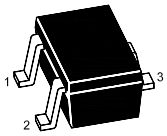
BC846W…BC850W

NPN Silicon Epitaxial Planar Transistor

for general purpose and switching applications



1.Base 2.Emitter 3.Collector
SOT-323 Plastic Package

Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage			
BC846W	V_{CBO}	80	V
BC847W		50	
BC848W		30	
BC849W		30	
BC850W		50	
Collector Emitter Voltage			
BC846W	V_{CEO}	65	V
BC847W		45	
BC848W		30	
BC849W		30	
BC850W		45	
Emitter Base Voltage			
BC846W	V_{EBO}	6	V
BC847W		6	
BC848W		5	
BC849W		5	
BC850W		5	
Collector Current	I_C	100	mA
Peak Collector Current	I_{CM}	200	mA
Total Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	- 55 to + 150	°C

Characteristics at T_a = 25 °C

Parameter		Symbol	Min.	Max.	Unit
DC Current Gain					
at V_{CE} = 5 V, I_C = 2 mA	BC846AW~BC850AW	h_{FE}	110	220	-
	BC846BW~BC850BW	h_{FE}	200	450	-
	BC846CW~BC850CW	h_{FE}	420	800	-
Collector Base Voltage					
at I_C = 10 µA					
	BC846W	V_{CBO}	80	-	V
	BC847W		50	-	
	BC848W		30	-	
	BC849W		30	-	
	BC850W		50	-	
Collector Emitter Voltage					
at I_C = 10 mA					
	BC846W	V_{CEO}	65	-	V
	BC847W		45	-	
	BC848W		30	-	
	BC849W		30	-	
	BC850W		45	-	
Emitter Base Voltage					
at I_E = 1 µA					
	BC846W	V_{EBO}	6	-	V
	BC847W		6	-	
	BC848W		5	-	
	BC849W		5	-	
	BC850W		5	-	
Collector Base Cutoff Current					
at V_{CB} = 30 V		I_{CBO}	-	15	nA
Emitter Base Cutoff Current					
at V_{EB} = 5 V		I_{EBO}	-	100	nA
Collector Emitter Saturation Voltage					
at I_C = 10 mA, I_B = 0.5 mA		$V_{CE(sat)}$	-	0.25	V
I_C = 100 mA, I_B = 5 mA			-	0.6	
Base Emitter Voltage					
at V_{CE} = 5 V, I_C = 2 mA		V_{BE}	0.58	0.7	V
V_{CE} = 5 V, I_C = 10 mA			-	0.77	
Transition Frequency					
at V_{CE} = 5 V, I_C = 10 mA, f = 100 MHz		f_T	100	-	MHz
Collector Output Capacitance					
at V_{CB} = 10 V, I_E = 0, f = 1 MHz		C_{ob}	-	4.5	pF

