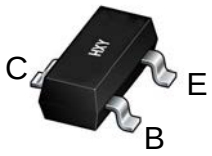
NSVBC847BTT1G

NPN Plastic-Encapsulate Transistors

Feartures

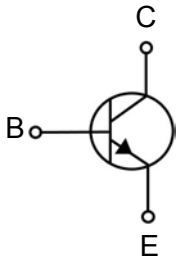
- Ideally suited for automatic insertion
- For Switching and AF Amplifier Applications



SOT-523

Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
NSVBC847BTT1G	SOT-523	1F	3000



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

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	0.1	A
Collector Power Dissipation	P_C	150	mW
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55～+150	°C

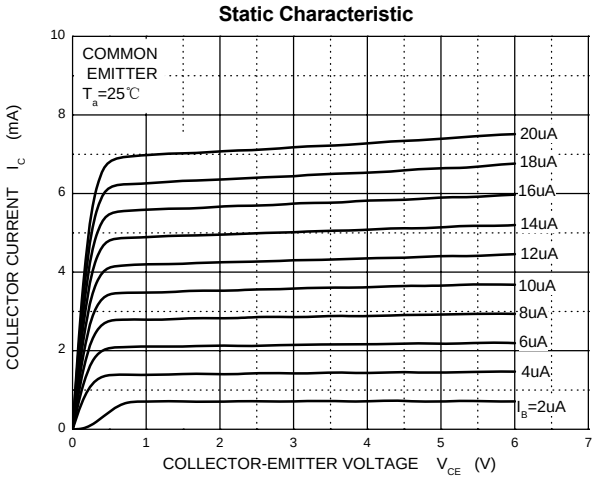
NSVBC847BTT1G

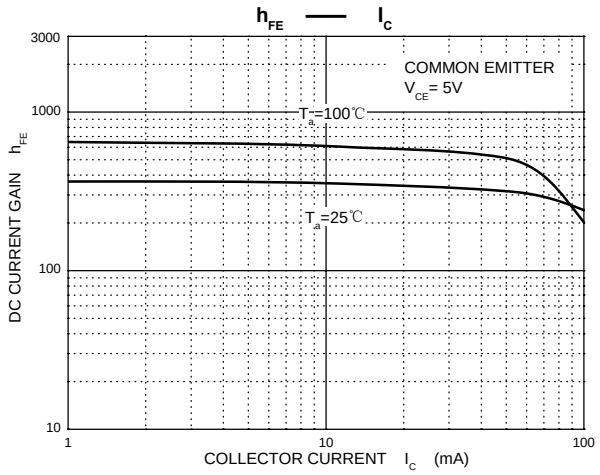
NPN Plastic-Encapsulate Transistors

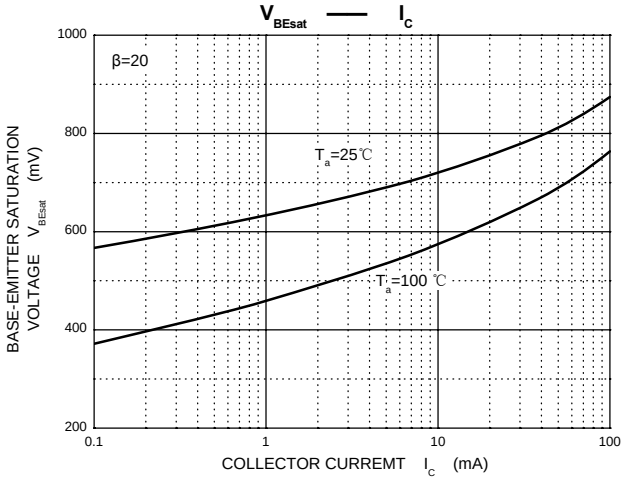
Electrical Characteristics (Ta=25°C unless otherwise specified)

