



Shenzhen Tuofeng Semiconductor Technology Co., Ltd

SOT-23 Plastic-Encapsulate Transistors

BC856A,B TRANSISTOR (PNP)

BC857A, B,C

BC858A, B,C

FEATURES

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

SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CB0}	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	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-65-150	$^{\circ}\text{C}$

DEVICE MARKING

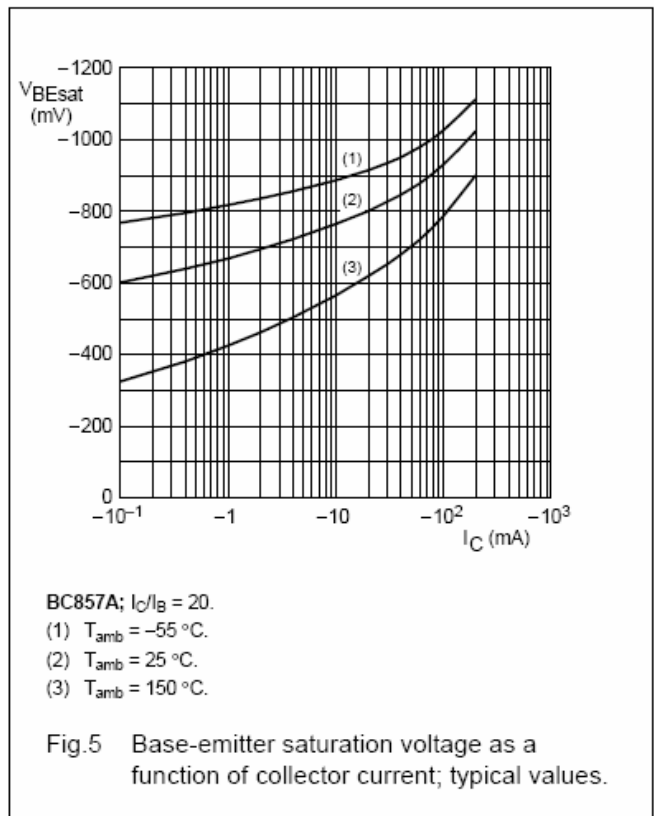
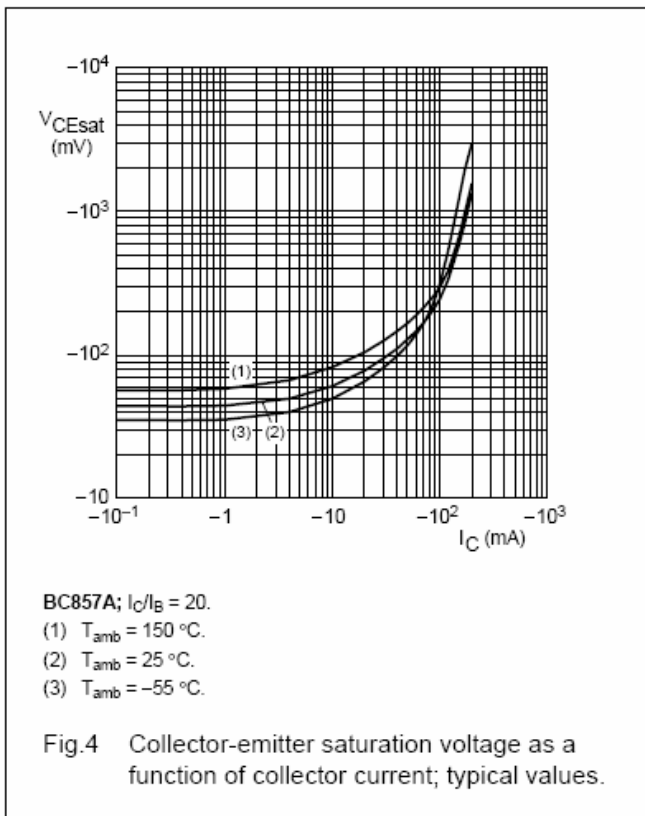
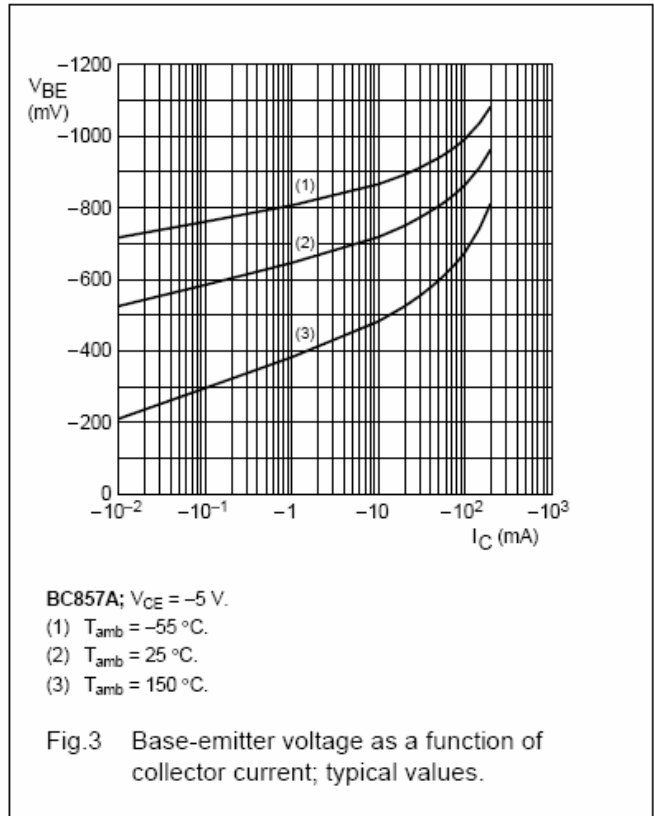
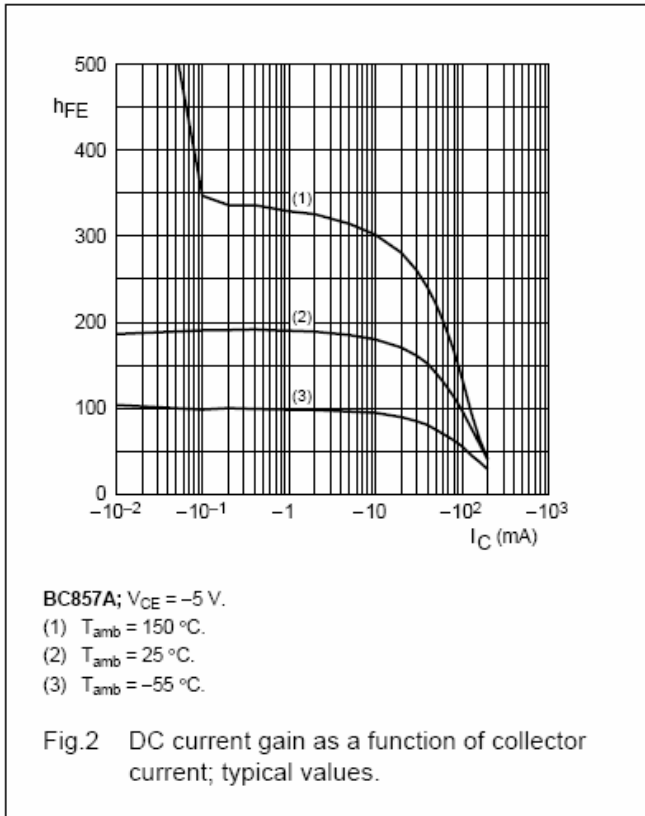
BC856A=3A; BC856B=3B;
BC857A=3E; BC857B=3F; BC857C=3G;
BC858A=3J; BC858B=3K; BC858C=3L

