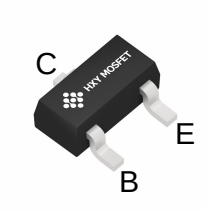
BC846/BC847/BC848

NPN Plastic-Encapsulate Transistors

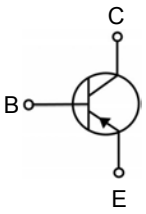
Features

- Ideally suited for automatic insertion
- For switching and AF amplifier applications



1. BASE
2. EMITTER
3. COLLECTOR

SOT-23



Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
BC846/BC847 /BC848	SOT-23	1x	3000

x: BC846A=A; BC846B=B; BC846C=C;
BC847A=E; BC847B=F; BC847C=G;
BC848A=J; BC848B=K; BC848C=L.

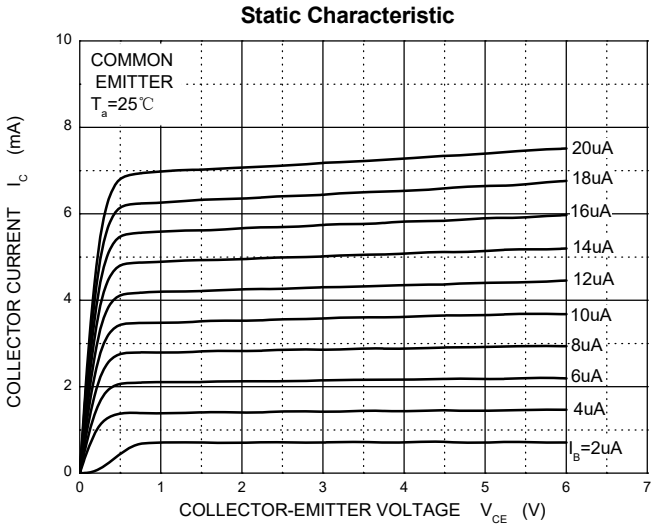
Maxmim Ratings (Ta=25℃unless otherwise noted)

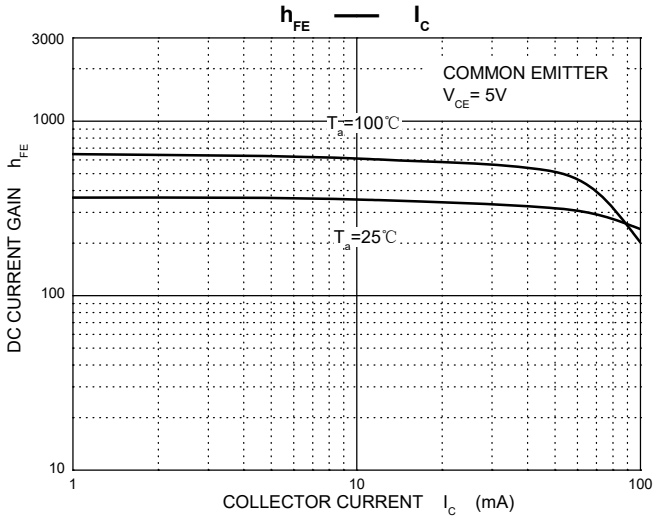
Symbol	Parameter		Limit	Unit
V_{CBO}	Collector-Base Voltage	BC846	80	V
		BC847	50	
		BC848	30	
V_{CEO}	Collector-Emitter Voltage	BC846	65	V
		BC847	45	
		BC848	30	
V_{EBO}	Emitter-Base Voltage		6	V
I_C	Collector Current		100	mA
P_C	Collector Power Dissipation		200	mW
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient		625	℃/W
T_j	Junction Temperature		150	℃
T_{stg}	Storage Temperature		-55～+150	℃

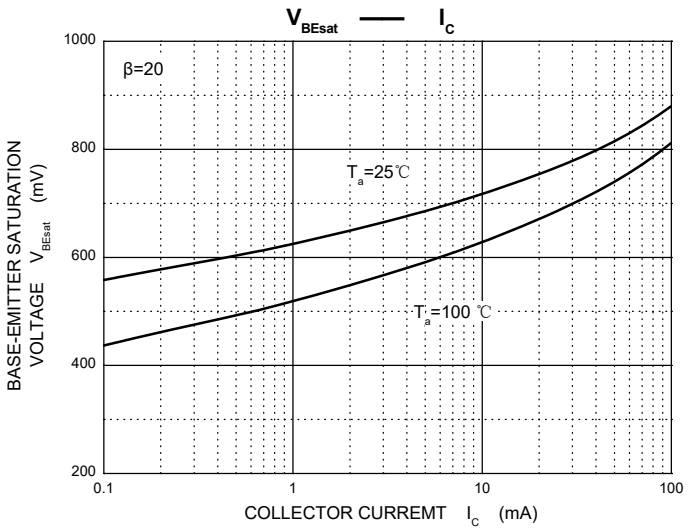
Electrcal Charcteristics (Ta=25℃unless otherwise specified)

