TRANSISTOR (PNP)

FEATURES

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

SOT-23

1. BASE
2. EMITTER
3. COLLECTOR

MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage		
	BC856	-80	V
	BC857	-50	
	BC858	-30	
V_{CEO}	Collector-Emitter Voltage		
	BC856	-65	V
	BC857	-45	
	BC858	-30	
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current –Continuous	-0.1	A
P_C	Collector Power Dissipation	200	mW
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-65-150	℃

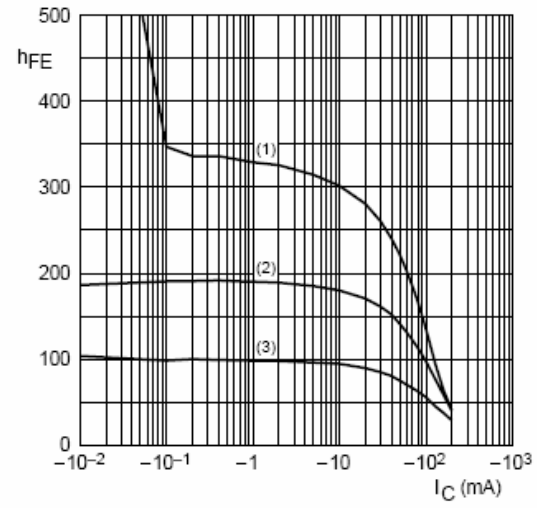
DEVICE MARKING

BC856A=3A; BC856B=3B;
BC857A=3E;BC857B=3F;BC857C=3G;
BC858A=3J; BC858B=3K; BC858C=3L

ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

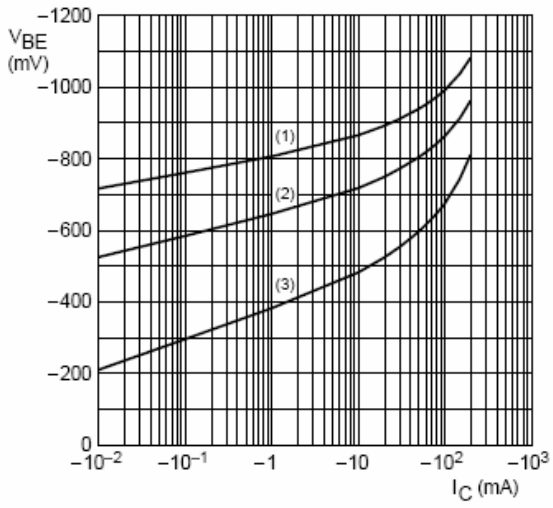
Parameter		Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	**BC856**	V_{CBO}	I_C= -10μA, I_E=0	-80		V
	BC857			-50		
	BC858			-30		
Collector-emitter breakdown voltage	**BC856**	V_{CEO}	I_C= -10mA, I_B=0	-65		V
	BC857			-45		
	BC858			-30		
Emitter-base breakdown voltage		V_{EBO}	I_E= -1μA, I_C=0	-5		V
Collector cut-off current	**BC856**	I_{CBO}	V_{CB}= -70 V , I_E=0		-0.1	μA
	BC857		V_{CB}= -45 V , I_E=0			
	BC858		V_{CB}= -25 V , I_E=0			
Collector cut-off current	**BC856**	I_{CEO}	V_{CE}= -60 V , I_B=0		-0.1	μA
	BC857		V_{CE}= -40 V , I_B=0			
	BC858		V_{CE}= -25 V , I_B=0			
Emitter cut-off current		I_{EBO}	V_{EB}= -5 V , I_C=0		-0.1	μA
DC current gain	**BC856A, 857A,858A**	h_{FE}	V_{CE}= -5V, I_C= -2mA	125	250	
	BC856B, 857B,858B			220	475	
	BC857C,BC858C			420	800	
Collector-emitter saturation voltage		V_{CE}(sat)	I_C=-100mA, I_B= -5 mA		-0.5	V
Base-emitter saturation voltage		V_{BE}(sat)	I_C= -100mA, I_B= -5mA		-1.1	V
Transition frequency		f_T	V_{CE}= -5 V, I_C= -10mA f=100MHz	100		MHz
Collector capacitance		C_{ob}	V_{CB}=-10V, f=1MHz		4.5	pF

