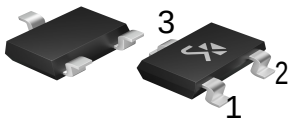
BC846AW THRU BC850CW

NPN Silicon Epitaxial Planar Transistor

SOT-323



1. BASE
2. EMITTER
3. COLLECTOR

Features

- For general purpose and switching applications

MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

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

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

ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage **BC846W** **BC847W** **BC848W** **BC849W** **BC850W**	$V_{(BR)CBO}$	I_C= 10uA，I_E=0	80 50 30 30 50			V
Collector-emitter breakdown voltage **BC846W** **BC847W** **BC848W** **BC849W** **BC850W**	$V_{(BR)CEO}$	I_C= 10mA, I_B=0	65 45 30 30 45			V
Emitter-base breakdown voltage **BC846W** **BC847W** **BC848W** **BC849W** **BC850W**	$V_{(BR)EBO}$	I_E=1uA，I_C=0	6 6 5 5 5			V
Collector cut-off current	I_{CBO}	V_{CB}=30V，I_E=0			15	nA
Emitter cut-off current	I_{EBO}	V_{EB}= 5V，I_C=0			100	nA
DC current gain **BC846AW~BC850AW** **BC846BW~BC850BW** **BC846CW~BC850CW**	h_{FE}	V_{CE}= 5 V, I_C= 2 mA	110 200 420		220 450 800	
Collector-emitter saturation voltage	V_{CE}(sat)	IC= 10 mA, IB= 0.5 mA IC= 100 mA, IB= 5 mA			0.25 0.6	V
Base Emitter Voltage	V_{BF}	VCE= 5 V, IC= 2 mA VCE= 5 V, IC= 10 mA	0.58 --		0.7 0.77	V
Transition frequency	f_T	V_{CE}=5V, Ic= 10mA f=100MHZ	100			MHz
Collector output capacitance	C_{ob}	V_{CE}=10V, f= 1MHZ			4.5	pF

