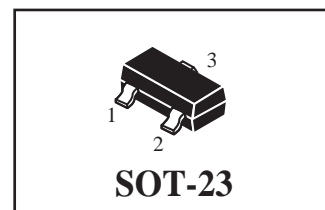
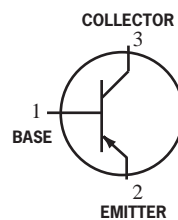


Epitaxial Planar Transistor PNP Silicon

 Lead(Pb)-Free



MAXIMUM RATINGS (Ta=25 °C)

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V _{CEO}	-20	Vdc
Collector-Base Voltage	V _{CBO}	-30	Vdc
Emitter-Base Voltage	V _{EBO}	-6.0	Vdc
Collector Current-Continuous	I _C		mAdc

THERMAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Total Device Dissipation FR-5 Board ⁽¹⁾ T _A =25 °C	P _D	150	mW
Derate above 25 °C		0.5	mW/°C
Thermal Resistance, Junction Ambient	R _{θJA}	833	°C/W
Junction and Storage, Temperature	T _J , T _{stg}	-55 to +150	°C

Device Marking

2SB1386=

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Max	Unit
Collector-Emitter Breakdown Voltage(I _C =-1 mAdc, I _B =0)	V _{(BR)CEO}	-20	-	Vdc
Collector-Base Breakdown Voltage(I _C =-50 uAdc, I _E =0)	V _{(BR)CBO}	-30	-	Vdc
Emitter-Base Breakdown Voltage(I _E =-50 uAdc, I _C =0)	V _{(BR)EBO}	-6.0	-	Vdc
Collector Cutoff Current(V _{CB} =-20Vdc, I _E =0)	I _{CBO}	-	-0.5	uAdc
Emitter Cutoff Current(V _{EB} =-5Vdc, I _C =0)	I _{EBO}	-	-0.5	uAdc

1. FR-5=1.0×0.75×0.062 in

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ unless otherwise noted) (Continued)

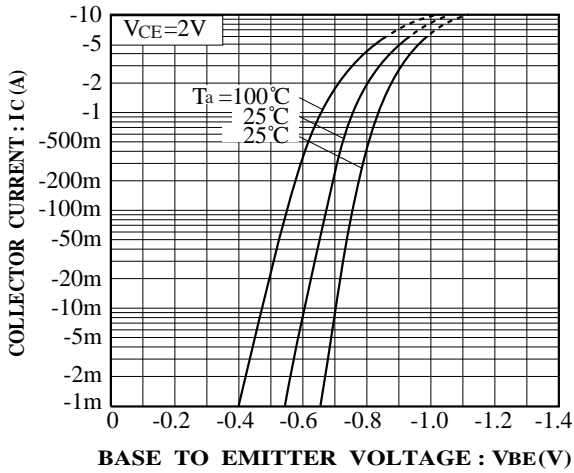
Characteristics	Symbol	Min	TYP	Max	Unit
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ON CHARACTERISTICS

DC Current Gain ($I_C = -0.5 \text{ Adc}, V_{CE} = -2.0 \text{ Vdc}$)	hFE	82	-	390	-
Transition Frequency ($I_E = 50 \text{ mAdc}, V_{CE} = -6.0 \text{ Vdc}, f=30\text{MHz}$)	fT	-	120	-	Vdc
Output Capacitance ($I_E = 0 \text{ Adc}, V_{CB} = -20 \text{ Vdc}, f=1\text{MHz}$)	Cob	-	60	-	pF