Typical Characteristics



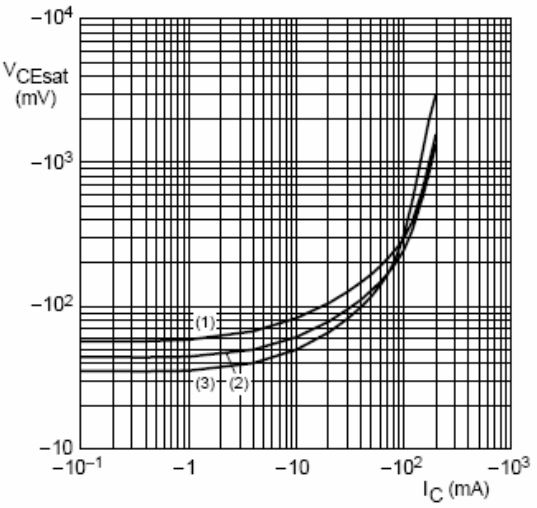
BC857A; V_{CE} = −5 V.
(1) T_{amb} = 150 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = −55 °C.

Fig.2 DC current gain as a function of collector current; typical values.



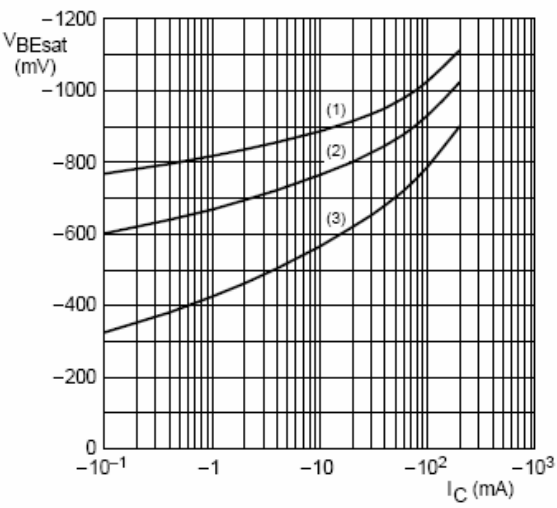
BC857A; V_{CE} = −5 V.
(1) T_{amb} = −55 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = 150 °C.

Fig.3 Base-emitter voltage as a function of collector current; typical values.



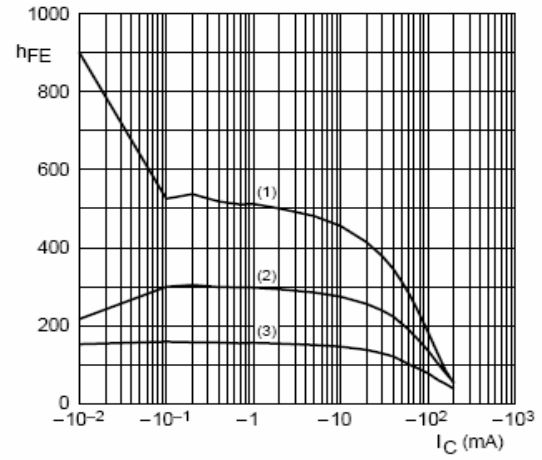
BC857A; I_C/I_B = 20.
(1) T_{amb} = 150 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = −55 °C.

Fig.4 Collector-emitter saturation voltage as a function of collector current; typical values.



