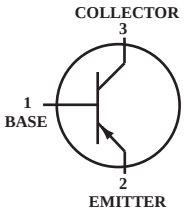
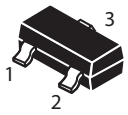
WEITRON

BC856A/B-BC857A/B/C
BC858A/B/C-BC859B/C

General Purpose Transistor
PNP Silicon

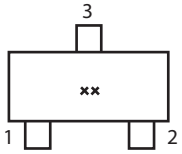
Lead(Pb)-Free





SOT-23

MARKING DIAGRAM



XX = Device Code (See Table Below)

Maximum Ratings (T_A=25°C unless otherwise noted)

Rating		Symbol	Value	Unit
Collector-Emitter Voltage	BC856	V_{CEO}	-65	V
	BC857		-45	
	BC858,BC859		-30	
Collector-Base Voltage	BC856	V_{CBO}	-80	V
	BC857		-50	
	BC858,BC859		-30	
Emitter-Base VOltage		V_{EBO}	-5.0	V
Collector Current-Continuous		I_C	-100	mAdc

Thermal Characteristics

Characteristics	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (1) (Note 1.)T_A=25°C	P_D	225	mW
Derate above 25°C		1.8	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate, (Note 2.) T_A=25°C	P_D	300	mW
Derate above 25°C		2.4	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage, Temperature	$T_{J,Tstg}$	-55 to +150	°C

1.FR-5=1.0 x 0.75 x 0.062 in. 2.Alumina=0.4 x 0.3 x 0.024 in. 99.5% alumina.

Electrical Characteristics (TA=25°C Unless Otherwise noted)

Characteristics		Symbol	Min	Typ	Max	Unit
Off Characteristics						
Collector-Emitter Breakdown Voltage (I_C= -10mA)	BC856 Series	$V_{(BR)CEO}$	-65	-	-	V
	BC857 Series		-45	-	-	
	BC858, BC859 Series		-30	-	-	
Collector-Emitter Breakdown Voltage (I_C=-10 μA ,V_{EB}=0)	BC856 Series	$V_{(BR)CES}$	-80	-	-	V
	BC857 Series		-50	-	-	
	BC858, BC859 Series		-30	-	-	
Collector-Base Breakdown Voltage (I_C=-10 μA)	BC856 Series	$V_{(BR)CBO}$	-80	-	-	V
	BC857 Series		-50	-	-	
	BC858, BC859 Series		-30	-	-	
Emitter-Base Breakdown Voltage (I_E=-1.0 μA)	BC856 Series	$V_{(BR)EBO}$	-5.0	-	-	V
	BC857 Series		-5.0	-	-	
	BC858, BC859 Series		-5.0	-	-	
Collector Cutoff Current (V_{CB}=-30V)		I_{CBO}	-	-	-15	nA
(V_{CB}=-30V, T_A=150°C)			-	-	-4.0	mA

Electrical Characteristics (TA=25℃ Unless Otherwise noted)

Characteristics	Symbol	Min	Typ	Max	Unit

On Characteristics

DC Current Gain	h_{FE}				
(I_C= -10uA, V_{CE}=-5.0V) BC856A, BC857A, BC858A		-	90	-	-
BC856B, BC857B, BC858B		-	150	-	
BC858C		-	270	-	
(I_C= -2.0mA, V_{CE}=-5.0V) BC856A, BC857A, BC858A		125	180	250	
BC856B, BC857B, BC858B, BC859B		220	290	475	
BC857C, BC858C, BC859C		420	520	800	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$				V
(I_C= -10mA, I_B=-0.5mA)		-	-	-0.3	
(I_C= -100mA, I_B=-5.0mA)		-	-	-0.65	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$				V
(I_C= -10mA, I_B=-0.5mA)		-	-0.7	-	
(I_C= -100mA, I_B=-5.0mA)		-	-0.9	-	
Base-Emitter On Voltage	$V_{BE(on)}$				V
(I_C= -2.0mA, V_{CE}= -5.0V)		-0.6	-	-0.75	
(I_C= -10mA, V_{CE}= -5.0V)		-	-	-0.82	