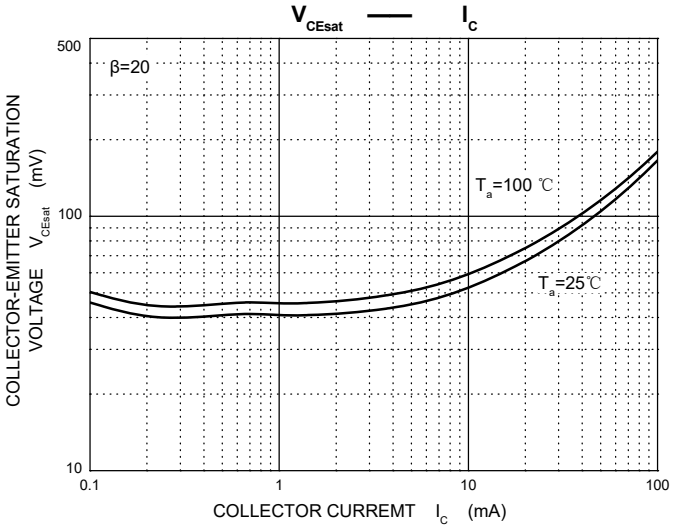
Symbol	Parameter		Test conditions	Min	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	BC846 BC847 BC848	I_C=10μA, I_E=0	80 50 30		V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	BC846 BC847 BC848	I_C=10mA, I_B=0	65 45 30		V
$V_{(BR)EBO}$	Emitter-base breakdown voltage		I_E=10μA, I_C=0	6		V
I_{CBO}	Collector cut-off current	BC846 BC847 BC848	V_{CB}=70V, I_E=0 V_{CB}=50V, I_E=0 V_{CB}=30V, I_E=0		100	nA
I_{EBO}	Emitter cut-off current		V_{EB}=5V, I_C=0		100	nA
h_{FE}	DC current gain	BC846A BC847A BC848A BC846B BC847B BC848B BC846C BC847C BC848C	V_{CE}=5V, I_C=2mA	110 200 420	220 450 800	
$V_{CE(sat)}$	Collector-emitter saturation voltage		I_C=100mA, I_B=5mA		0.5	V
$V_{BE(sat)}$	Base-emitter saturation voltage				1.1	V
f_T	Transition frequency		V_{CE}=5V, I_C=10mA, f=30MHz	100		MHz
Cob	Collector output capacitance		V_{CB} =10V,f= 1MHz		4.5	pF

