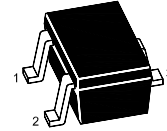


BC846W...BC850W

NPN Silicon Epitaxial Planar Transistor

for general purpose and switching applications



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

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

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

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 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}	0.58 -	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

DEVICE MARKING

BC846AW=1A;BC846BW=1B;BC846CW=1C
 BC847AW=1E;BC847BW=1F;BC847CW=1G
 BC848AW=1J;BC848BW=1K;BC848CW=1L
 BC849AW=1E;BC849BW=1F;BC849CW=1G
 BC850AW=1E;BC850BW=1F;BC850CW=1G

BC846W...BC850W

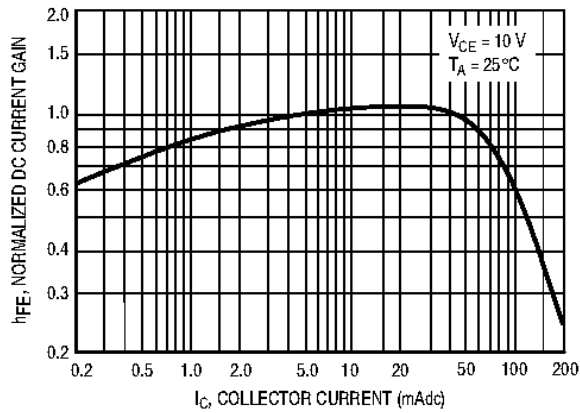


Figure 1. Normalized DC Current Gain

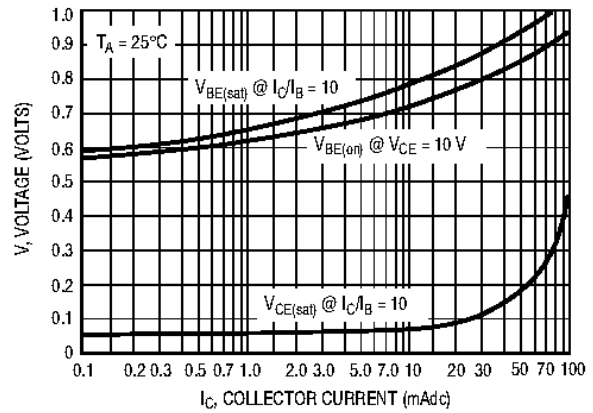


Figure 2. "Saturation" and "On" Voltages

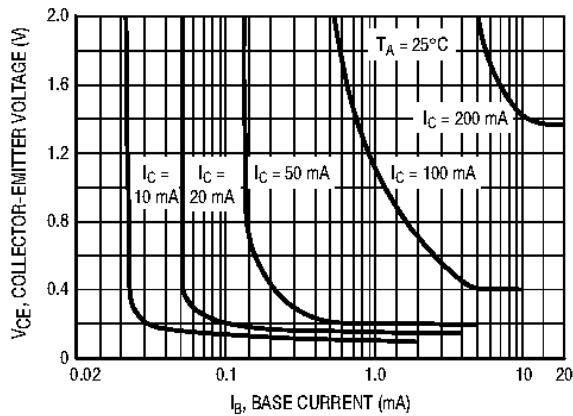


Figure 3. Collector Saturation Region

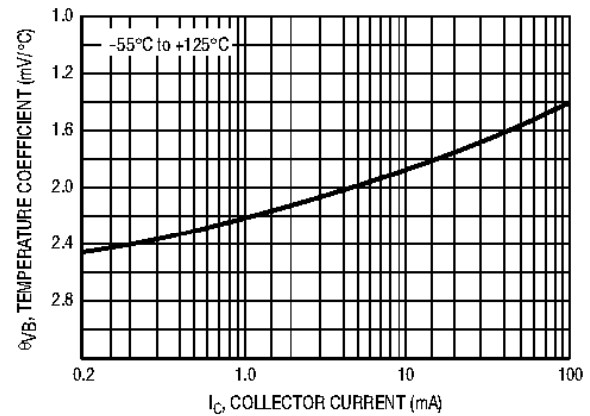


Figure 4. Base-Emitter Temperature Coefficient

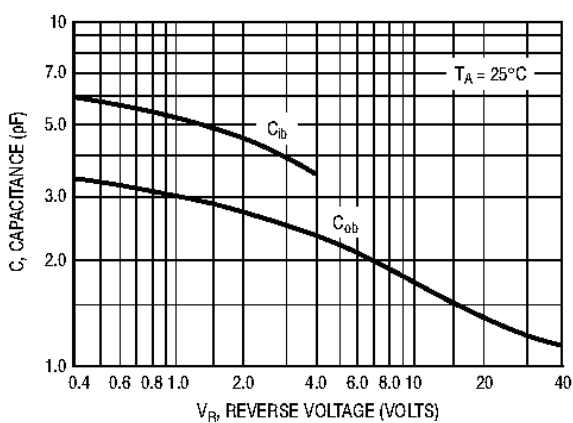


Figure 5. Capacitances

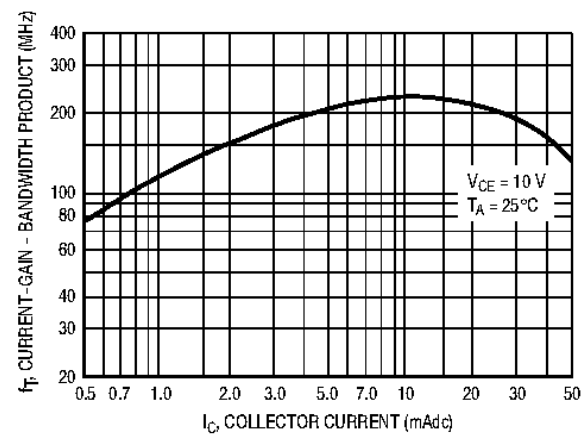


Figure 6. Current-Gain - Bandwidth Product

BC846W...BC850W

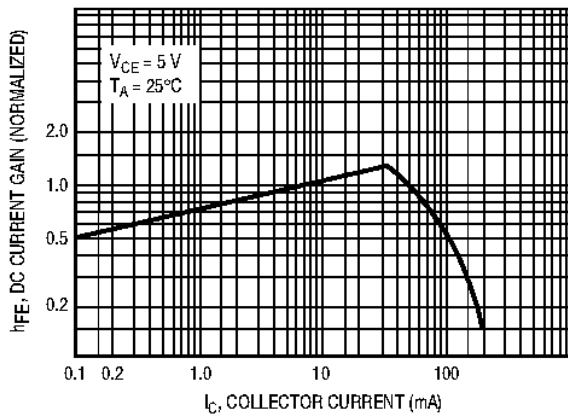


Figure 7. DC Current Gain

