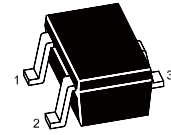


**BC846W...BC850W****NPN Silicon Epitaxial Planar Transistor**

for general purpose and switching applications



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

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

Parameter	Symbol	Value	Unit
Collector Base Voltage BC846W BC847W BC848W BC849W BC850W	$V_{CBO}$	80 50 30 30 50	V
Collector Emitter Voltage BC846W BC847W BC848W BC849W BC850W	$V_{CEO}$	65 45 30 30 45	V
Emitter Base Voltage BC846W BC847W BC848W BC849W BC850W	$V_{EBO}$	6 6 5 5 5	V
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	$^\circ\text{C}$

**BC846W...BC850W****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	

## BC846W...BC850W

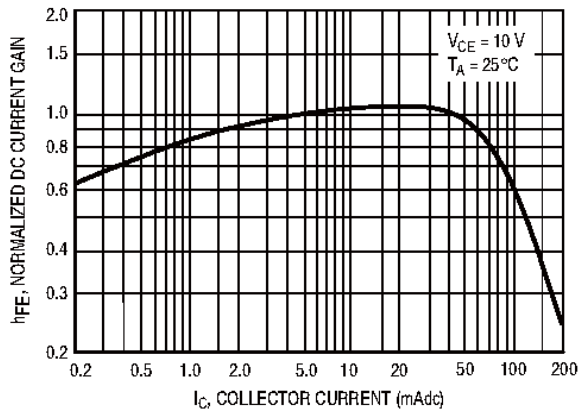


Figure 1. Normalized DC Current Gain

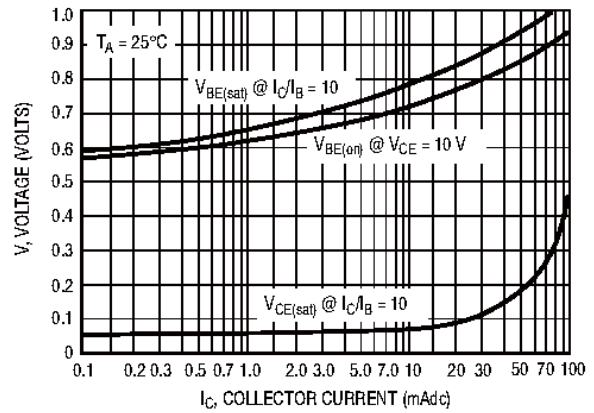