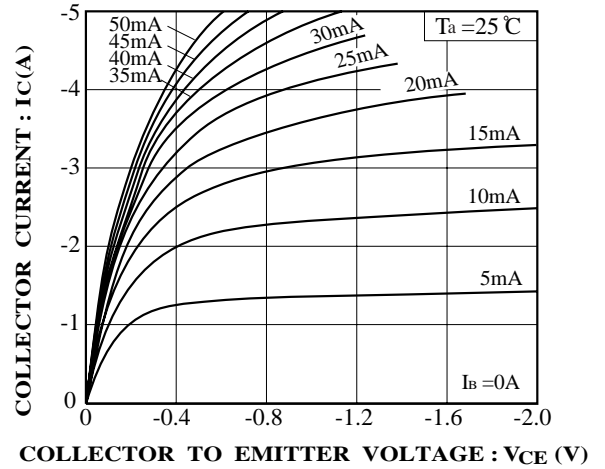
Classification of hFE

Rank	P	Y	G
Range	82-180	120-270	180-390
Marking			



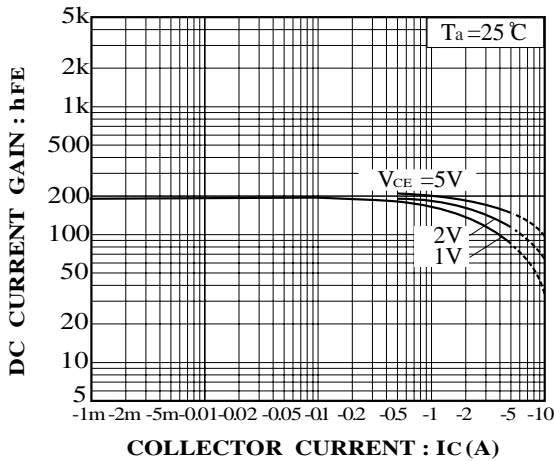
BASE TO EMITTER VOLTAGE : V_{BE} (V)

FIG.1 Grounded Emitter Propagation Characteristics



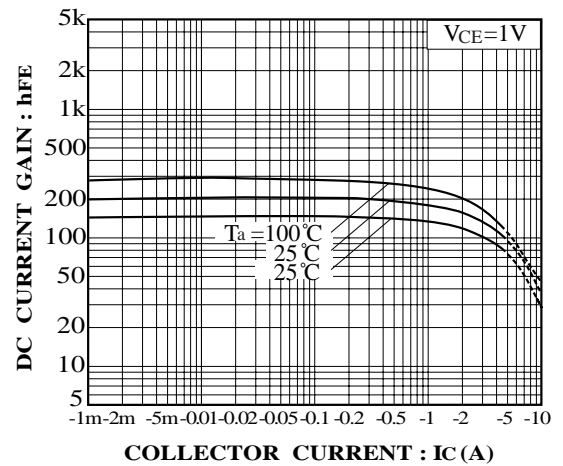
COLLECTOR TO EMITTER VOLTAGE : V_{CE} (V)

FIG.2 Grounded Emitter Output Characteristics



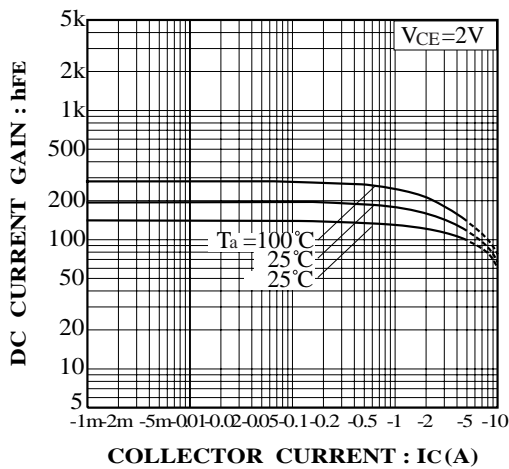
COLLECTOR CURRENT : I_C (A)

FIG.3 DC Current Gain vs. Collector Current



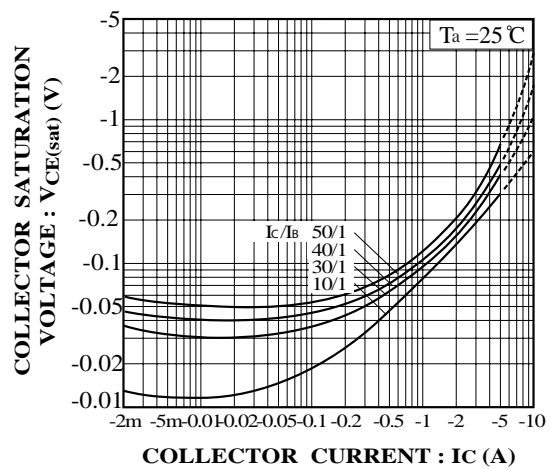
COLLECTOR CURRENT : I_C (A)

FIG.4 DC Current Gain vs. Collector Current



COLLECTOR CURRENT : I_C (A)