Small-signal Characteristics

Current-Gain-Bandwidth Product (I_C= -10mA, VCE= -5.0VDC, f=100MHz)	f_T	100	-	-	MHz
Output Capacitance (V_{CB}= -10V, f=1.0MHz)	C_{obo}	-	-	4.5	pF
Noise Figure	NF				dB
(I_C= -0.2mA, V_{CE}= -5.0Vdc, Rs=2.0kΩ, f=1.0kHz, BW=200Hz)					
BC856, BC857, BC858 Series		-	-	10	
BC859, Series		-	-	4.0	

Device Marking

BC856A=3A; BC856B=3B; BC857A=3E; BC857B=3F; BC857C=3G
BC858A=3J; BC858B=3K; BC858C=3L; BC859B=4B; BC859C=4C

BC857/BC858/BC859 Series

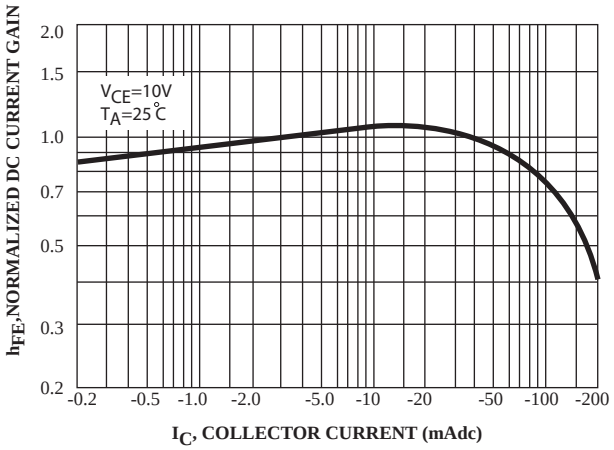
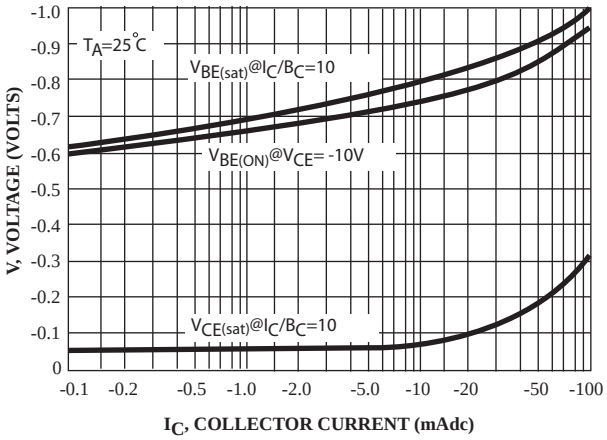