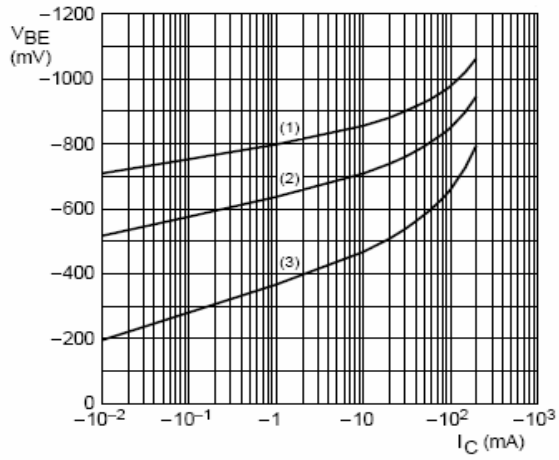
BC857A; I_C/I_B = 20.
(1) T_{amb} = −55 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = 150 °C.

Fig.5 Base-emitter saturation voltage as a function of collector current; typical values.



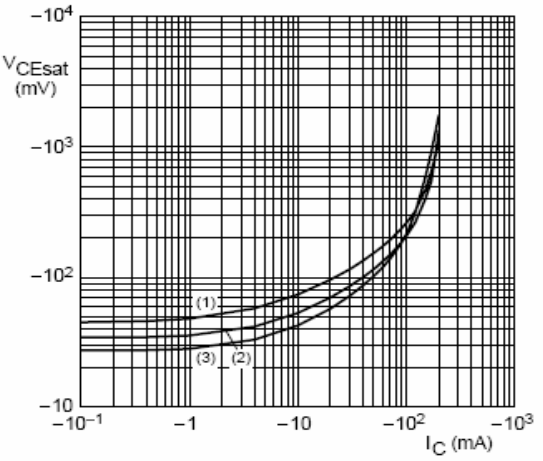
BC857B; V_{CE} = −5 V.
(1) T_{amb} = 150 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = −55 °C.

Fig.6 DC current gain as a function of collector current; typical values.



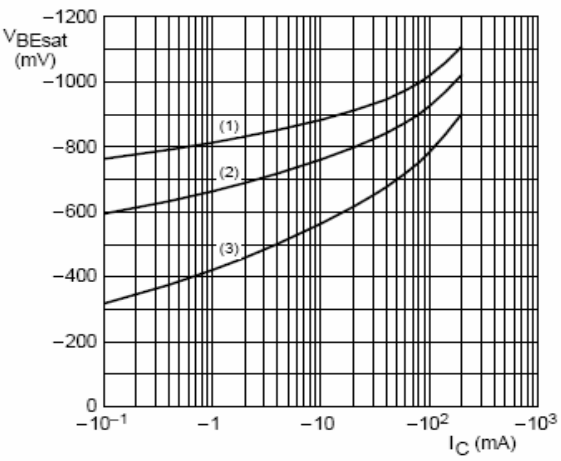
BC857B; V_{CE} = −5 V.
(1) T_{amb} = −55 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = 150 °C.

Fig.7 Base-emitter voltage as a function of collector current; typical values.



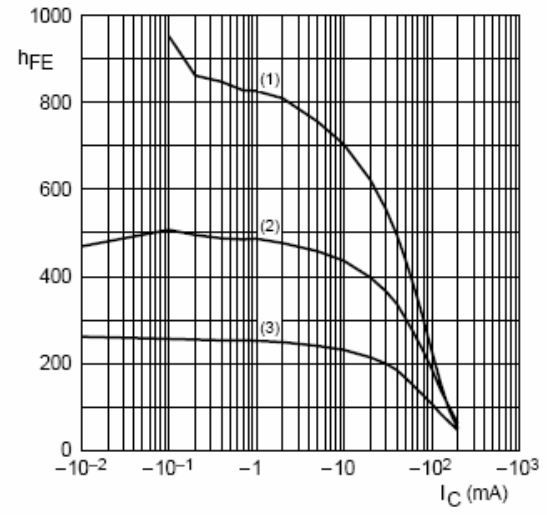
BC857B; I_C/I_B = 20.
(1) T_{amb} = 150 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = −55 °C.