FIG.5 DC Current Gain vs. Collector Current



COLLECTOR CURRENT : I_C (A)

FIG.6 Collector-Emitter Saturation Voltage vs. Collector Current

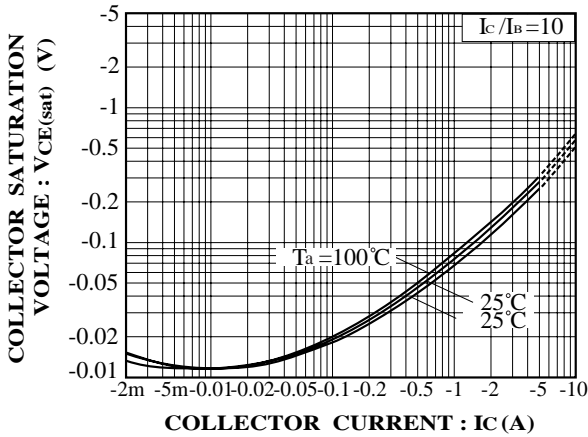


FIG.7 Collector-Emitter Saturation Voltage vs. Collector Current

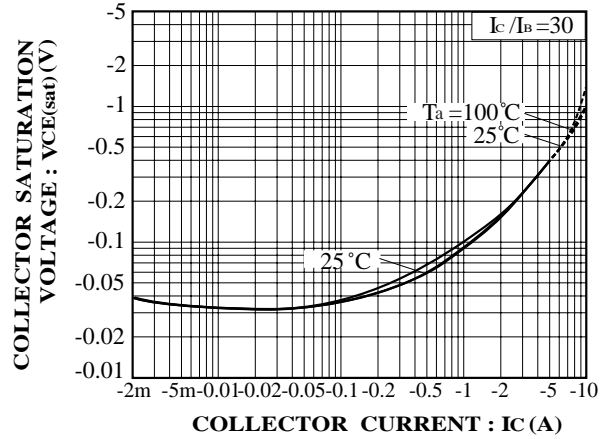


FIG.8 Collector-Emitter Saturation Voltage vs. Collector Current

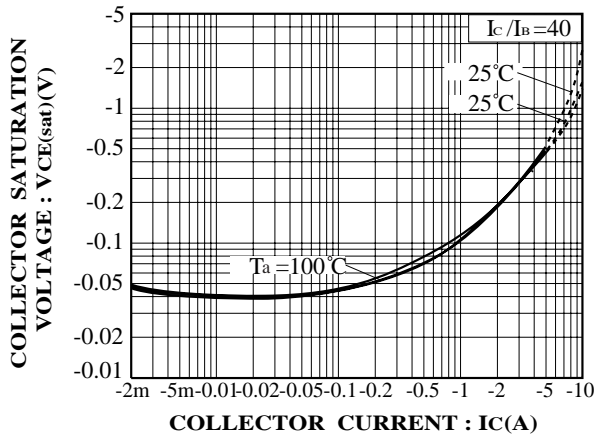


FIG.9 Collector-Emitter Saturation Voltage vs. Collector Current

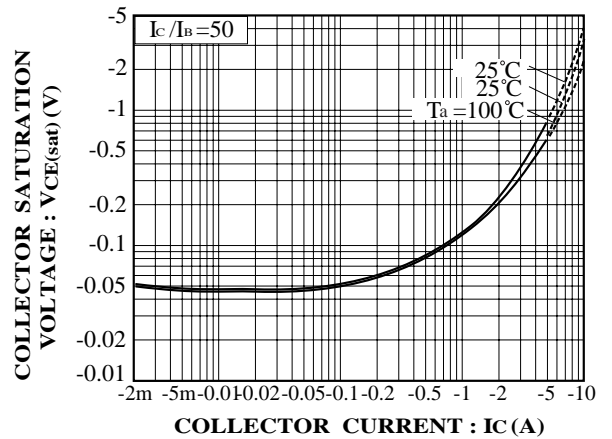


FIG.10 Collector-Emitter Saturation Voltage vs. Collector Current