Figure1.Normalized DC Current Gain



Firure2. "Saturation" And "On" Voltage

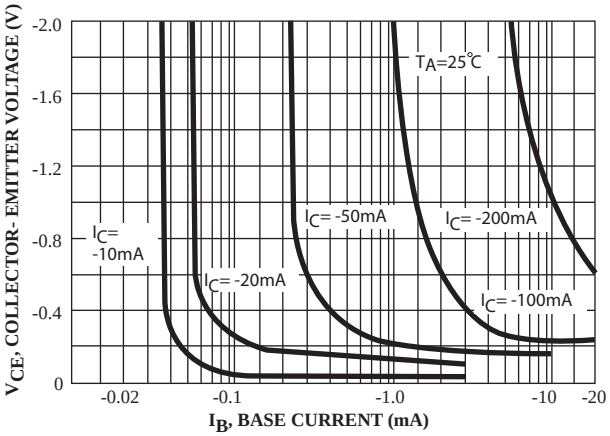


Figure 3. Collector Saturation Region

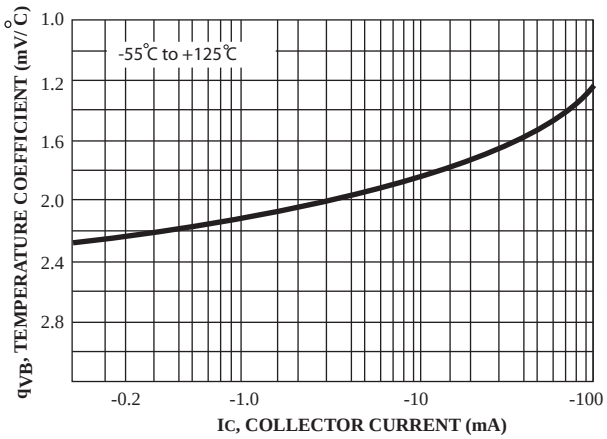


Figure 4. Base-Emitter Temperature Coefficient

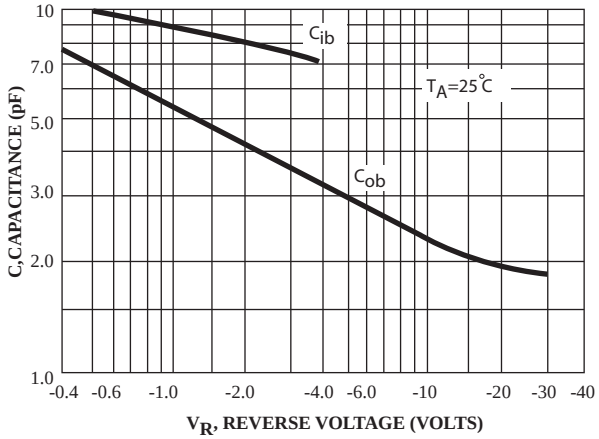


Figure 5. Capacitances

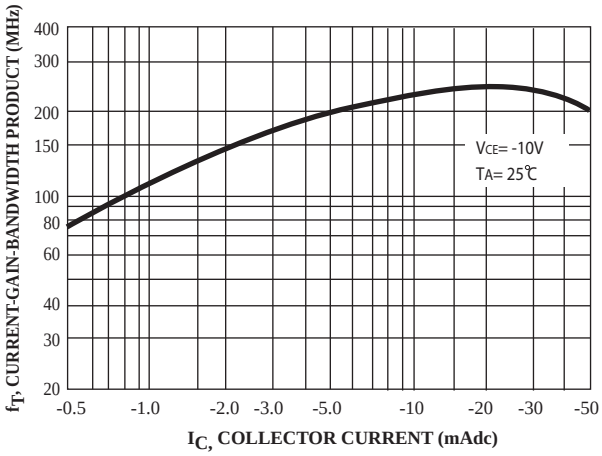


Figure 6. Current-Gain- Bandwidth Product

BC856 Series

