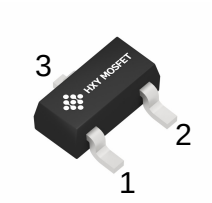
NSVBC848CLT1G

NPN Plastic-Encapsulate Transistors

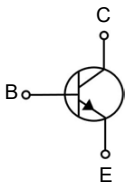
Features

- 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)
NSVBC848CLT1G	SOT-23	1G	3000

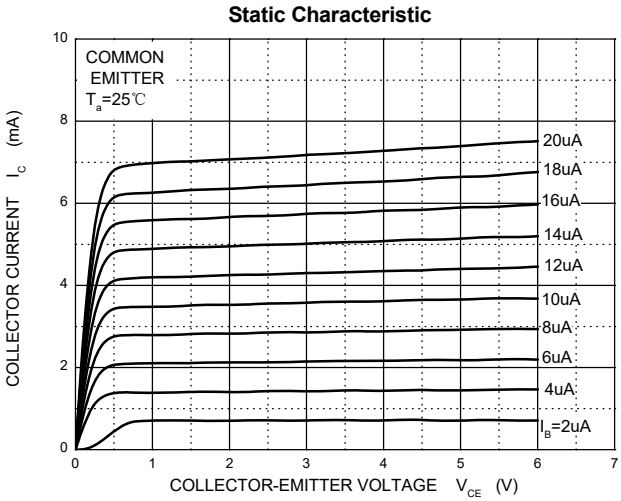
Maximum Ratings (Ta=25°C unless otherwise noted)

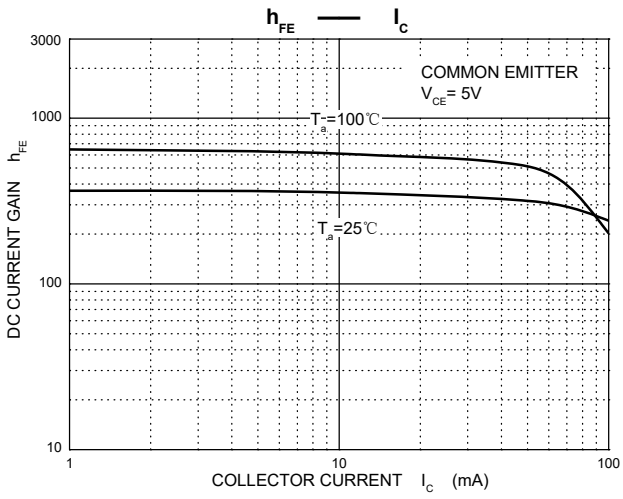
Symbol	Parameter	Limit	Unit
V_{CBO}	Collector-Base Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	100	mA
P_C	Collector Power Dissipation	200	mW
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	625	℃/W
T_j	Junction Temperature	150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

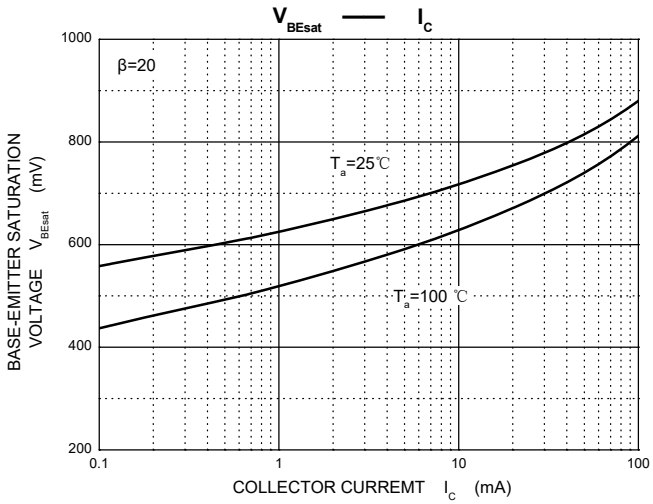
Electrical Characteristics (Ta=25℃ unless otherwise specified)

