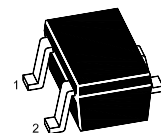


NPN Silicon Epitaxial Planar Transistor

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

MARKING CODE

TYPE	846AW	846BW	846CW	847AW	847BW	847CW	848AW	848BW	848CW
MARKING	1A	1B	1C	1E	1F	1G	1J	1K	1L
TYPE	849AW	849BW	849CW	850AW	850BW	850CW			
MARKING	2A	2B	2C	2E	2F	2G			

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

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $V_{CE} = 5\text{ V}$, $I_C = 2\text{ mA}$	BC846AW~BC850AW h_{FE} BC846BW~BC850BW h_{FE} BC846CW~BC850CW h_{FE}	110 200 420	220 450 800	- - -
Collector Base Voltage at $I_C = 10\text{ }\mu\text{A}$	BC846W BC847W BC848W BC849W BC850W V_{CBO}	80 50 30 30 50	- - - - -	V
Collector Emitter Voltage at $I_C = 10\text{ mA}$	BC846W BC847W BC848W BC849W BC850W V_{CEO}	65 45 30 30 45	- - - - -	V
Emitter Base Voltage at $I_E = 1\text{ }\mu\text{A}$	BC846W BC847W BC848W BC849W BC850W V_{EBO}	6 6 5 5 5	- - - - -	V
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 0.6	V
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}	- -	0.7 0.77	V
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