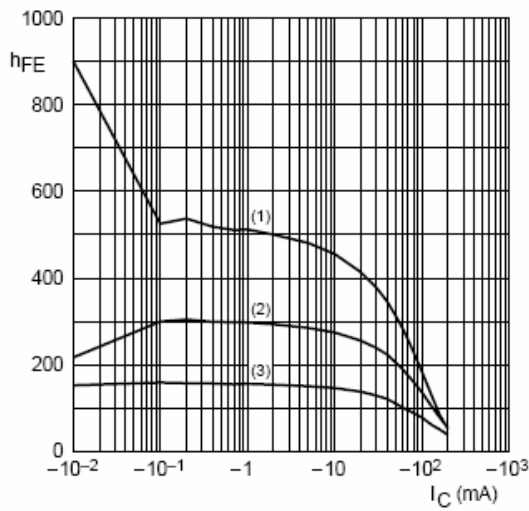
ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

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

Typical Characteristics

BC856;BC857;BC858

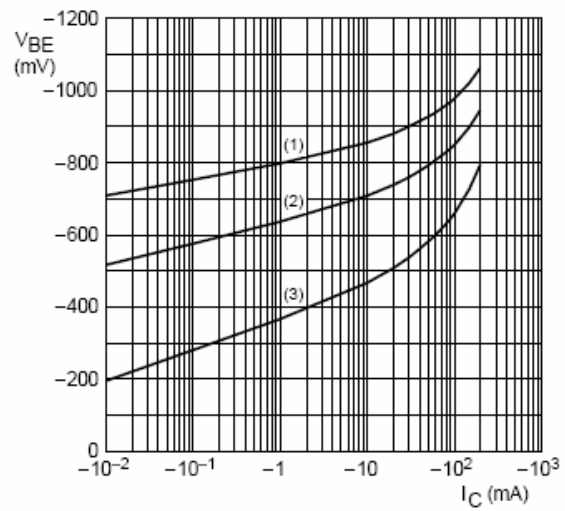




BC857B; $V_{CE} = -5\text{ V}$.

- (1) $T_{amb} = 150\text{ }^{\circ}\text{C}$.
- (2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
- (3) $T_{amb} = -55\text{ }^{\circ}\text{C}$.

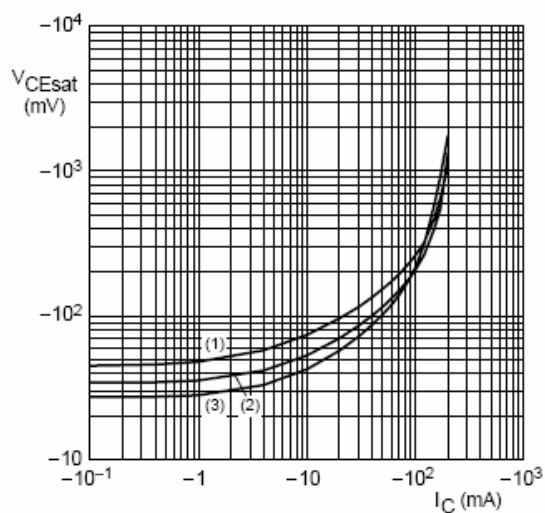
Fig.6 DC current gain as a function of collector current; typical values.



BC857B; $V_{CE} = -5\text{ V}$.

- (1) $T_{amb} = -55\text{ }^{\circ}\text{C}$.
- (2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
- (3) $T_{amb} = 150\text{ }^{\circ}\text{C}$.

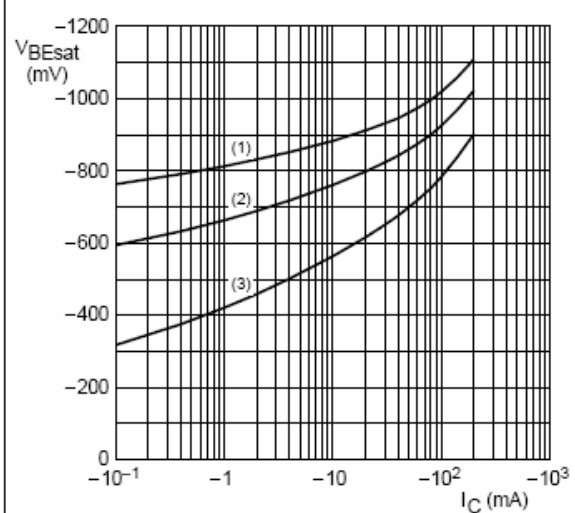
Fig.7 Base-emitter voltage as a function of collector current; typical values.



BC857B; $I_C/I_B = 20$.

- (1) $T_{amb} = 150\text{ }^{\circ}\text{C}$.
- (2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
- (3) $T_{amb} = -55\text{ }^{\circ}\text{C}$.

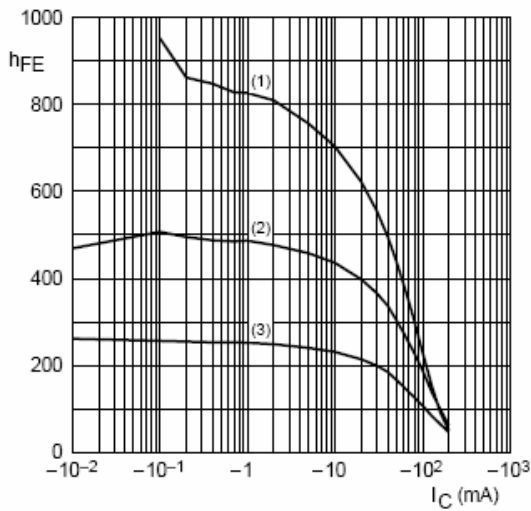
Fig.8 Collector-emitter saturation voltage as a function of collector current; typical values.



