

RoHS Compliant Product

A suffix of "-C" specifies halogen & lead-free

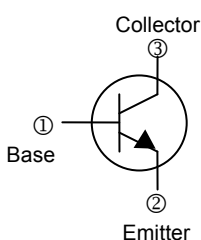
FEATURES

- Ideally suited for automatic insertion
- For Switching and AF Amplifier Applications

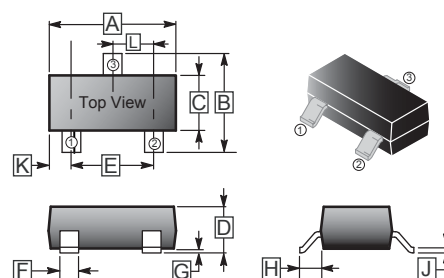
① Base
② Emitter
③ Collector

MARKING

BC846AW=1A;BC846BW=1B;
BC847AW=1E;BC847BW=1F;BC847CW=1G;
BC848AW=1J;BC848BW=1K;BC848CW=1L



SOT-323



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.80	2.20	G	0.100 REF.	
B	1.80	2.45	H	0.525 REF.	
C	1.15	1.35	J	0.08	0.25
D	0.80	1.10	K	-	-
E	1.20	1.40	L	0.650 TYP.	
F	0.20	0.40			

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector to Base Voltage	V_{CBO}	BC846W	80
		BC847W	50
		BC848W	30
Collector to Emitter Voltage	V_{CEO}	BC846W	65
		BC847W	45
		BC848W	30
Emitter to Base Voltage	V_{EBO}	BC846W	6
		BC847W	6
		BC848W	5
Collector Current - Continuous	I_C	0.1	A
Collector Power Dissipation	P_C	150	mW
Junction, Storage Temperature	T_J, T_{STG}	150, -55 ~ 150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

PARAMETER		SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector to Base Breakdown Voltage	BC846W	V _{CBO}	80	-	-	V	I _C = 10 µA, I _E = 0
	BC847W		50				
	BC848W		30				
Collector to Emitter Breakdown Voltage	BC846W	V _{CEO}	65	-	-	V	I _C = 10 mA, I _B = 0
	BC847W		45				
	BC848W		30				
Emitter to Base Breakdown Voltage	BC846W	V _{EBO}	6	-	-	V	I _E = 1 µA, I _C = 0
	BC847W		6				
	BC848W		5				
Collector Cutoff Current		I _{CBO}	-	-	15	nA	V _{CB} = 30 V
Collector to Emitter Saturation Voltage		V _{CE(sat)}	-	-	0.25	V	I _C = 10mA, I _B = 0.5 mA
			-	-	0.6		I _C = 100mA, I _B = 5 mA
Base to Emitter Saturation Voltage		V _{BE(sat)}	-	0.7	-	V	I _C = 10mA, I _B = 0.5 mA
			-	0.9	-		I _C = 100mA, I _B = 5 mA
Base to Emitter Voltage		V _{BE(on)}	580	660	700	mV	V _{CE} = 5 V, I _C = 2 mA
			-	-	770		V _{CE} = 5 V, I _C = 10 mA
DC Current Gain	BC846AW,BC847AW,BC848AW	h _{FE(1)}	-	90	-		V _{CE} = 5 V, I _C = 10 µA
	BC846BW,BC847BW,BC848BW			150			
	BC847CW,BC848CW			270			
	BC846AW,BC847AW,BC848AW	h _{FE(2)}	110	220		V _{CE} = 5 V, I _C = 2 mA	
	BC846BW,BC847BW,BC848BW		200	450			
	BC847CW,BC848CW		420	800			
Transition Frequency		f _T	100	-	-	MHz	V _{CE} = 5 V, I _C = 10 mA, f = 100MHz
Collector Output Capacitance		C _{Ob}	-	-	4.5	pF	V _{CB} = 10 V, f=1MHz
Noise Figure	BC846AW,BC847AW,BC848AW	NF	-	-	-	dB	V _{CE} = 5 V, I _C = 0.2 mA, f= 1KHz, R _S = 2 KΩ, BW= 200Hz
	BC846BW,BC847BW,BC848BW				10		
	BC847CW,BC848CW				4		

