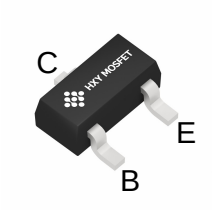
2SC945

NPN Plastic-Encapsulate Transistors

Features

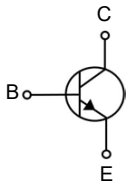
- Excellent h_{FE} Linearity
- Low noise



SOT-23

Ordering Information

Product ID	Pack	Marking	Qty(PCS)
2SC945	SOT-23	CR	3000



Maxmim Ratings (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	150	mA
Collector Power Dissipation	P_C	200	mW
Thermal Resistance From Junction To Ambient	$R_{\Theta JA}$	625	℃/W
Junction Temperature	T_j	150	℃
Storage Temperature	T_{stg}	-55～+150	℃

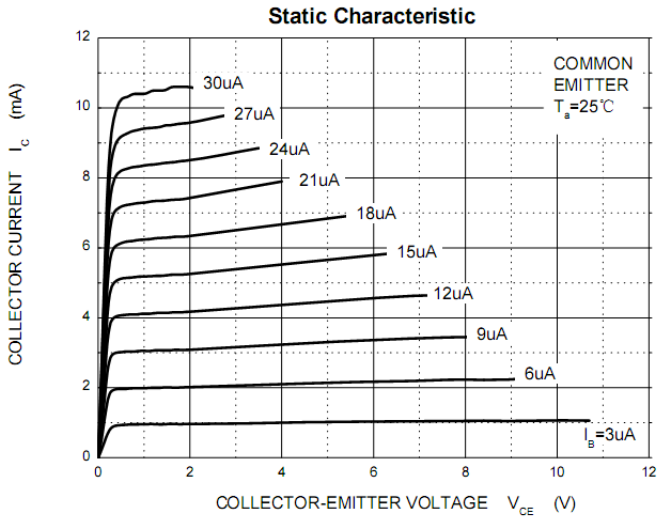
Classifiction Of $h_{FE(1)}$

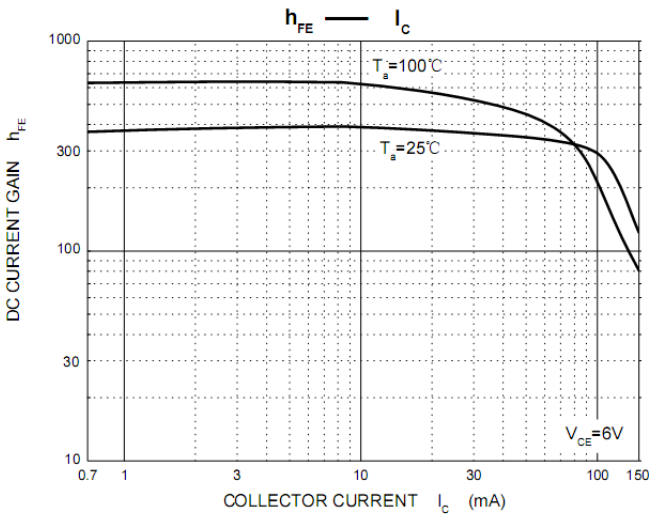
Rank	L	H
Range	130-200	200-400

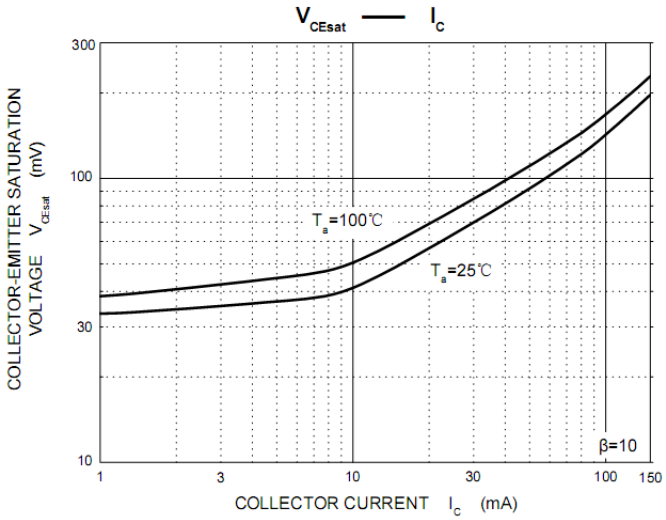
Electrcal Charcteristics (T_a=25℃ unless otherwise specified)

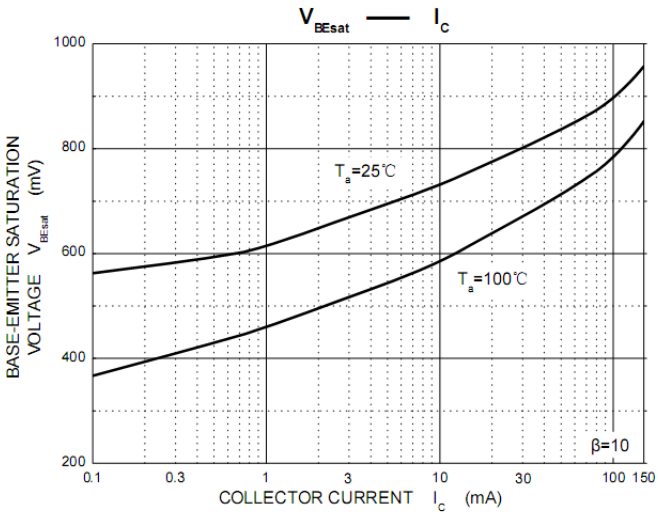
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100uA, I_E=0	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA , I_B=0	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=0.1mA, I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}=60V, I_E=0			0.1	uA
Collector cut-off current	I_{CER}	V_{CE}=55V,R=10MΩ			0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB}=5V , I_C=0			0.1	uA
DC current gain	$h_{FE(1)}$	V_{CE}=6 V , I_C=1mA	130		400	
	$h_{FE(2)}$	V_{CE}=6 V , I_C=0.1mA	40			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=100mA, I_B=10mA			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=100mA, I_B=10mA			1	V
Transition frequency	f_T	V_{CE}=6V,I_C=10mA,f =30 MHz	150			MHz
Collector output capacitance	C_{ob}	V_{CB}=10V,I_E=0,f=1MHz			3.0	pF
Noise figure	NF	VCE=6V,IC=0.1mA Rg=10kΩ,f=1kMHz		4	10	dB