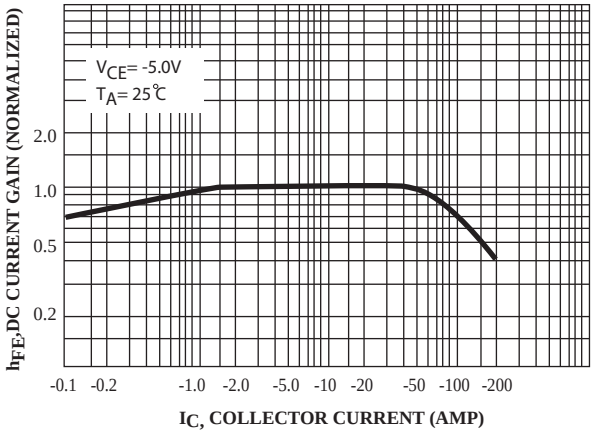


Figure 7. DC Current Gain

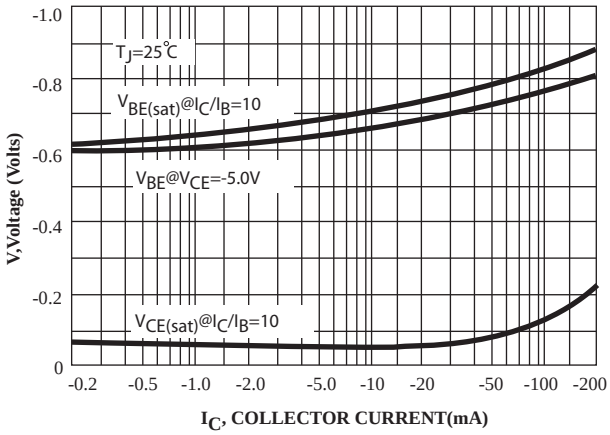


Figure 8. "ON" Voltage

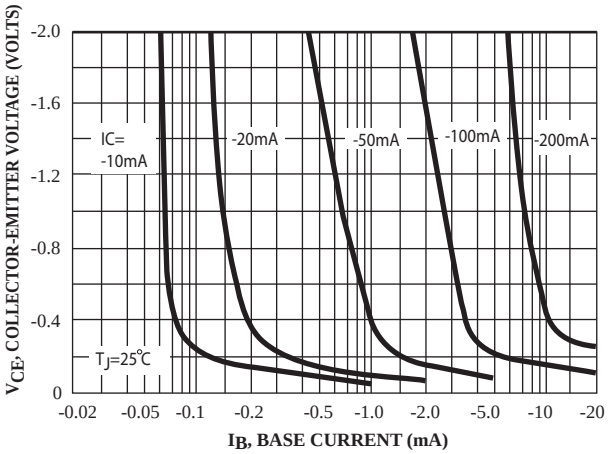


Figure 9. Collector Saturation Region

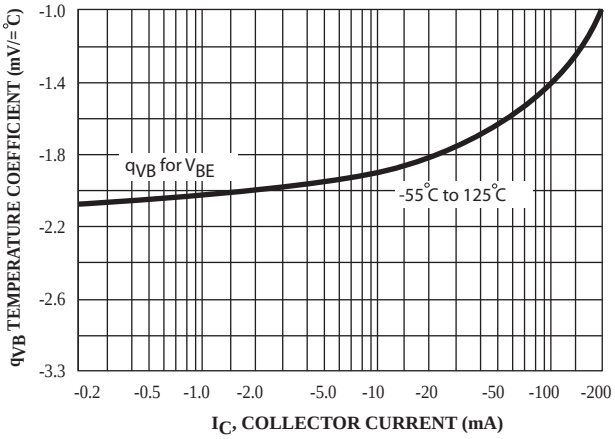


Figure 10. Base-Emitter Temperature Coefficient

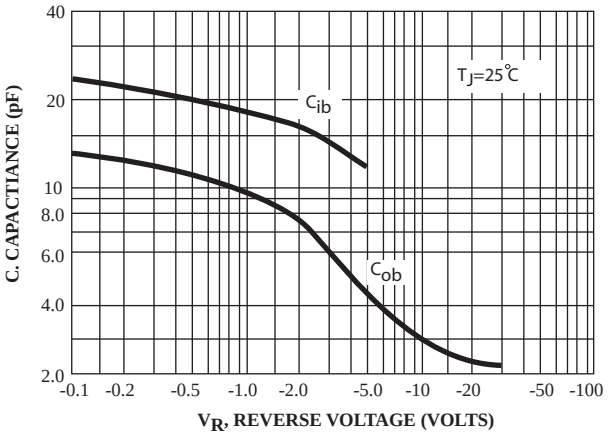


Figure 11. Capacitance

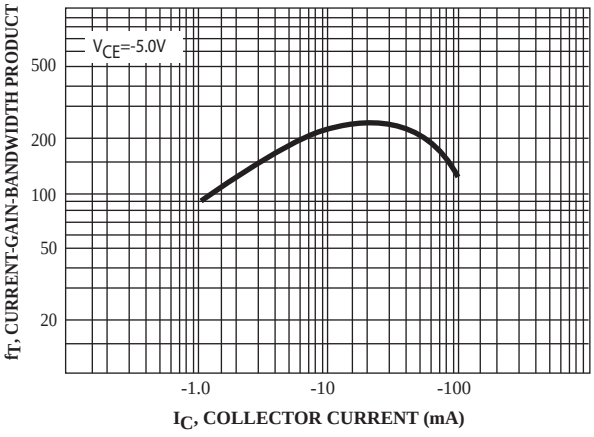


Figure 12.Current-Gain-Bandwidth Product