

**FEATURES**

Ideally suited for automatic insertion

For Switching and AF Amplifier Applications

**BC856A/B** (PNP)  
**BC857A/B/C** (PNP)  
**BC858A/B/C** (PNP)

**Marking**

BC856A	BC856B	BC857A	BC857B
3A	3B	3E	3F

BC857C	BC858A	BC858B	BC858C
3G	3J	3K	3L


**MAXIMUM RATINGS (TA=25°C unless otherwise noted)**

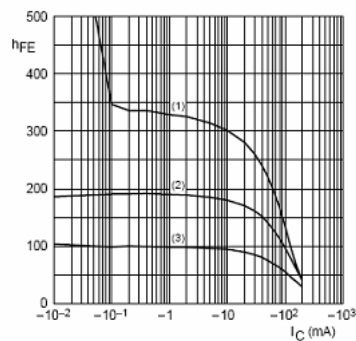
Parameter		Symbol	Value	Unit
Collector-Base Voltage	BC856	$V_{CBO}$	-80	V
	BC857	$V_{CBO}$	-50	
	BC858	$V_{CBO}$	-30	
Collector-Emitter Voltage	BC856	$V_{CEO}$	-65	V
	BC857	$V_{CEO}$	-45	
	BC858	$V_{CEO}$	-30	
Emitter-Base Voltage		$V_{EBO}$	-5	V
Collector Current -Continuous		$I_C$	-0.1	A
Collector Power Dissipation		$P_C$	0.2	W
Junction Temperature		$T_J$	150	°C
Storage Temperature		$T_{stg}$	-55 to +150	°C

ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^{\circ}\text{C}$  unless otherwise specified)

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

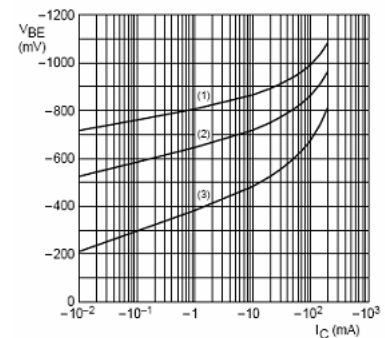
### BC856A/B BC857A/B/C BC858A/B/C

Typical Characteristics



BC857A;  $V_{CE} = -5\text{V}$ .  
 (1)  $T_{amb} = 150^{\circ}\text{C}$ .  
 (2)  $T_{amb} = 25^{\circ}\text{C}$ .  
 (3)  $T_{amb} = -55^{\circ}\text{C}$ .

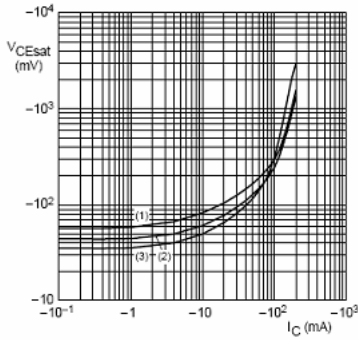
Fig.2 DC current gain as a function of collector current; typical values.



BC857A;  $V_{CE} = -5\text{V}$ .  
 (1)  $T_{amb} = -55^{\circ}\text{C}$ .  
 (2)  $T_{amb} = 25^{\circ}\text{C}$ .  
 (3)  $T_{amb} = 150^{\circ}\text{C}$ .

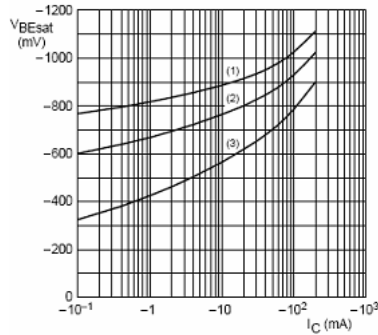
Fig.3 Base-emitter voltage as a function of collector current; typical values.

**BC856A/B**  
**BC857A/B/C** Typical Characteristics  
**BC858A/B/C**



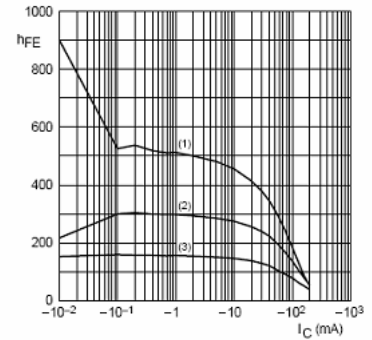
**BC857A;**  $I_C/I_B = 20$ .  
(1)  $T_{amb} = 150\text{ }^\circ\text{C}$ .  
(2)  $T_{amb} = 25\text{ }^\circ\text{C}$ .  
(3)  $T_{amb} = -55\text{ }^\circ\text{C}$ .

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



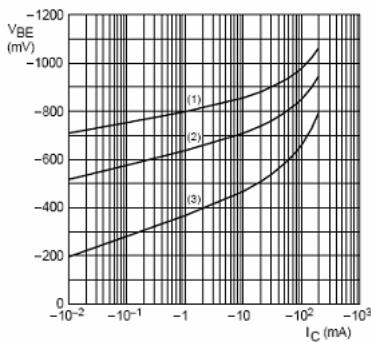
**BC857A;**  $I_C/I_B = 20$ .  
(1)  $T_{amb} = -55\text{ }^\circ\text{C}$ .  
(2)  $T_{amb} = 25\text{ }^\circ\text{C}$ .  
(3)  $T_{amb} = 150\text{ }^\circ\text{C}$ .

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



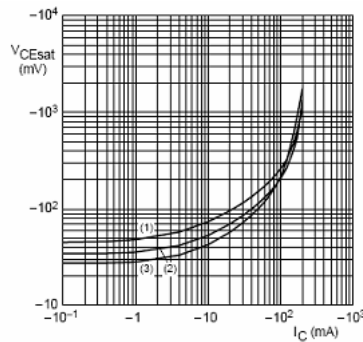
**BC857B;**  $V_{CE} = -5\text{ V}$ .  
(1)  $T_{amb} = 150\text{ }^\circ\text{C}$ .  
(2)  $T_{amb} = 25\text{ }^\circ\text{C}$ .  
(3)  $T_{amb} = -55\text{ }^\circ\text{C}$ .

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



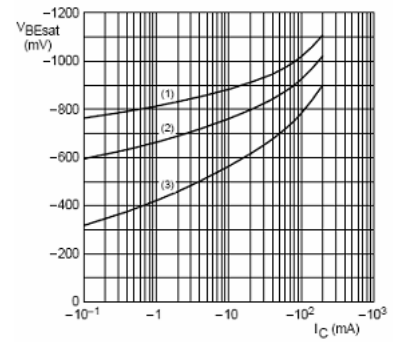
**BC857B;**  $V_{CE} = -5\text{ V}$ .  
(1)  $T_{amb} = -55\text{ }^\circ\text{C}$ .  
(2)  $T_{amb} = 25\text{ }^\circ\text{C}$ .  
(3)  $T_{amb} = 150\text{ }^\circ\text{C}$ .

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.