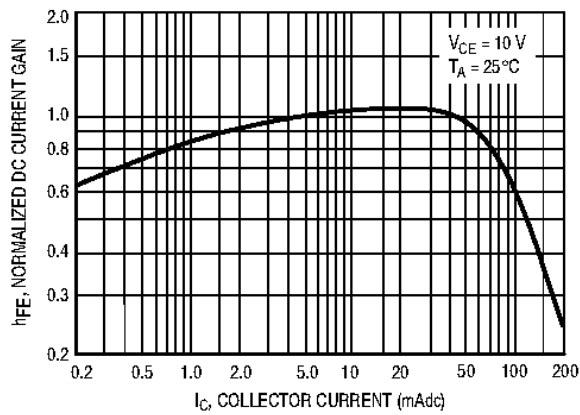


Figure 1. Normalized DC Current Gain

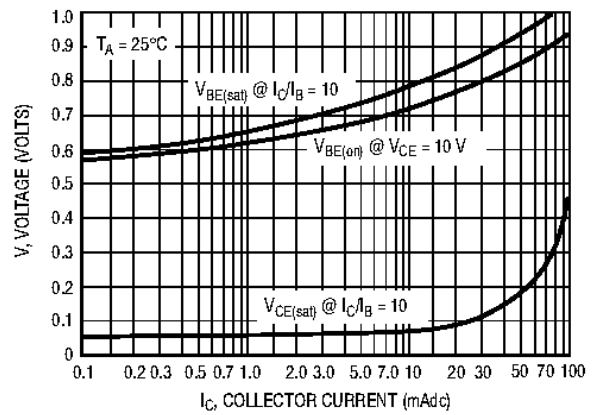


Figure 2. "Saturation" and "On" Voltages

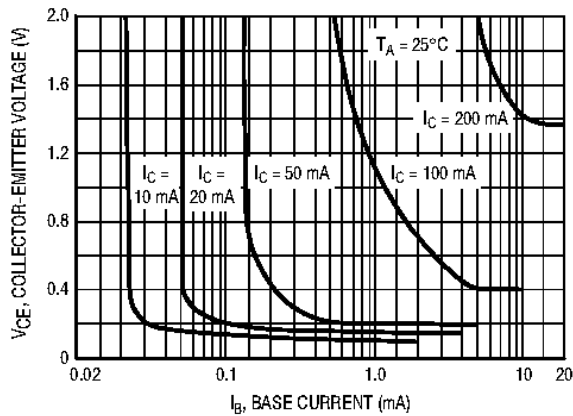


Figure 3. Collector Saturation Region

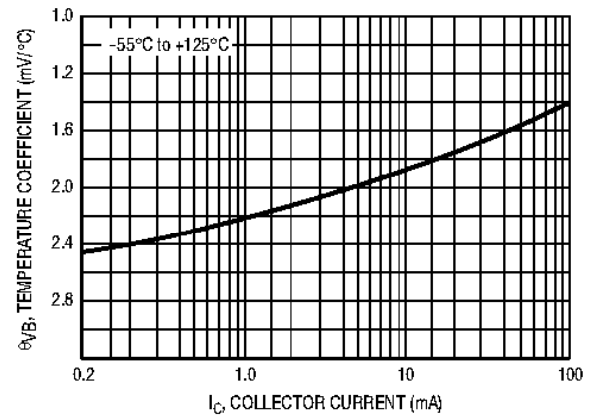


Figure 4. Base-Emitter Temperature Coefficient

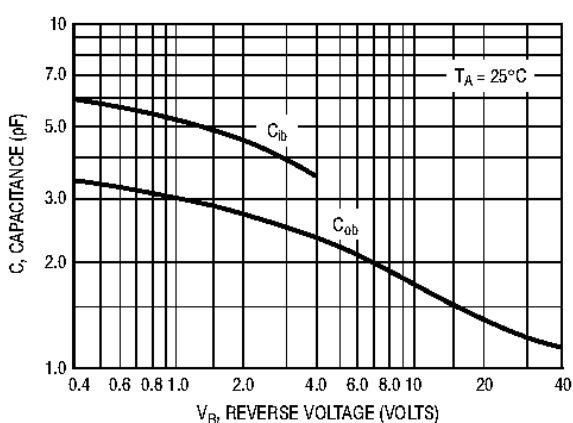


Figure 5. Capacitances

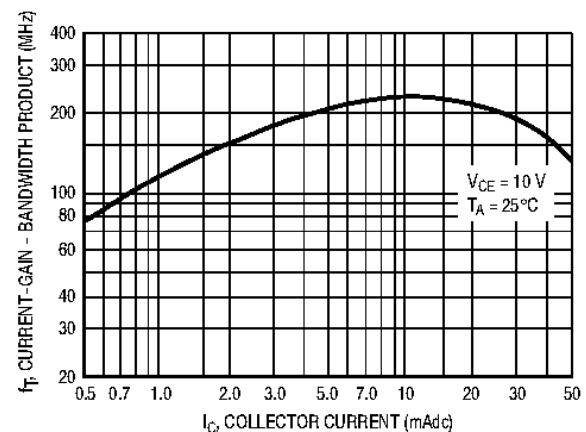


Figure 6. Current-Gain - Bandwidth Product