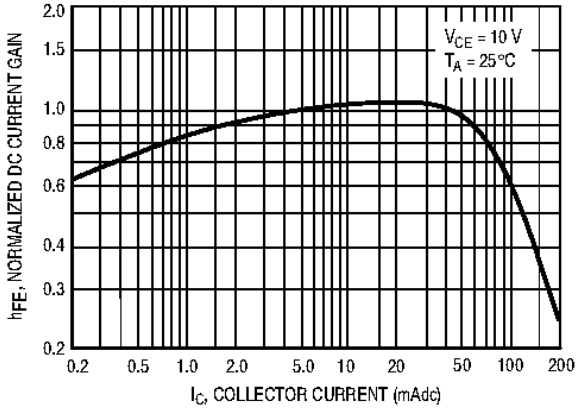


Figure 1. Normalized DC Current Gain

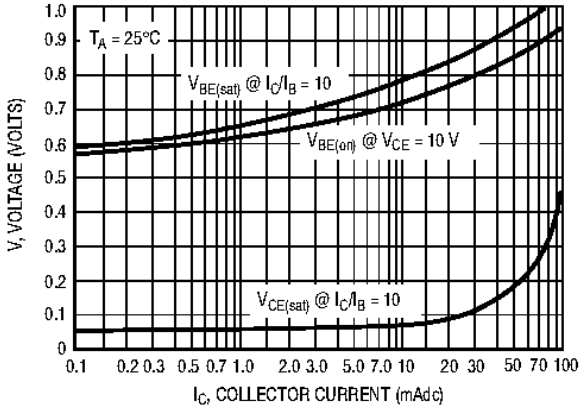


Figure 2. "Saturation" and "On" Voltages

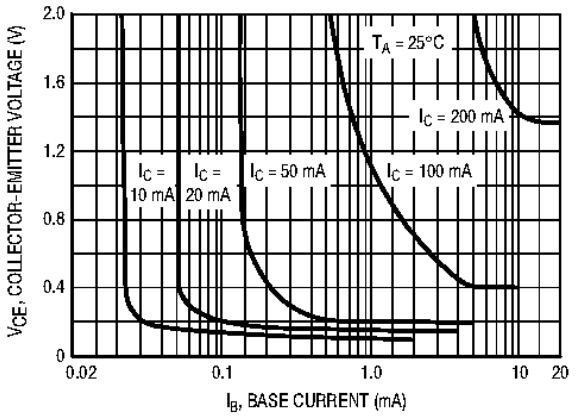


Figure 3. Collector Saturation Region

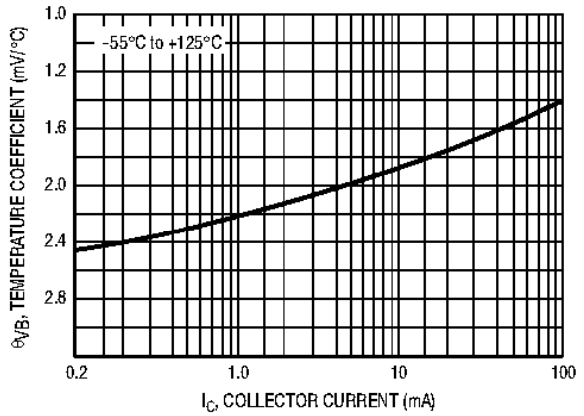


Figure 4. Base−Emitter Temperature Coefficient

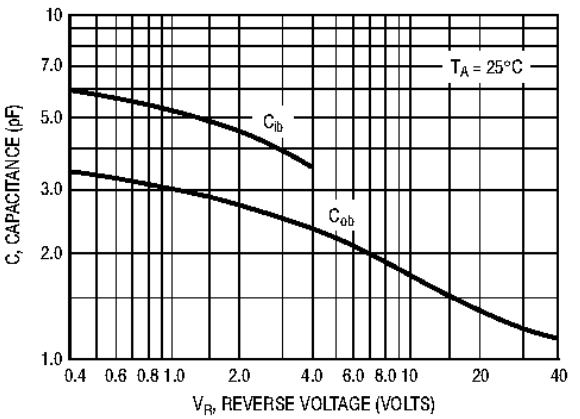


Figure 5. Capacitances

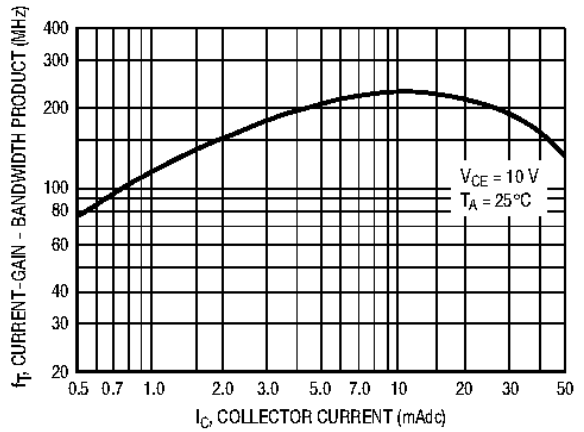


Figure 6. Current−Gain − Bandwidth Product