CHARACTERISTIC CURVES

BC846 Series

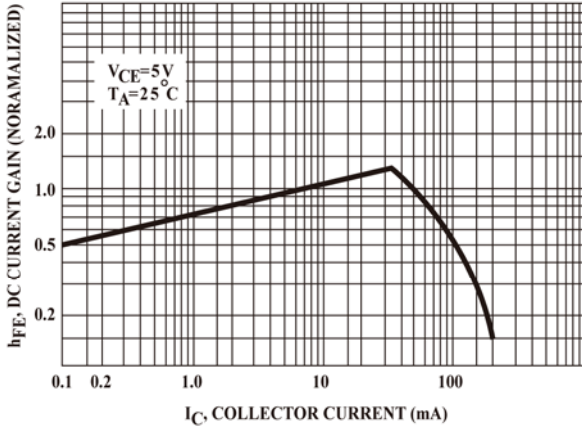


Figure 7. DC Current Gain

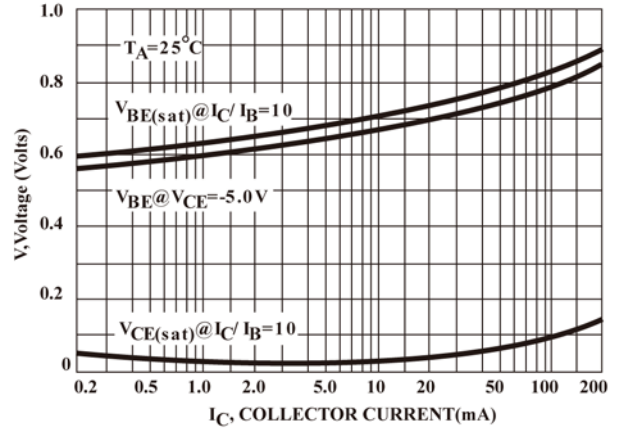


Figure 8. "ON" Voltage

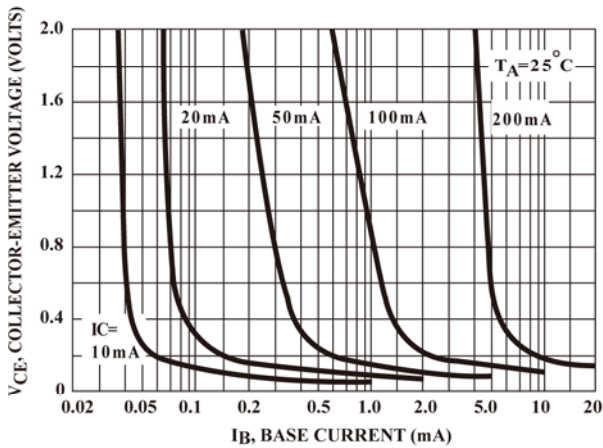


Figure 9. Collector Saturation Region

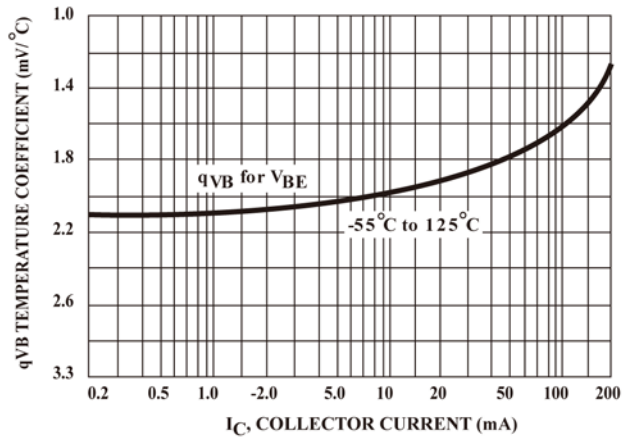


Figure 10. Base-Emitter Temperature Coefficient