Fig.8 Collector-emitter saturation voltage as a function of collector current; typical values.



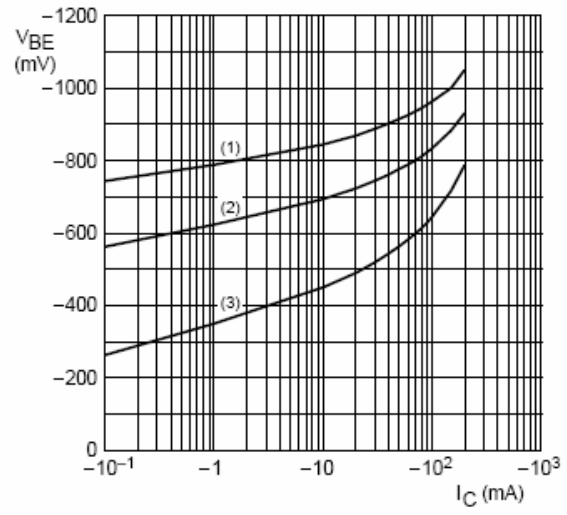
BC857B; I_C/I_B = 20.
(1) T_{amb} = −55 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = 150 °C.

Fig.9 Base-emitter saturation voltage as a function of collector current; typical values.



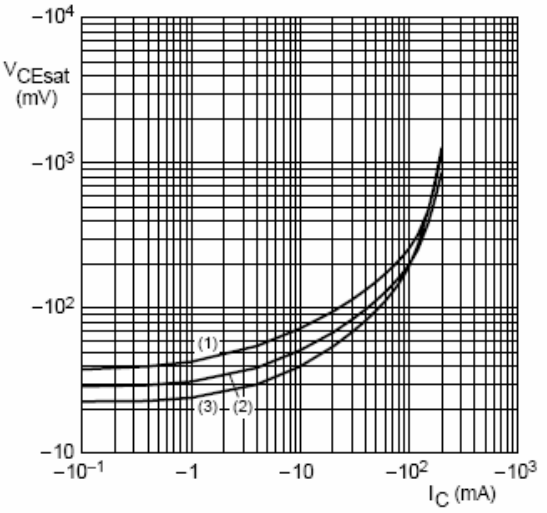
BC857C; V_{CE} = −5 V.
(1) T_{amb} = 150 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = −55 °C.

Fig.10 DC current gain as a function of collector current; typical values.



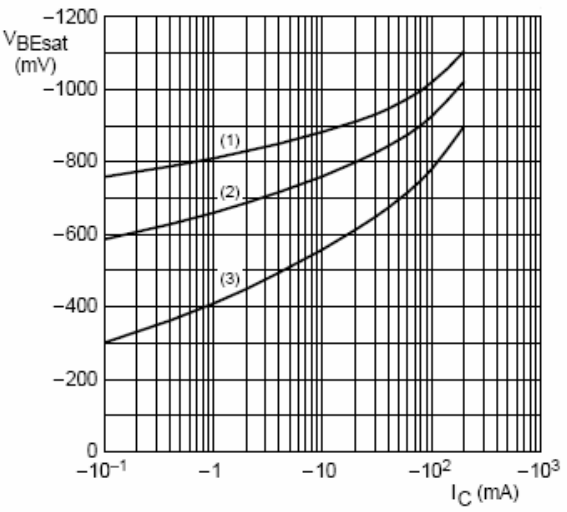
BC857C; V_{CE} = −5 V.
(1) T_{amb} = −55 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = 150 °C.

Fig.11 Base-emitter voltage as a function of collector current; typical values.



BC857C; I_C/I_B = 20.
(1) T_{amb} = 150 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = −55 °C.

Fig.12 Collector-emitter saturation voltage as a function of collector current; typical values.



BC857C; I_C/I_B = 20.
(1) T_{amb} = −55 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = 150 °C.

Fig.13 Base-emitter saturation voltage as a function of collector current; typical values.