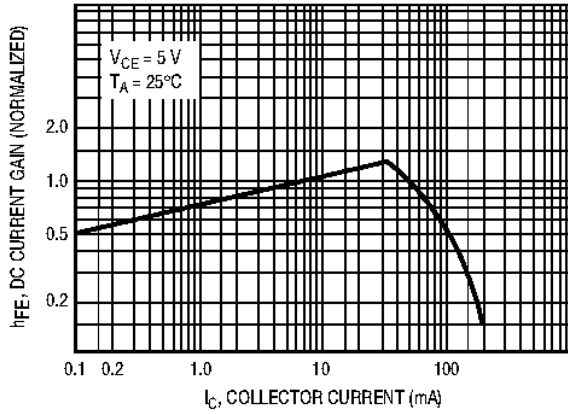


Figure 7. DC Current Gain

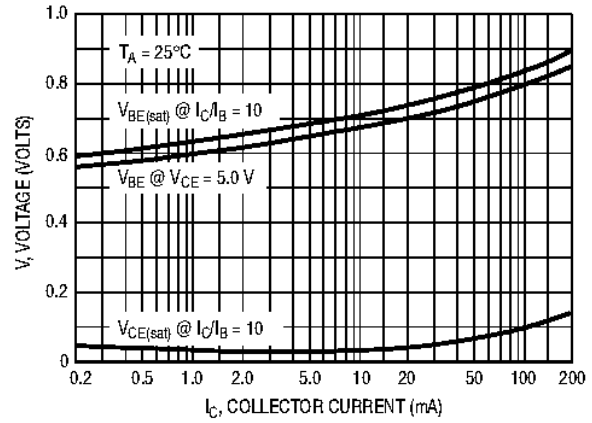


Figure 8. "On" Voltage

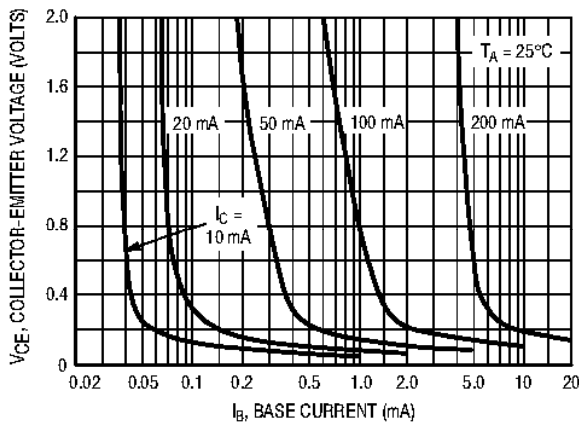


Figure 9. Collector Saturation Region

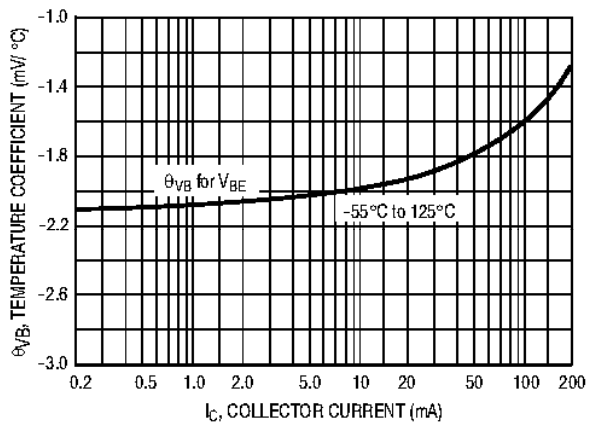


Figure 10. Base-Emitter Temperature Coefficient

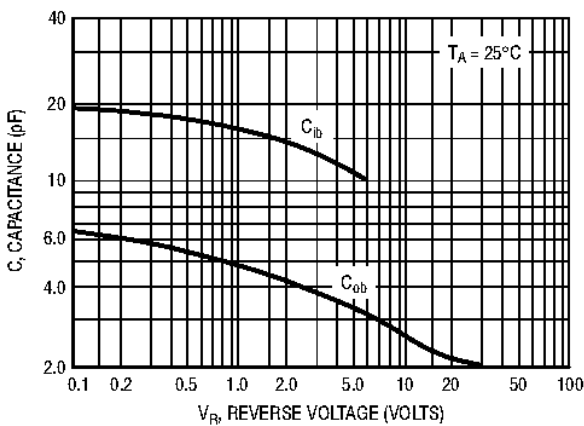


Figure 11. Capacitance

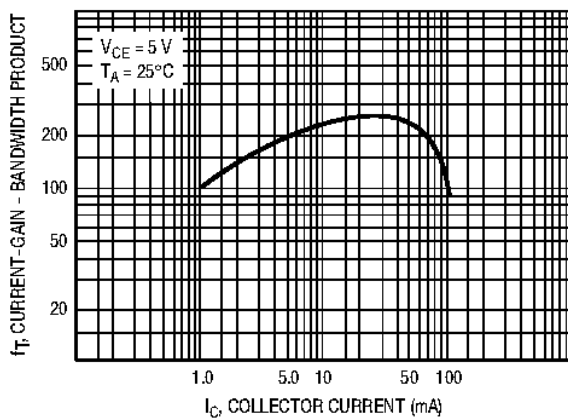


Figure 12. Current-Gain - Bandwidth Product