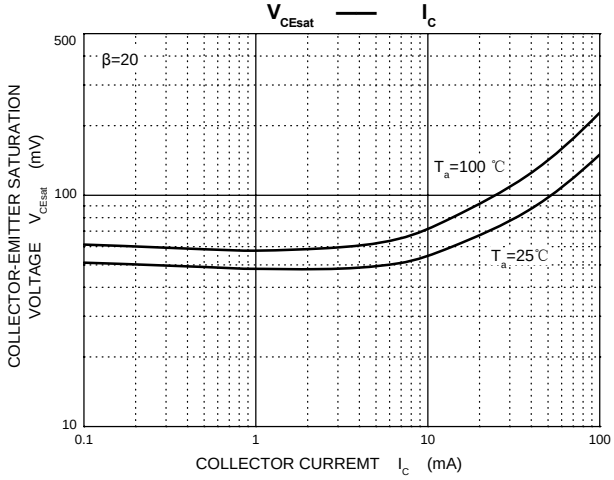
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= 10μA, I_E=0	50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= 10mA, I_B=0	45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E= 1 μA, I_C=0	6			V
Collector Cutoff Current	I_{CBO}	V_{CB}=30V			15	nA
DC current gain	h_{FE}	V_{CE}= 5V, I_C= 2mA	200		450	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=10mA, I_B=0. 5mA I_C=100mA, I_B= 5mA			0.25 0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=10mA, I_B=0. 5mA I_C=100mA, I_B= 5mA		0.7 0.9		V
Base-emitter voltage	$V_{BE(on)}$	V_{CE}= 5V, I_C= 2mA V_{CE}= 5V, I_C= 10mA	580	660	700 770	mV
Transition frequency	f_T	V_{CE}= 5 V,I_C= 10mA f=100MHz	100			MHz
Collector output capacitance	C_{ob}	V_{CB}=10V,f=1MHz			4.5	pF
Noise figure	NF	V_{CE}=5V,f=1kHz, R_S=2kΩ,BW=200Hz			10	dB

