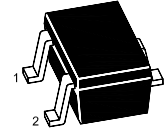


NPN Silicon Epitaxial Planar Transistor

for general purpose and switching applications


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

Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	BC846W 80	V
		BC847W 50	
		BC848W 30	
		BC849W 30	
		BC850W 50	
Collector Emitter Voltage	V_{CEO}	BC846W 65	V
		BC847W 45	
		BC848W 30	
		BC849W 30	
		BC850W 45	
Emitter Base Voltage	V_{EBO}	BC846W 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	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

Characteristics at $T_a = 25\text{ }^\circ\text{C}$

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

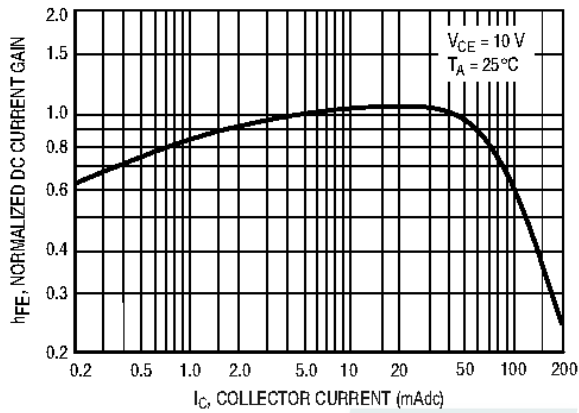


Figure 1. Normalized DC Current Gain

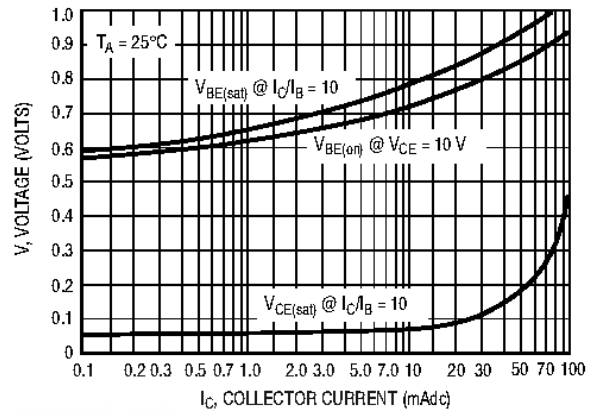


Figure 2. "Saturation" and "On" Voltages