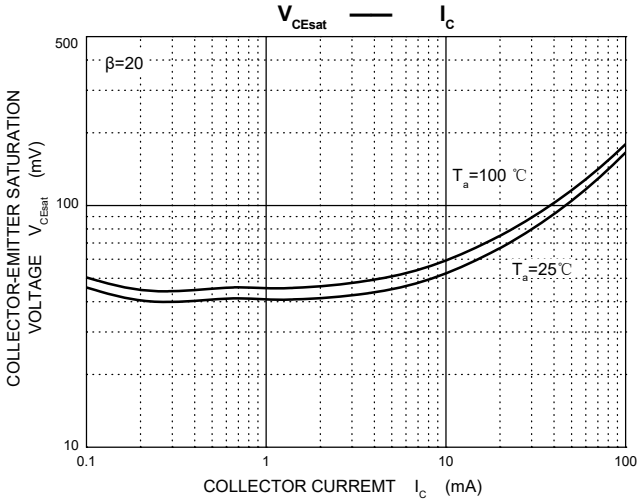
Symbol	Parameter	Test conditions	Min	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C=10μA, I_E=0	50		V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C=10mA, I_B=0	45		V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=10μA, I_C=0	6		V
I_{CBO}	Collector cut-off current	V_{CB}=50V, I_E=0		100	nA
I_{EBO}	Emitter cut-off current	V_{EB}=5V, I_C=0		100	nA
h_{FE}	DC current gain	V_{CE}=5V, I_C=2mA	420	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