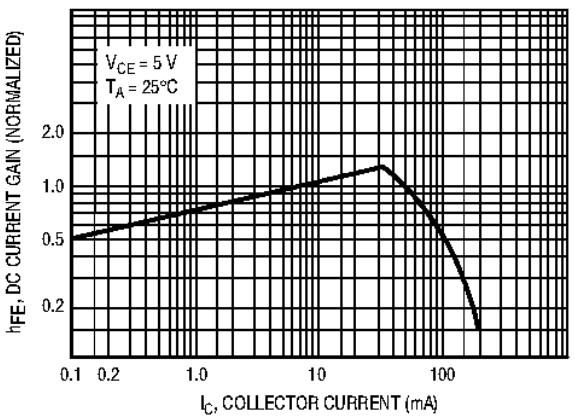


Figure 7. DC Current Gain

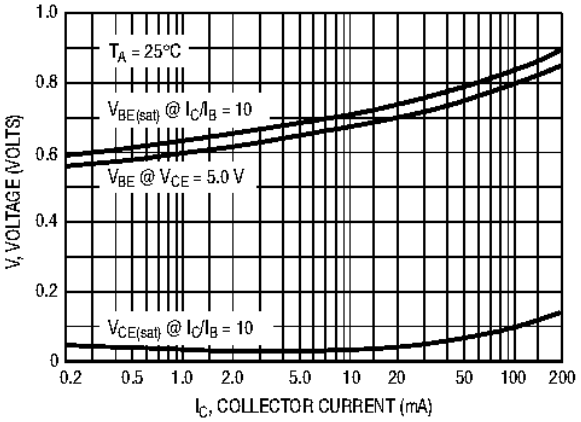


Figure 8. "On" Voltage

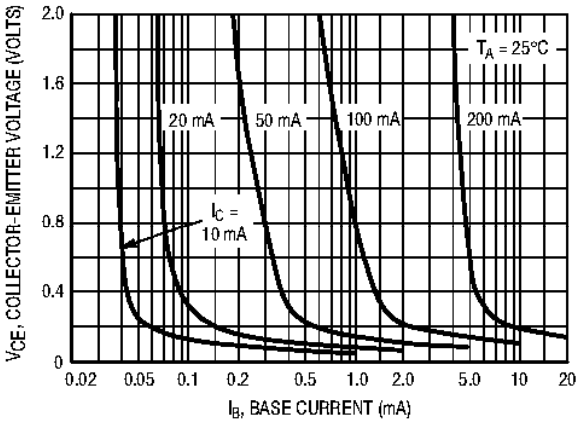


Figure 9. Collector Saturation Region

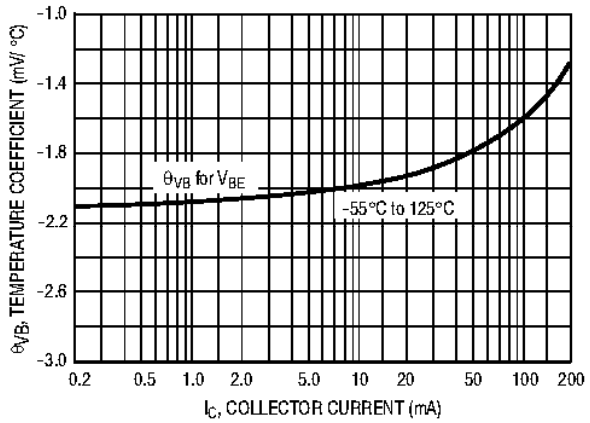


Figure 10. Base−Emitter Temperature Coefficient

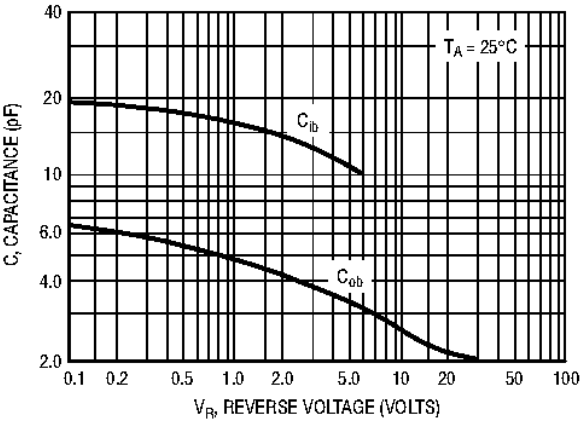


Figure 11. Capacitance

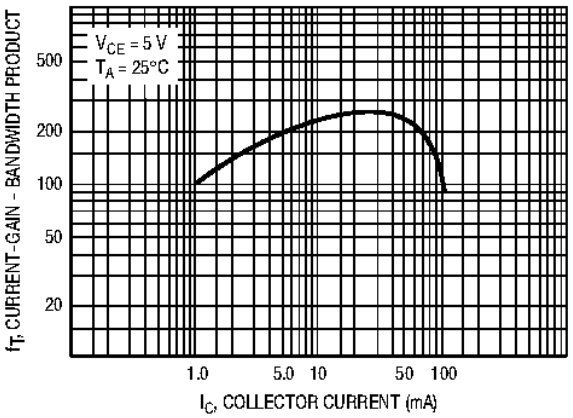


Figure 12. Current−Gain − Bandwidth Product