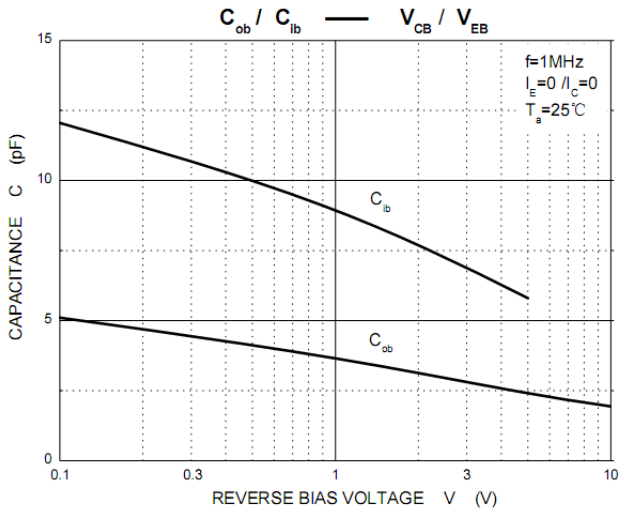
Typical Characteristics

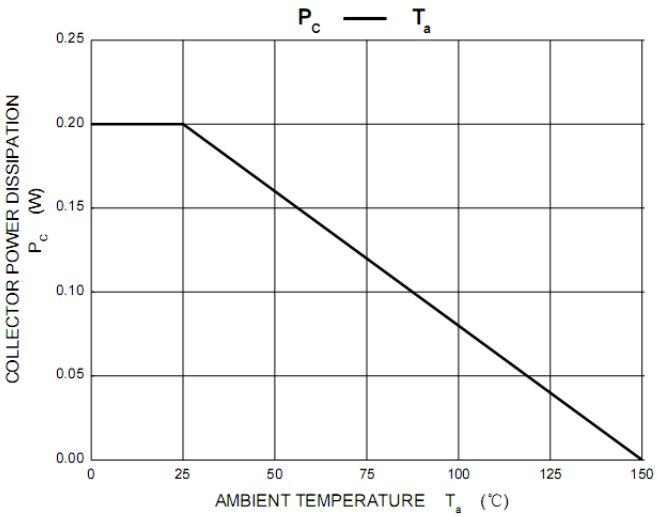




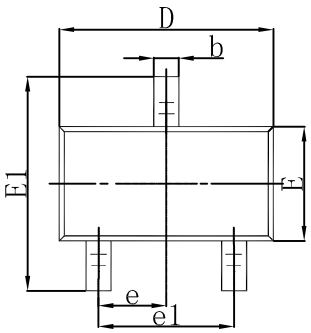

V_{CEsat} — I_C
COLLECTOR-EMITTER SATURATION VOLTAGE V_{CEsat} (mV)
300
100
30
10
1
3
10
30
100
150
T_a=100℃
T_a=25℃
β=10
COLLECTOR CURRENT I_C (mA)

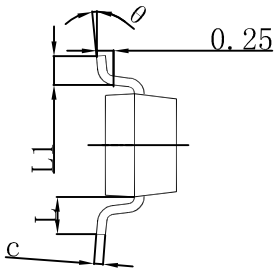

V_{BEsat} — I_C
BASE-EMITTER SATURATION VOLTAGE V_{BEsat} (mV)
1000
800
600
400
200
0.1
0.3
1
3
10
30
100
150
T_a=25℃
T_a=100℃
β=10
COLLECTOR CURRENT I_C (mA)

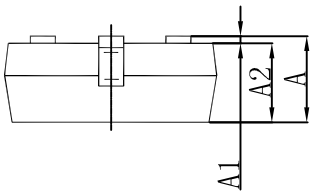

C_{ob} / C_{ib} — V_{CB} / V_{EB}
CAPACITANCE C (pF)
15
10
5
0
0.1
0.3
1
3
10
f=1MHz
I_E=0 /I_C=0
T_a=25℃
C_{ib}
C_{ob}
REVERSE BIAS VOLTAGE V (V)


P_C — T_a
COLLECTOR POWER DISSIPATION P_C (W)
0.25
0.20
0.15
0.10
0.05
0.00
0
25
50
75
100
125
150
AMBIENT TEMPERATURE T_a (℃)

SOT-23 Package Outline Dimensions

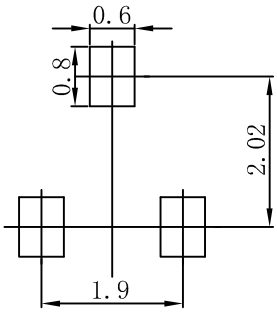






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037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