)
AMBIENT TEMPERATURE T_a (℃)
270
225
180
135
90
45
0
0
25
50
75
100
125
150

SOT-23 Package Outline Dimensions

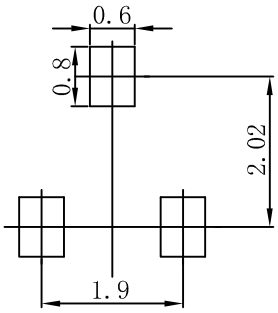






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

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