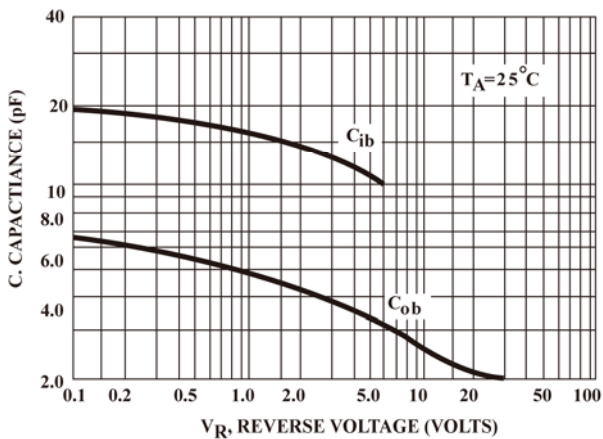


Figure 11. Capacitance

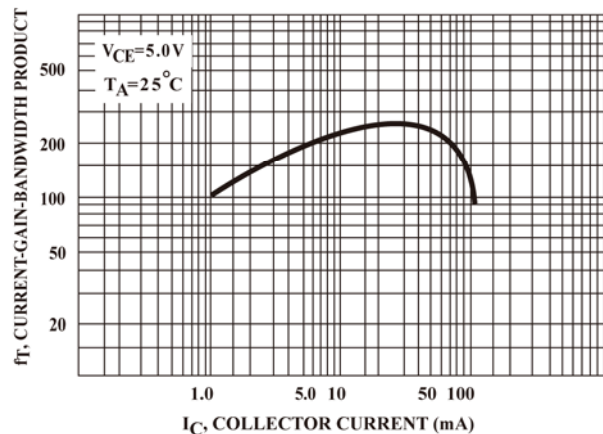


Figure 12. Current-Gain-Bandwidth Product

CHARACTERISTIC CURVES

BC847 & BC848 Series

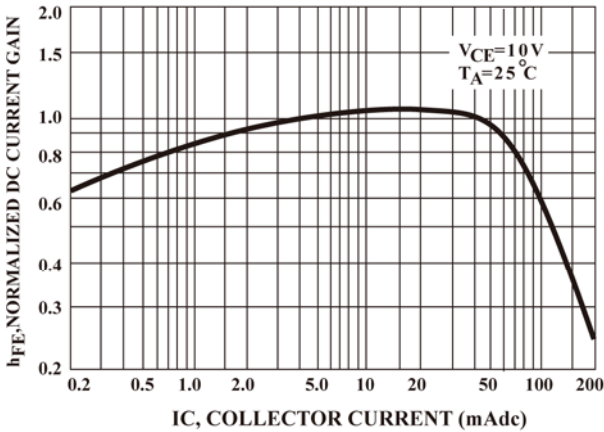


Figure 1. Normalized DC Current Gain

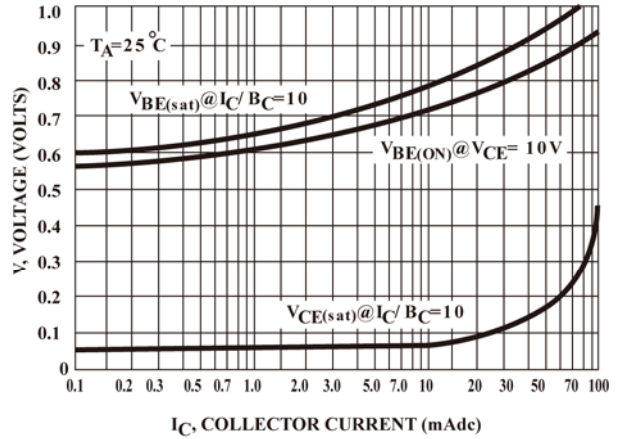