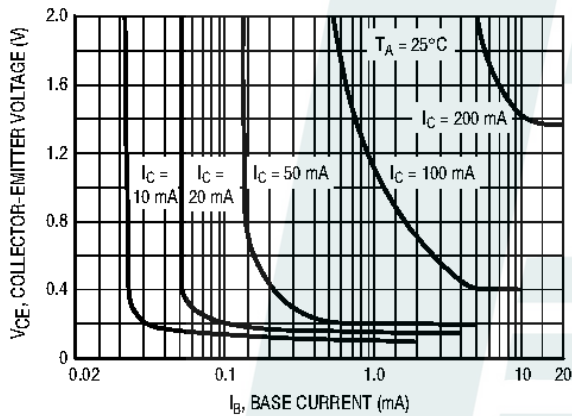


Figure 3. Collector Saturation Region

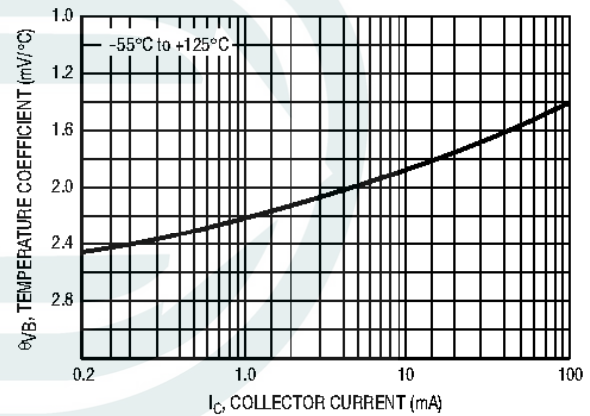


Figure 4. Base-Emitter Temperature Coefficient

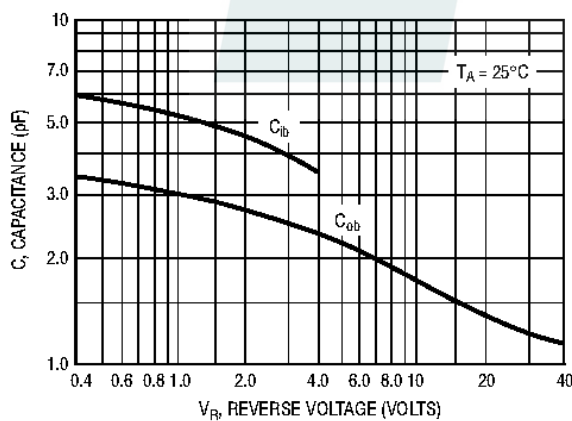


Figure 5. Capacitances

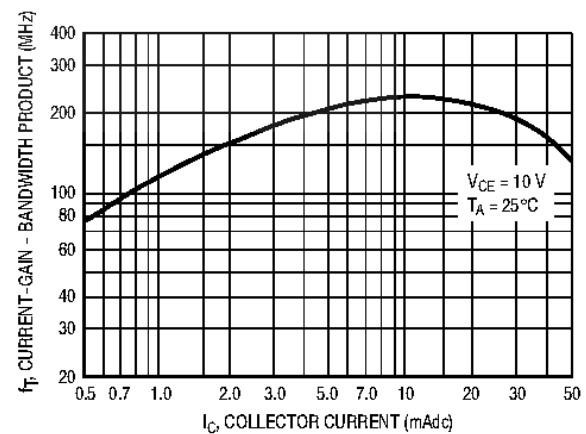


Figure 6. Current-Gain - Bandwidth Product

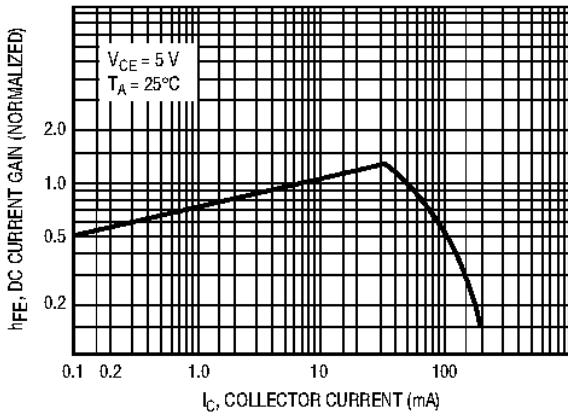


Figure 7. DC Current Gain

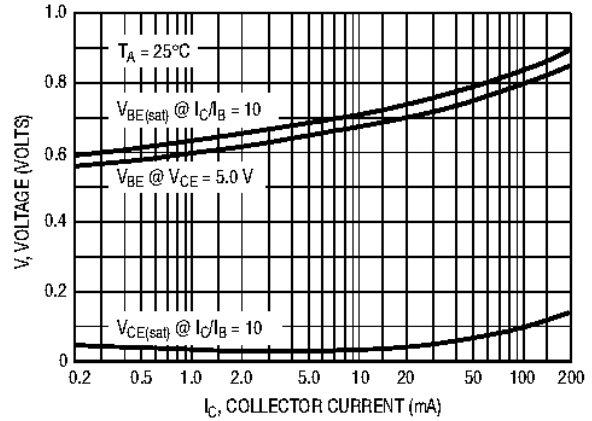


Figure 8. "On" Voltage

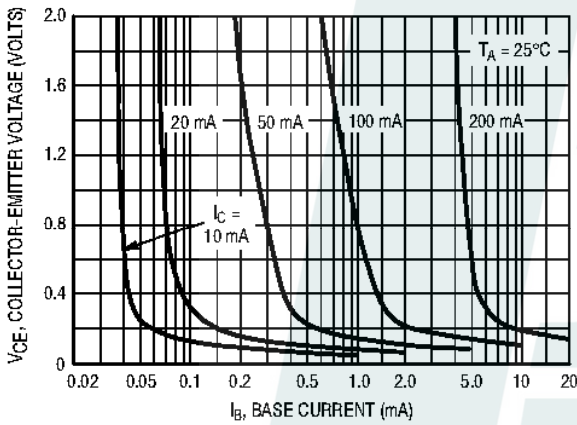


Figure 9. Collector Saturation Region

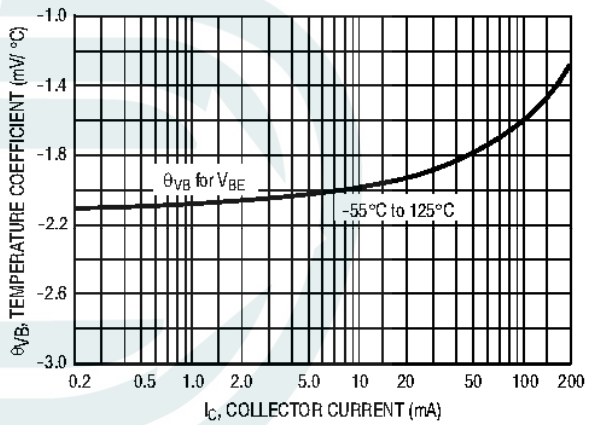


Figure 10. Base-Emitter Temperature Coefficient

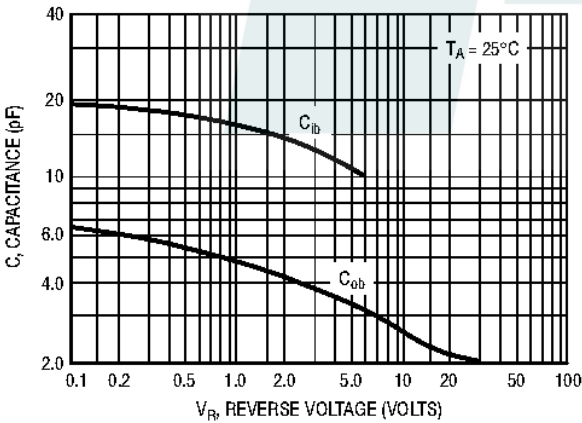


Figure 11. Capacitance

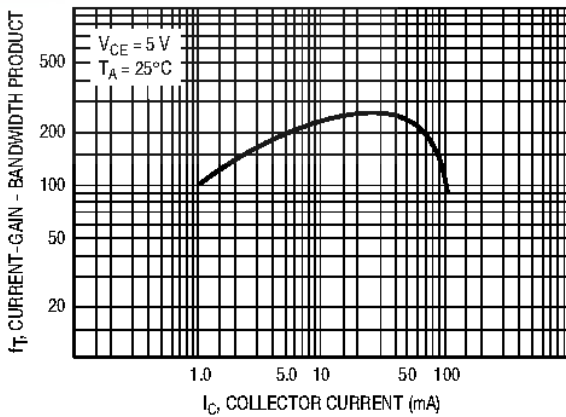


Figure 12. Current-Gain - Bandwidth Product