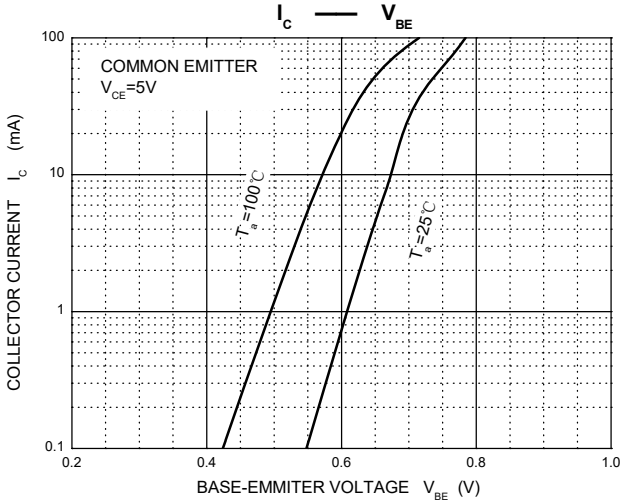
Typical Characteristics

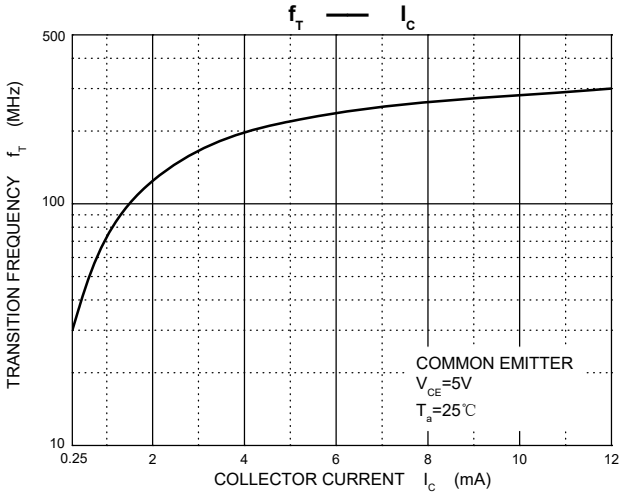


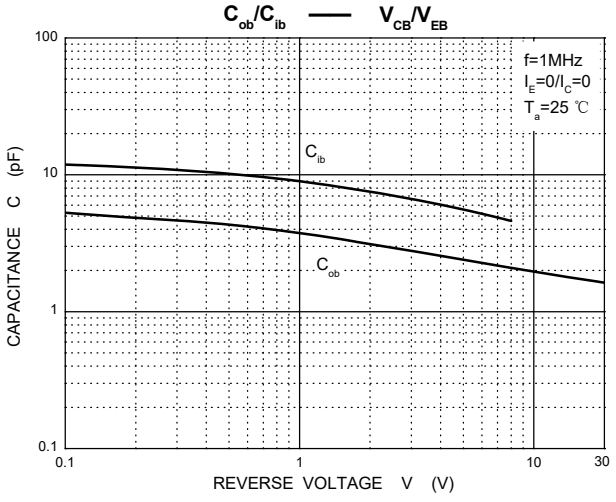


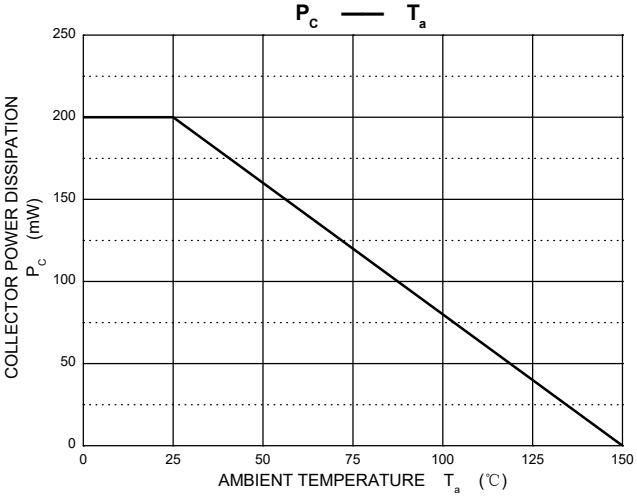

V_{BEsat} — I_C
β=20
T_a=25℃
T_a=100 ℃
BASE-EMITTER SATURATION VOLTAGE V_{BEsat} (mV)
1000
800
600
400
200
0.1
1
10
100
COLLECTOR CURREMT I_C (mA)


V_{CEsat} — I_C
β=20
T_a=100 ℃
T_a=25℃
COLLECTOR-EMITTER SATURATION VOLTAGE V_{CEsat} (mV)
500
100
10
0.1
1
10
100
COLLECTOR CURREMT I_C (mA)

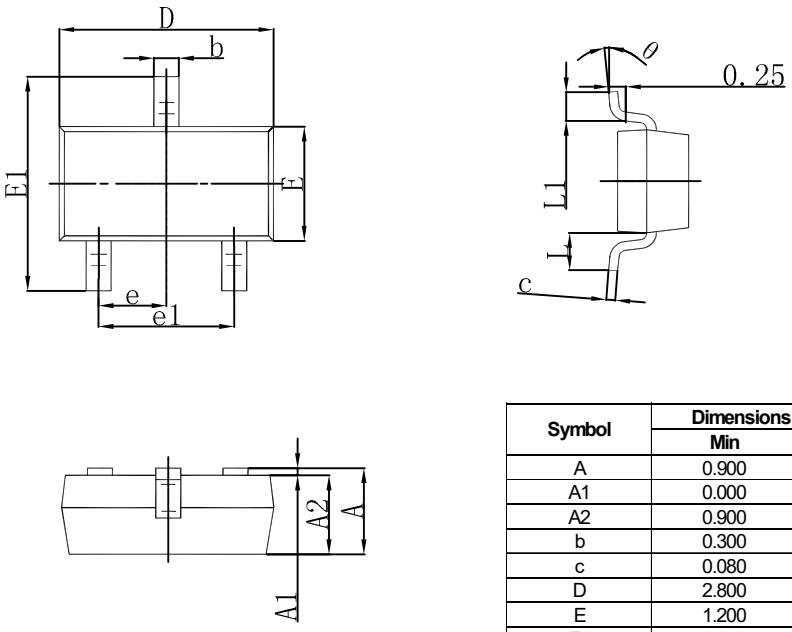

I_C — V_{BE}
COMMON EMITTER
V_{CE}=5V
T_a=100℃
T_a=25℃
COLLECTOR CURRENT I_C (mA)
100
10
1
0.1
0.2
0.4
0.6
0.8
1.0
BASE-EMMITER VOLTAGE V_{BE} (V)


f_T — I_C
TRANSITION FREQUENCY f_T (MHz)
500
100
10
COMMON EMITTER
V_{CE}=5V
T_a=25℃
0.25
2
4
6
8
10
12
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)
100
10
1
0.1
0.1
1
10
30
REVERSE VOLTAGE V (V)

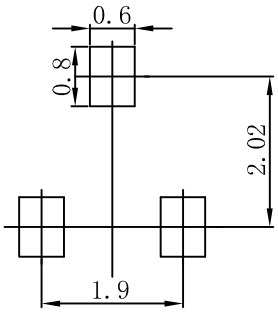

P_C — T_a
COLLECTOR POWER DISSIPATION P_C (mW)
250
200
150
100
50
0
0
25
50
75
100
125
150
AMBIENT TEMPERATURE T_a (℃)

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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