Figure 2. "Saturation" And "On" Voltage

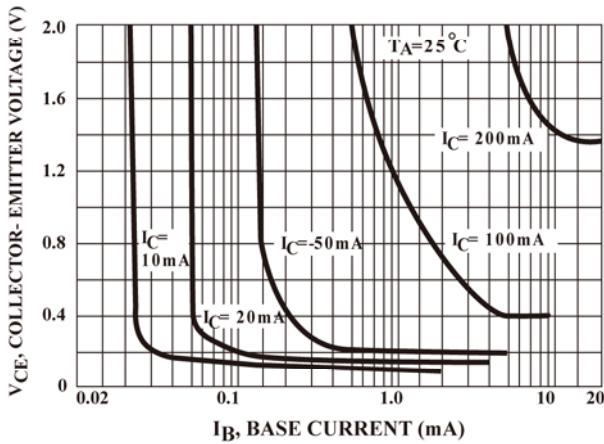


Figure 3. Collector Saturation Region

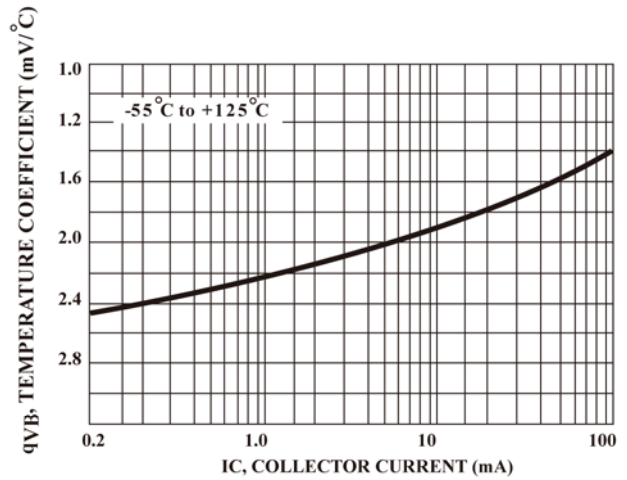


Figure 4. Base-Emitter Temperature Coefficient

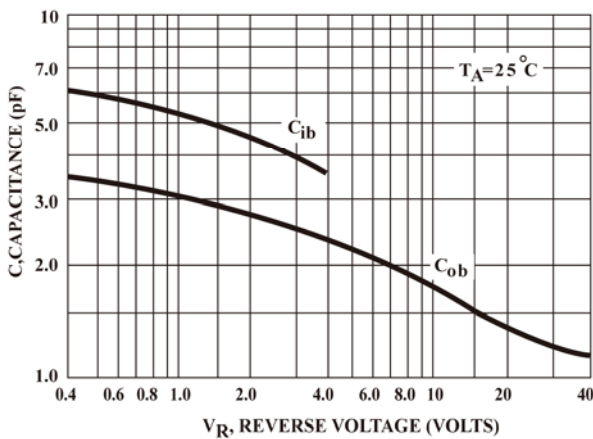


Figure 5. Capacitances

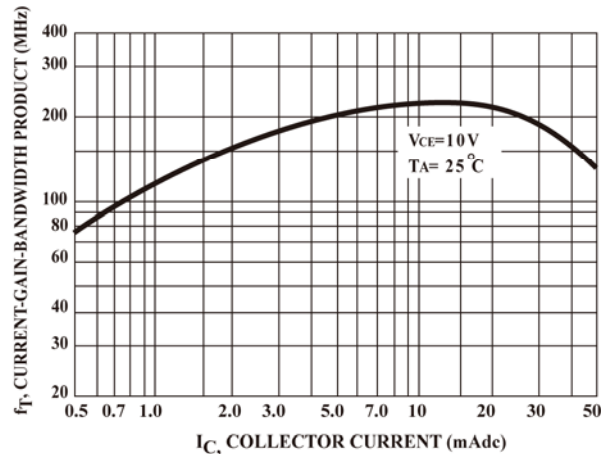


Figure 6. Current-Gain- Bandwidth Product