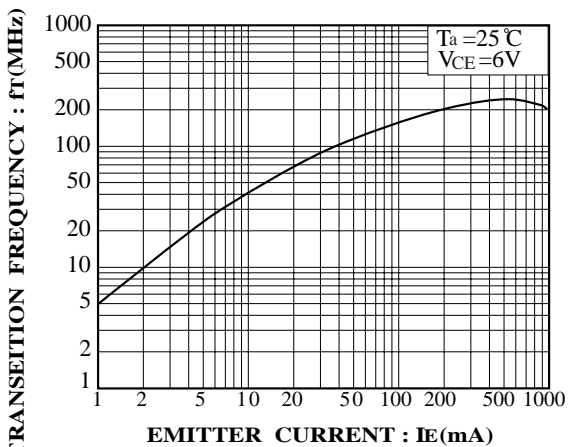


FIG.11 Gain Bandwidth Product vs. Emitter Current

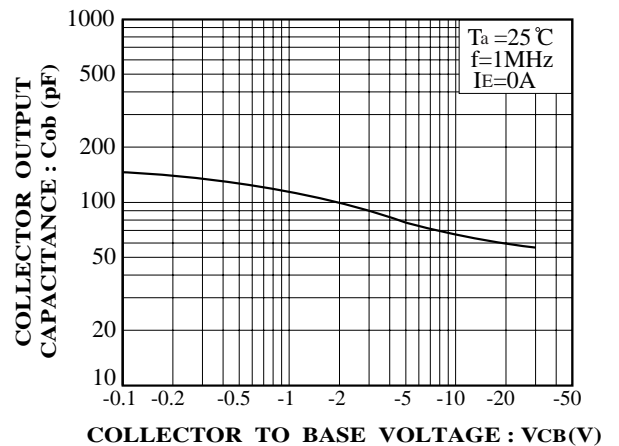


FIG.12 Collector Output Capacitance vs. Collector-Base Voltage

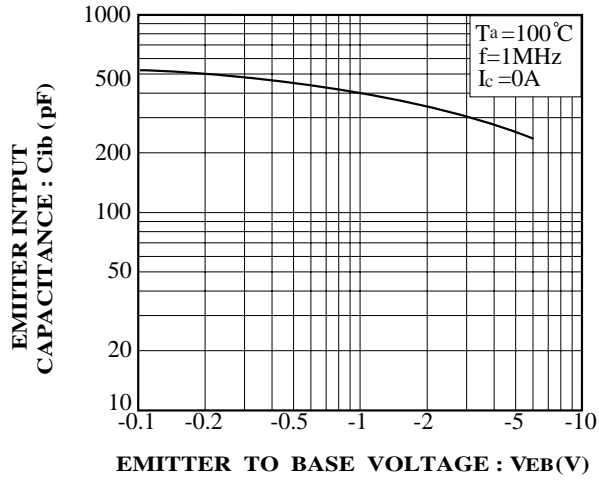
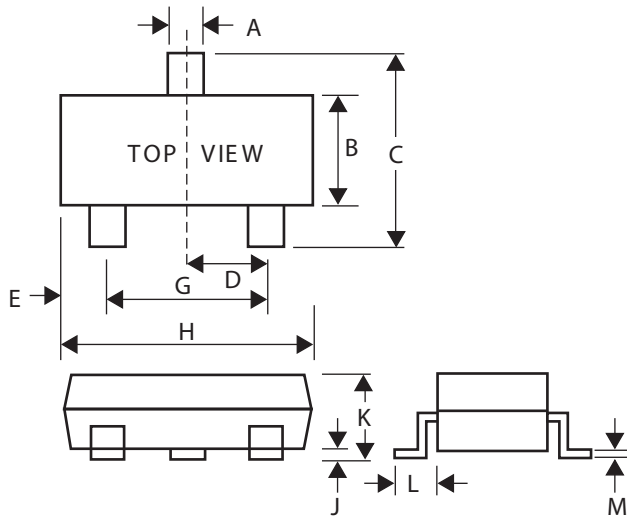


FIG.13 Emitter Input Capacitance vs. Emitter-Base Voltage

SOT-23 Package Outline Dimensions

Unit:mm



Dim	Min	Max
A	0.35	0.51
B	1.19	1.40
C	2.10	3.00
D	0.85	1.05
E	0.46	1.00
G	1.70	2.10
H	2.70	3.10
J	0.01	0.13
K	0.89	1.10
L	0.30	0.61
M	0.076	0.25