Figure 2. "Saturation" and "On" Voltages

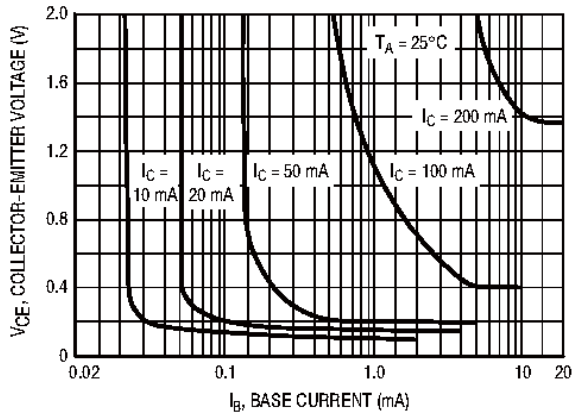


Figure 3. Collector Saturation Region

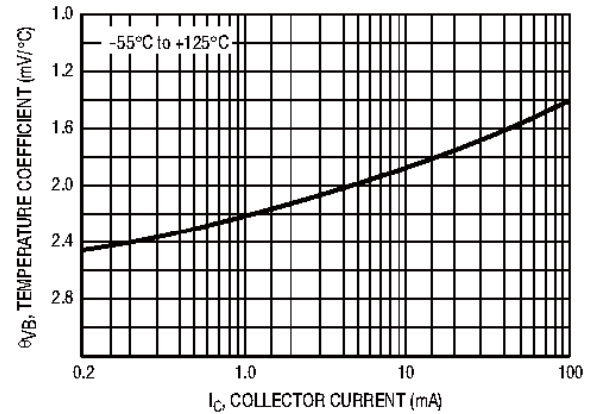


Figure 4. Base-Emitter Temperature Coefficient

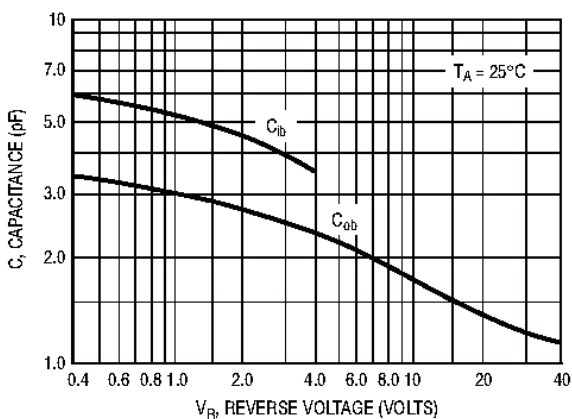


Figure 5. Capacitances

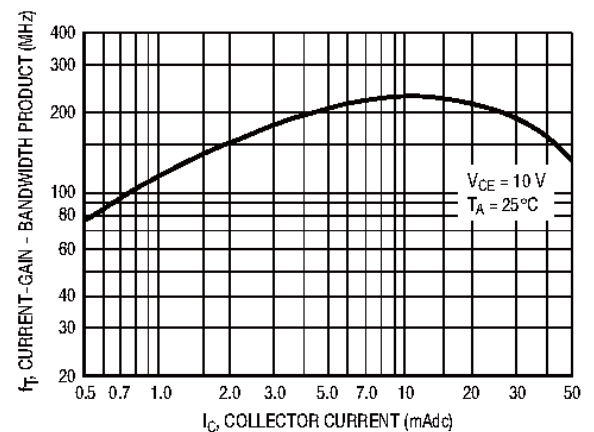


Figure 6. Current-Gain - Bandwidth Product

## BC846W...BC850W

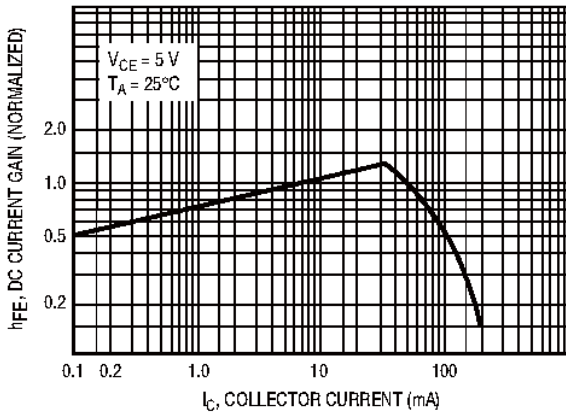


Figure 7. DC Current Gain

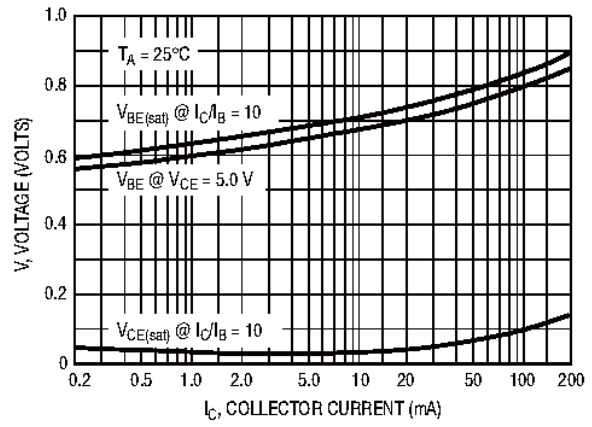


Figure 8. "On" Voltage

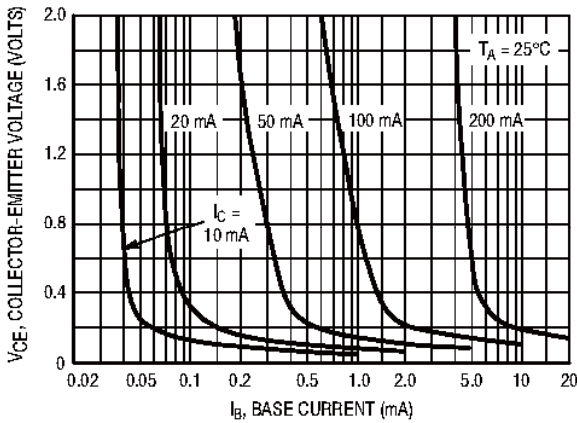


Figure 9. Collector Saturation Region

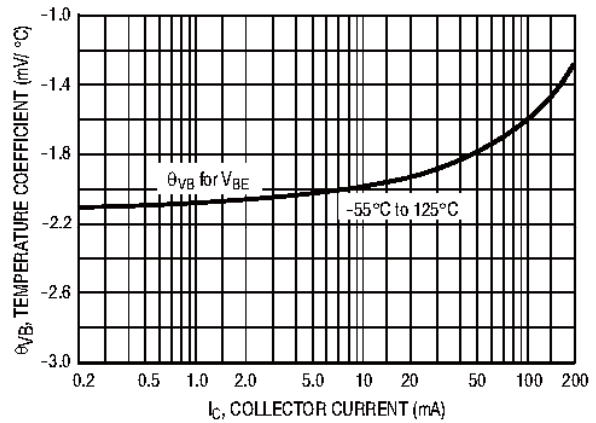


Figure 10. Base-Emitter Temperature Coefficient

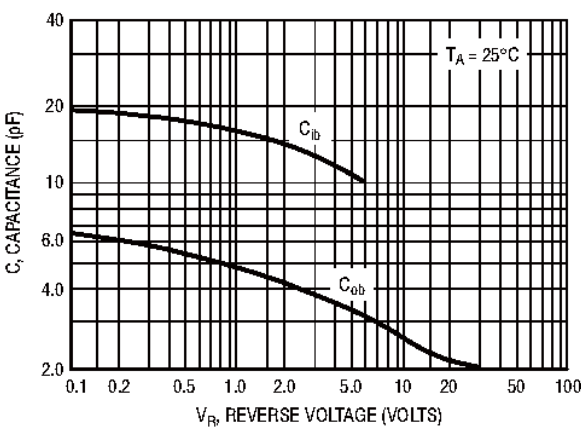


Figure 11. Capacitance

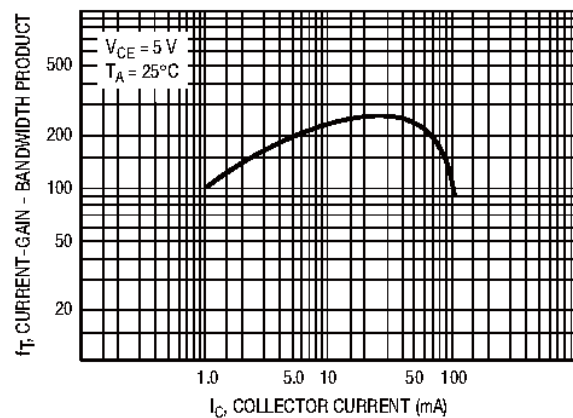


Figure 12. Current-Gain - Bandwidth Product