BC857B; $I_C/I_B = 20$.

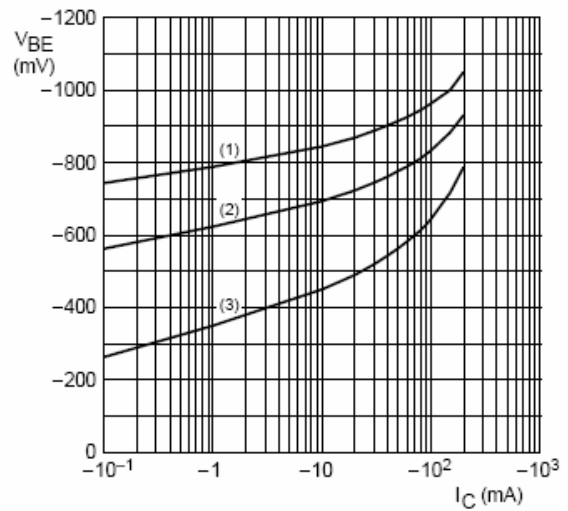
- (1) $T_{amb} = -55\text{ }^{\circ}\text{C}$.
- (2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
- (3) $T_{amb} = 150\text{ }^{\circ}\text{C}$.

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



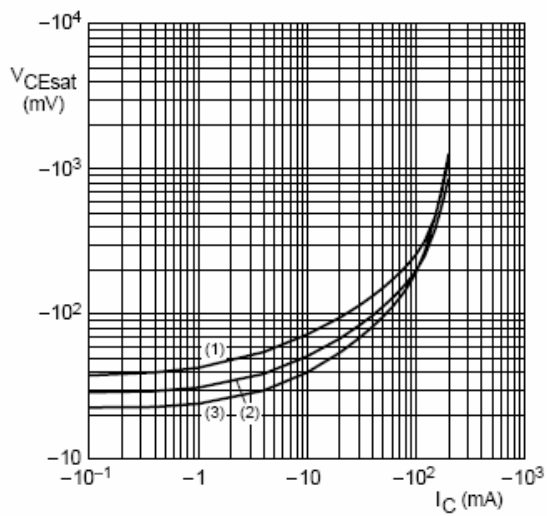
BC857C; $V_{CE} = -5\text{ V}$.
 (1) $T_{amb} = 150\text{ }^{\circ}\text{C}$.
 (2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
 (3) $T_{amb} = -55\text{ }^{\circ}\text{C}$.

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



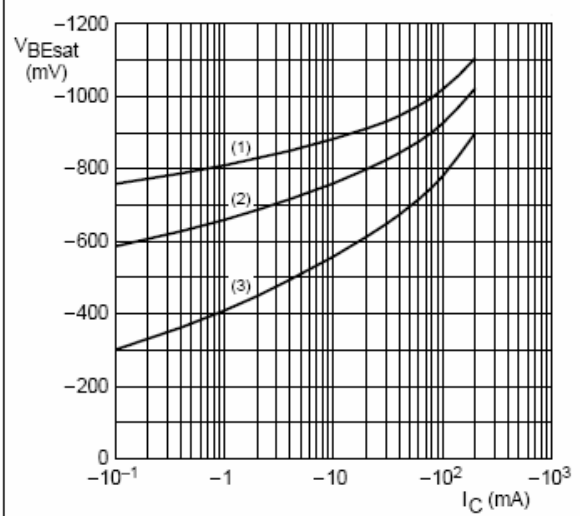
BC857C; $V_{CE} = -5\text{ V}$.
 (1) $T_{amb} = -55\text{ }^{\circ}\text{C}$.
 (2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
 (3) $T_{amb} = 150\text{ }^{\circ}\text{C}$.

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



BC857C; $I_C/I_B = 20$.
 (1) $T_{amb} = 150\text{ }^{\circ}\text{C}$.
 (2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
 (3) $T_{amb} = -55\text{ }^{\circ}\text{C}$.

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



BC857C; $I_C/I_B = 20$.
 (1) $T_{amb} = -55\text{ }^{\circ}\text{C}$.
 (2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
 (3) $T_{amb} = 150\text{ }^{\circ}\text{C}$.

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