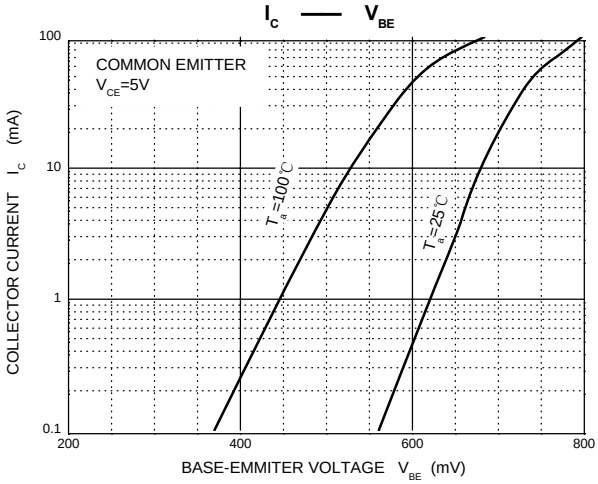
Typical Characteristics

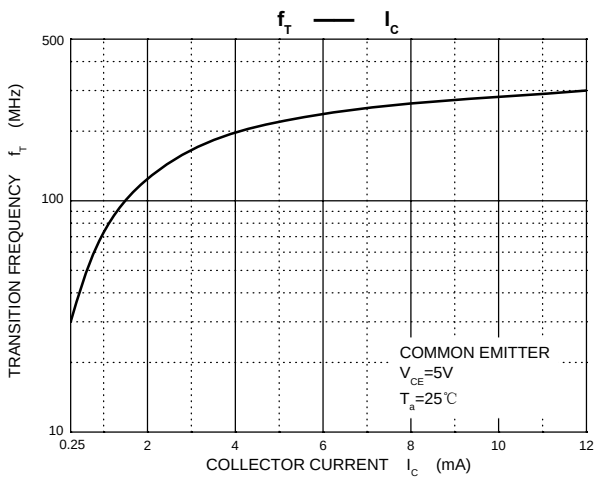


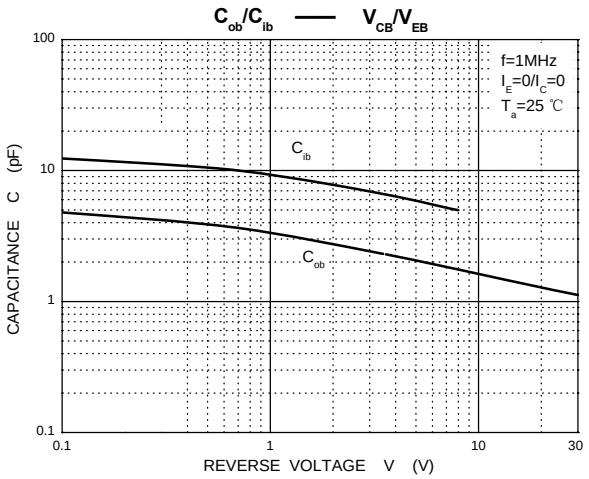


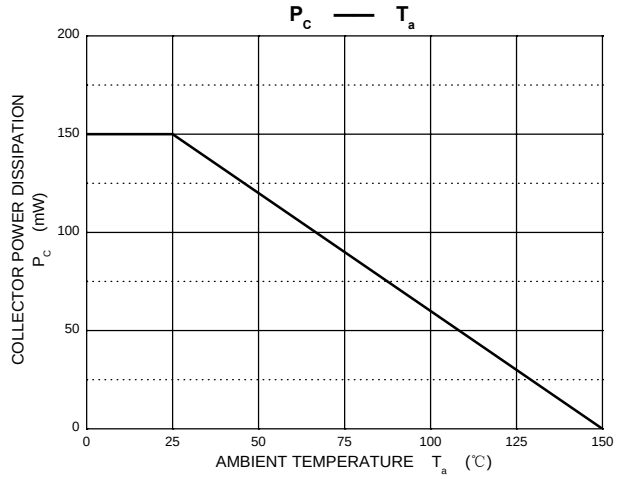

V_{BEsat} — I_C
β=20
T_a=25℃
T_a=100 ℃
BASE-EMITTER SATURATION VOLTAGE V_{BEsat} (mV)
COLLECTOR CURREMT I_C (mA)
1000
800
600
400
200
0.1
1
10
100


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

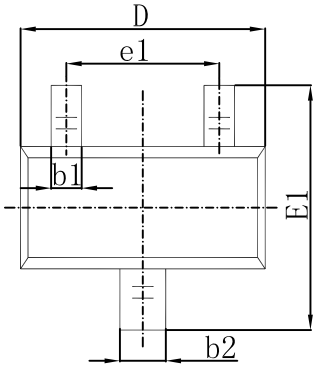

I_C — V_{BE}
COMMON EMITTER
V_{CE}=5V
T_a=100℃
T_a=25℃
COLLECTOR CURRENT I_C (mA)
BASE-EMMITER VOLTAGE V_{BE} (mV)
100
10
1
0.1
200
400
600
800

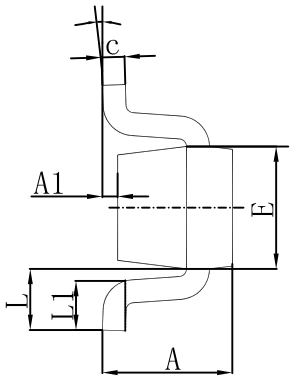

f_T — I_C
COMMON EMITTER
V_{CE}=5V
T_a=25℃
TRANSITION FREQUENCY f_T (MHz)
COLLECTOR CURRENT I_C (mA)
500
100
10
0.25
2
4
6
8
10
12

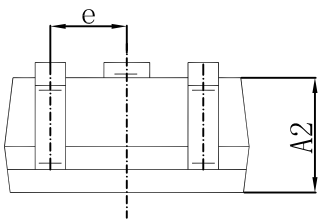

C_{ob}/C_{ib} — V_{CB}/V_{EB}
f=1MHz
I_E=0/I_C=0
T_a=25 ℃
C_{ib}
C_{ob}
CAPACITANCE C (pF)
REVERSE VOLTAGE V (V)
100
10
1
0.1
0.1
1
10
30


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

SOT-523 Package Information

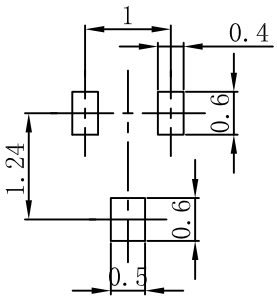






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-523 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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