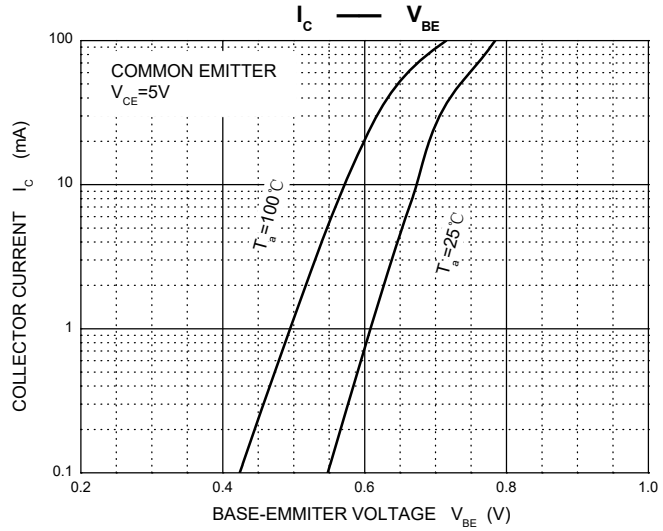
Typical Characteristics

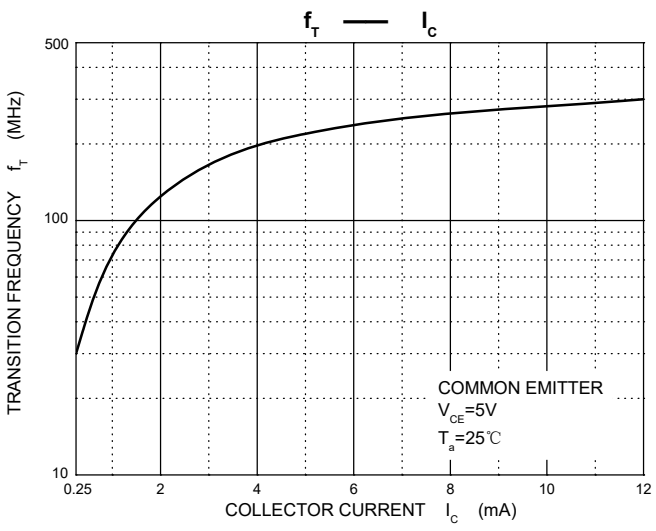


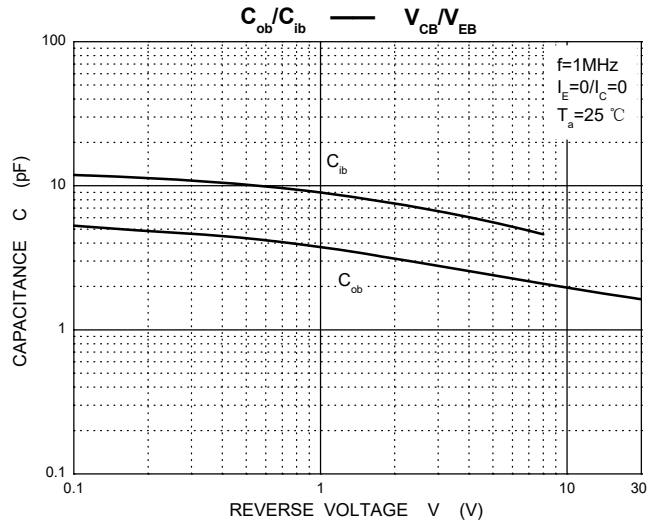


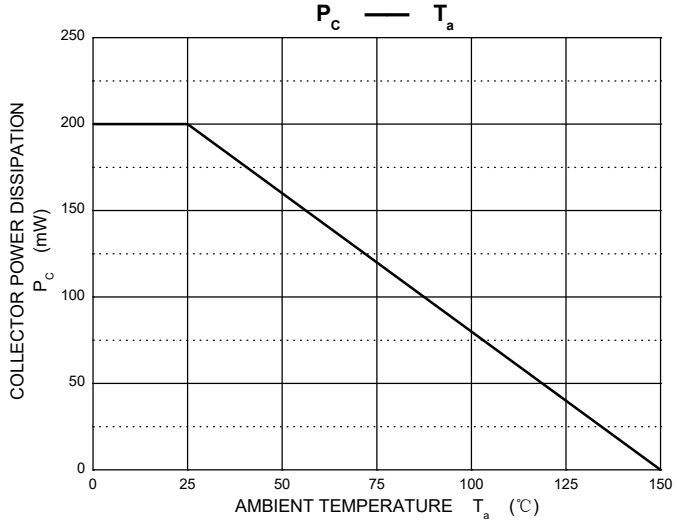

V_{BEsat} — I_C
β=20
T_a=25℃
T_a=100 ℃
BASE-EMITTER SATURATION VOLTAGE V_{BEsat} (mV)
COLLECTOR CURREMT I_C (mA)


V_{CEsat} — I_C
β=20
T_a=100 ℃
T_a=25℃
COLLECTOR-EMITTER SATURATION VOLTAGE V_{CEsat} (mV)
COLLECTOR CURREMT I_C (mA)

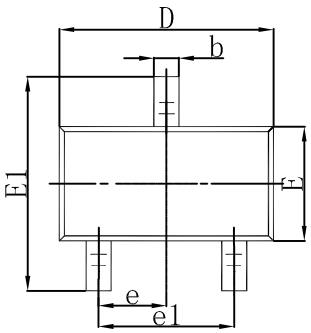

I_C — V_{BE}
COMMON EMITTER
V_{CE}=5V
T_a=100℃
T_a=25℃
COLLECTOR CURRENT I_C (mA)
BASE-EMMITER VOLTAGE V_{BE} (V)

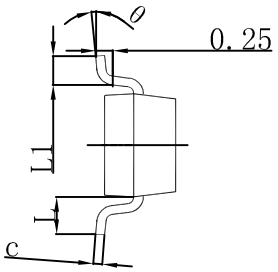

f_T — I_C
COMMON EMITTER
V_{CE}=5V
T_a=25℃
TRANSITION FREQUENCY f_T (MHz)
COLLECTOR CURRENT I_C (mA)

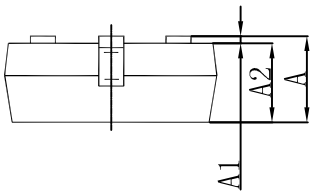

C_{ob}/C_{ib} — V_{CB}/V_{EB}
f=1MHz
I_E=0/I_C=0
T_a=25 ℃
C_{ib}
C_{ob}
CAPACITANCE C (pF)
REVERSE VOLTAGE V (V)


P_C — T_a
COLLECTOR POWER DISSIPATION P_C (mW)
AMBIENT TEMPERATURE T_a (℃)

SOT-23 Package Outline Dimensions

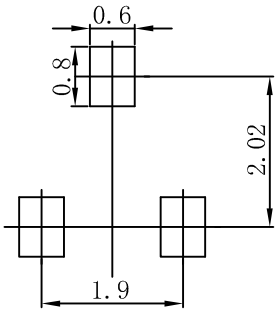






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 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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