Typical Characteristics

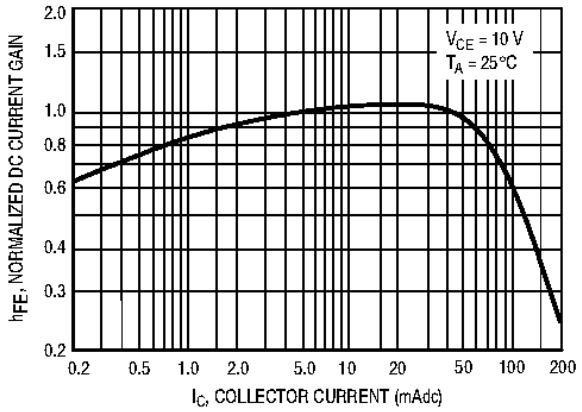


Figure 1. Normalized DC Current Gain

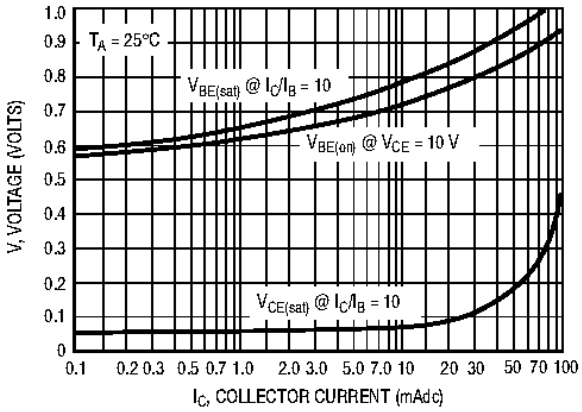


Figure 2. "Saturation" and "On" Voltages

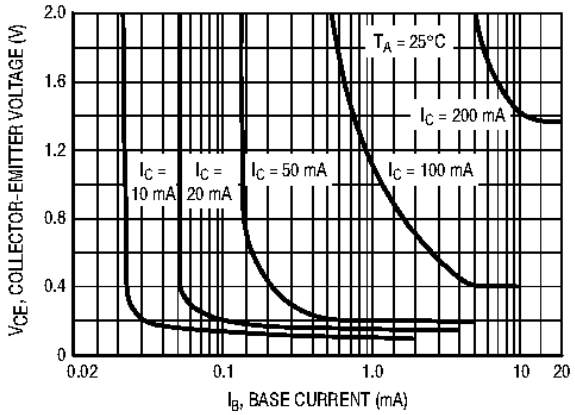


Figure 3. Collector Saturation Region

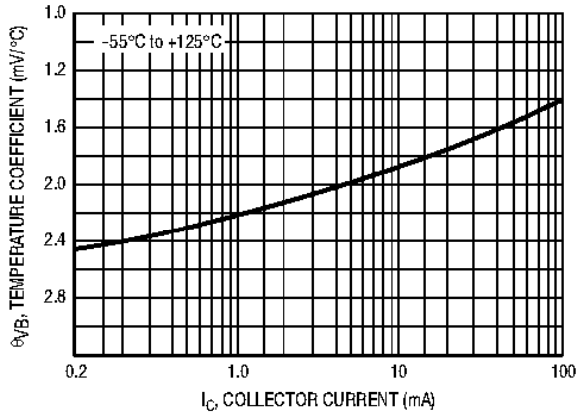


Figure 4. Base−Emitter Temperature Coefficient

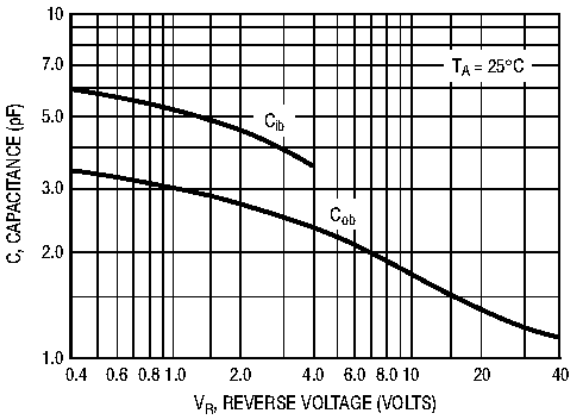


Figure 5. Capacitances

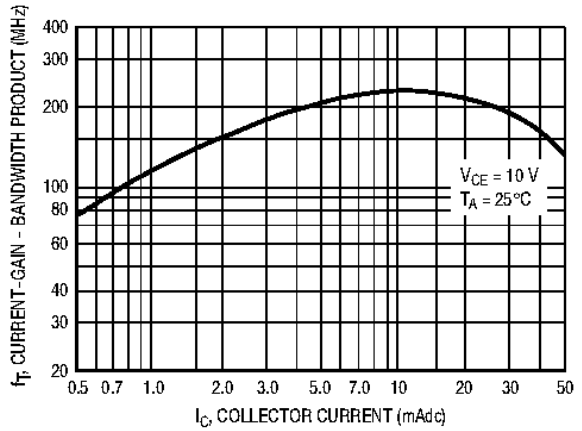


Figure 6. Current−Gain − Bandwidth Product

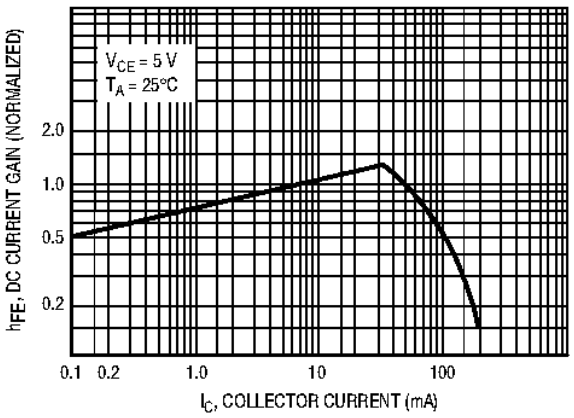