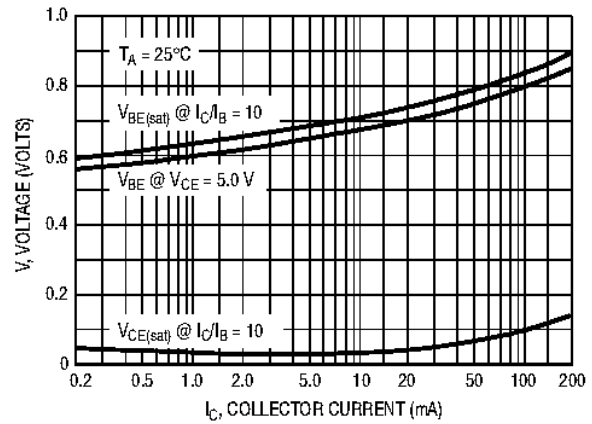


Figure 8. "On" Voltage

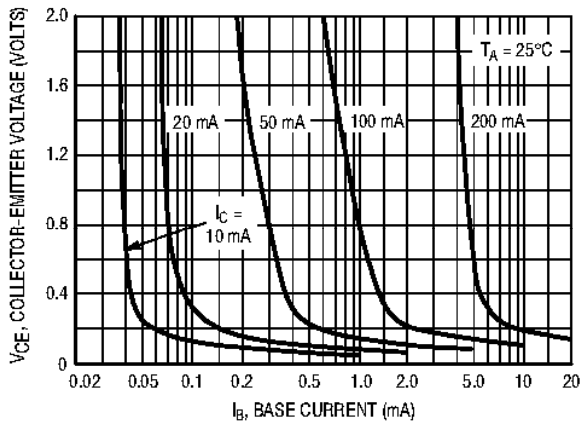


Figure 9. Collector Saturation Region

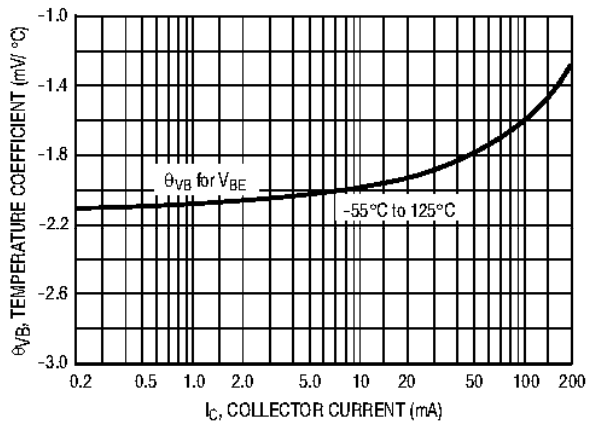


Figure 10. Base-Emitter Temperature Coefficient

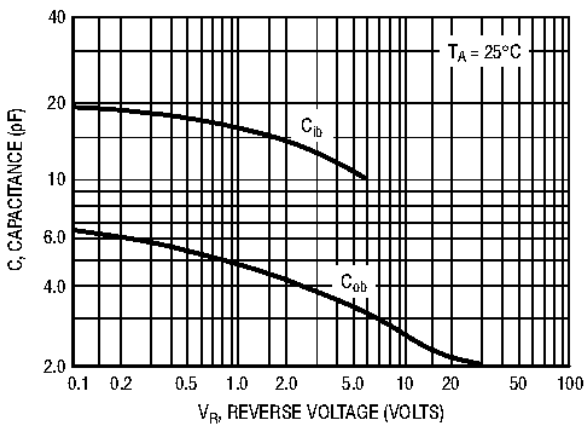


Figure 11. Capacitance

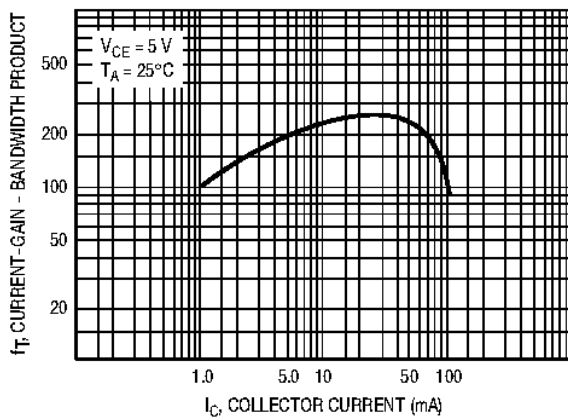
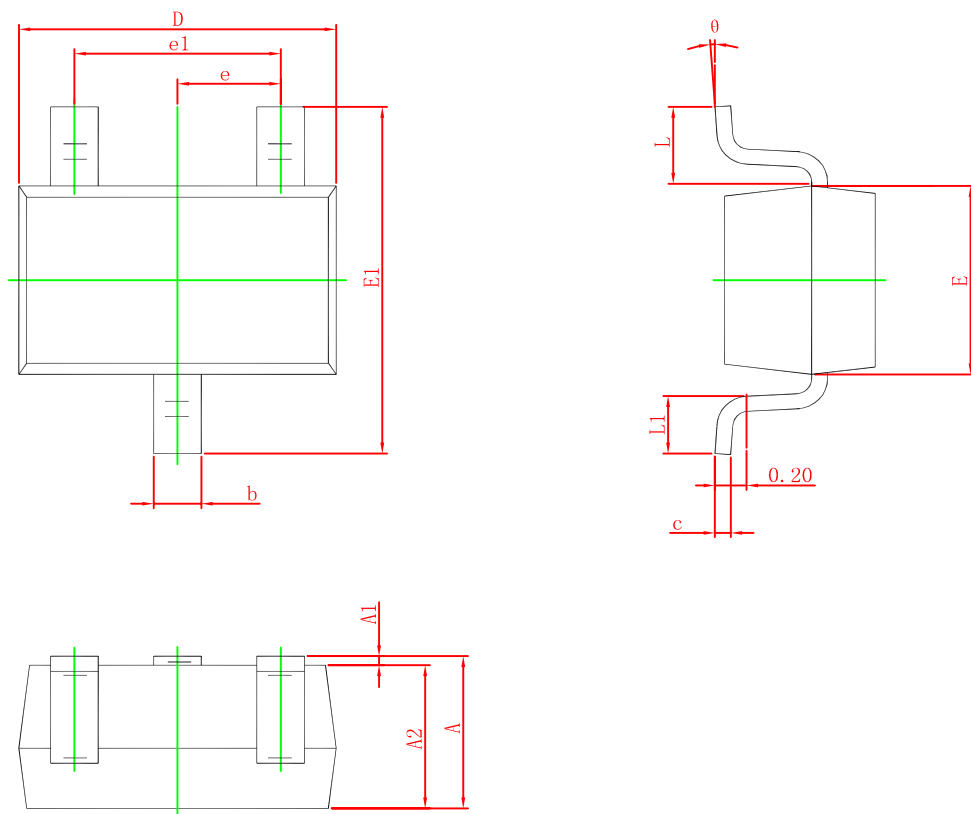


Figure 12. Current-Gain - Bandwidth Product

SOT-323 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP.		0.026 TYP.	
e1	1.200	1.400	0.047	0.055
L	0.525 REF.		0.021 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°