Figure 7. DC Current Gain

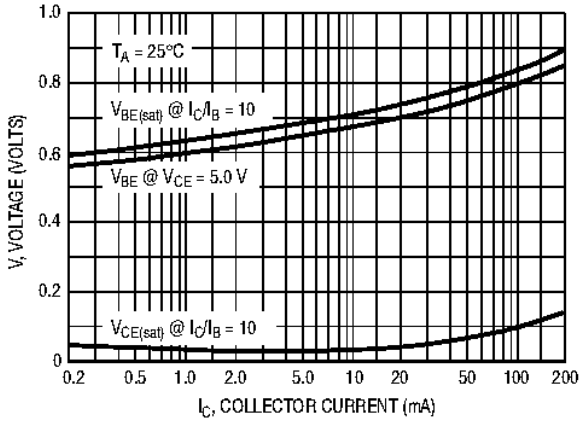


Figure 8. "On" Voltage

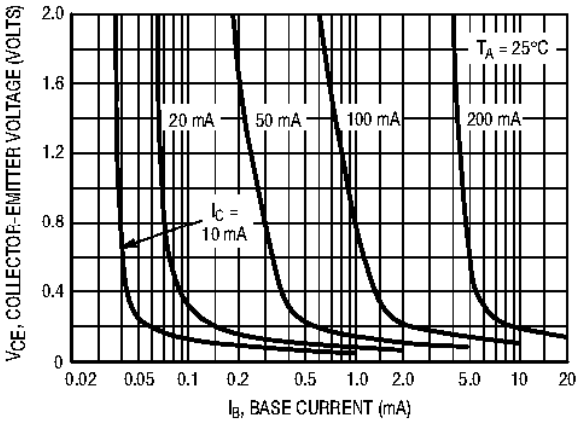


Figure 9. Collector Saturation Region

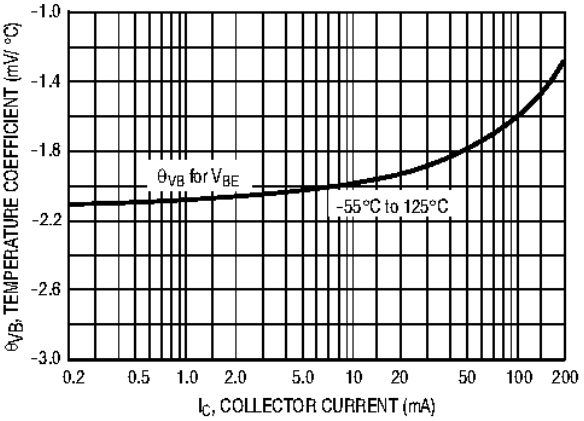


Figure 10. Base−Emitter Temperature Coefficient

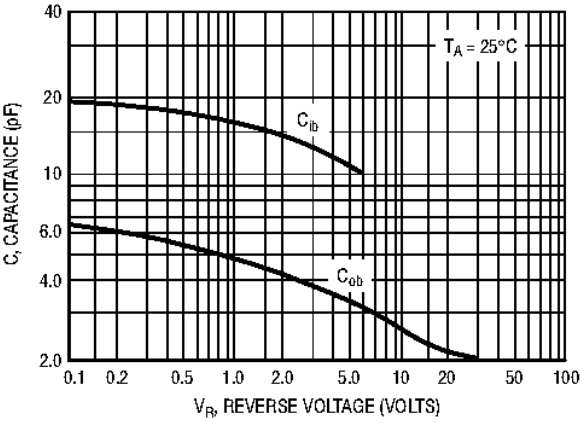


Figure 11. Capacitance

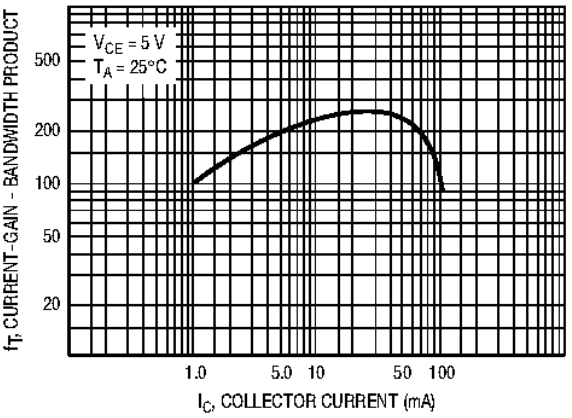
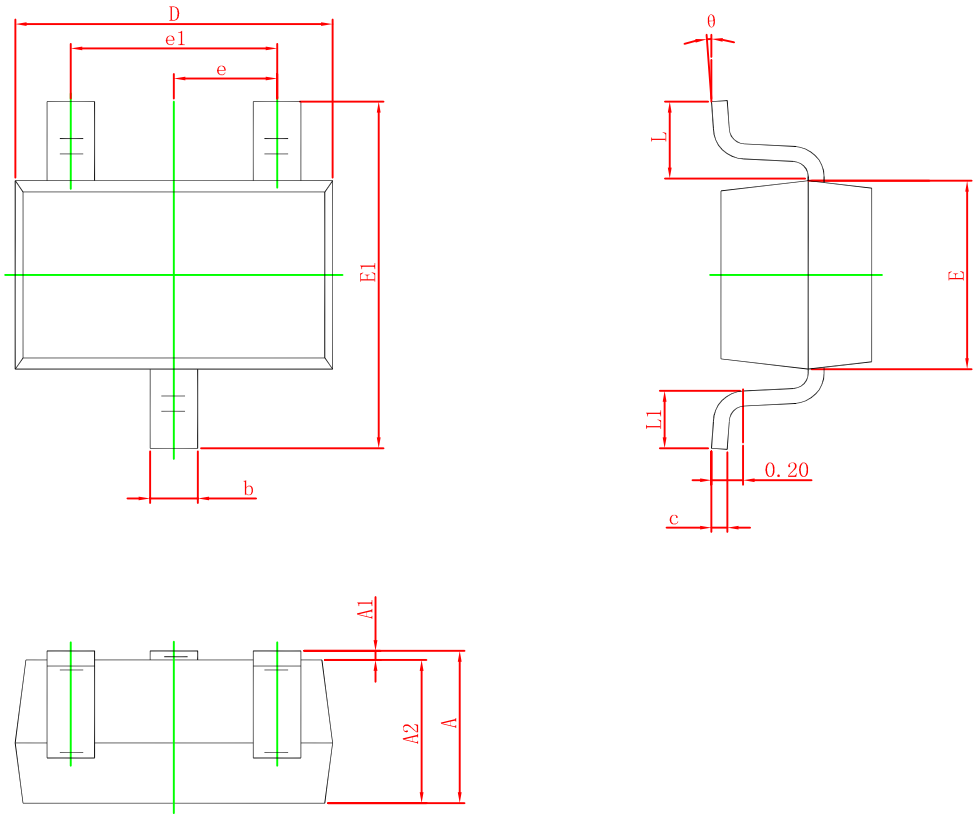


Figure 12. Current−Gain − Bandwidth Product

SOT-323 PACKAGE OUTLINE



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°