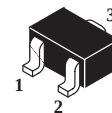
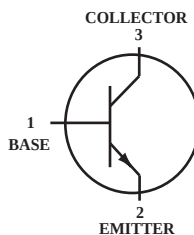


General Purpose Transistor

NPN Silicon

 Lead(Pb)-Free



SOT-323(SC-70)

Maximum Ratings (T_A=25°C Unless otherwise noted)

Rating		Symbol	Value	Unit
Collector-Emitter Voltage	BC846	V _{CEO}	65	V
	BC847		45	
	BC848		30	
Collector-Base Voltage	BC846	V _{CBO}	80	V
	BC847		50	
	BC848		30	
Emitter-Base Voltage	BC846	V _{EBO}	6.0	V
	BC847		6.0	
	BC848		5.0	
Collector Current-Continuous		I _C	100	mA

Thermal Characteristics

Characteristics	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (Note.1) T _A =25°C Derate above 25°C	P _D	150 2.4	mW mW/°C
Thermal Resistance, Junction to Ambient (Note.1)	R _{θJA}	833	°C/W
Junction and Temperature Range	T _J	+150	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

Device Marking

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

1. FR-5=1.0 x 0.75 x 0.062 in.

Electrical Characteristics (T_A=25°C Unless Otherwise noted)

Characteristics	Symbol	Min	Typ	Max	Unit
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Off Characteristics

Collector-Emitter Breakdown Voltage (I _C =10mA)	BC846A Series	V _{(BR)CEO}	65	-	-	V
	BC847A Series		45	-	-	
	BC848A Series		30	-	-	
Collector-Emitter Breakdown Voltage (I _C =10μA, V _{EB} =0)	BC846A Series	V _{(BR)CES}	80	-	-	V
	BC847A Series		50	-	-	
	BC848A Series		30	-	-	
Collector-Base Breakdown Voltage (I _C =10μA)	BC846A Series	V _{(BR)CBO}	80	-	-	V
	BC847A Series		50	-	-	
	BC848A Series		30	-	-	
Emitter-Base Breakdown Voltage (I _E =1.0μA)	BC846A Series	V _{(BR)EBO}	6.0	-	-	V
	BC847A Series		6.0	-	-	
	BC848A Series		5.0	-	-	
Collector Cutoff Current (V _{CB} =30V) (V _{CB} =30V, T _A =150°C)		I _{CBO}	-	-	15	nA
			-	-	5.0	mA

On Characteristics

DC Current Gain (I _C =10uA, V _{CE} =5.0V) (I _C =2.0mA, V _{CE} =5.0V)	BC846A, BC847A, BC848A	h _{FE}	-	90	-	-
	BC846B, BC847B, BC848B		-	150	-	
	BC847C, BC848C		-	270	-	
	BC846A, BC847A, BC848A		110	180	220	
	BC846B, BC847B, BC848B		200	290	450	
	BC847C, BC848C,		420	520	800	
Collector-Emitter Saturation Voltage (I _C =10mA, I _B =0.5mA) (I _C =100mA, I _B =5.0mA)		V _{CE(sat)}	-	-	0.25	V
			-	-	0.6	
Base-Emitter Saturation Voltage (I _C =10mA, I _B =0.5mA) (I _C =100mA, I _B =5.0mA)		V _{BE(sat)}	-	-0.7	-	V
			-	-0.9	-	
Base-Emitter On Voltage (I _C =2.0mA, V _{CE} =5.0V) (I _C =10mA, V _{CE} =5.0V)		V _{BE(on)}	580	660	700	V
			-	-	770	

Small-signal Characteristics

Current-Gain-Bandwidth Product (I _C =10mA, V _{CE} =5.0V, f=100MHz)	f _T	100	-	-	MHz
Output Capacitance (V _{CB} =10V, f=1.0MHz)	C _{obo}	-	-	4.5	pF
Noise Figure (I _C =0.2mA, V _{CE} =5.0V, R _s =2.0kΩ, f=1.0kHz, BW=200Hz) BC846A,B BC847A,B BC848A,B BC847C, BC848C	NF	-	-	10 4.0	dB

BC847 & BC848 Series

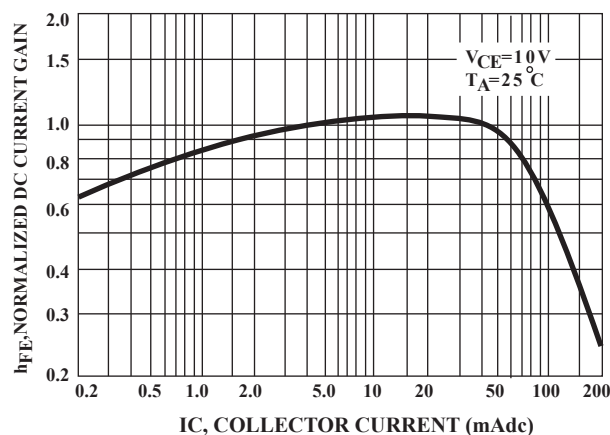


Figure1.Normalized DC Current Gain

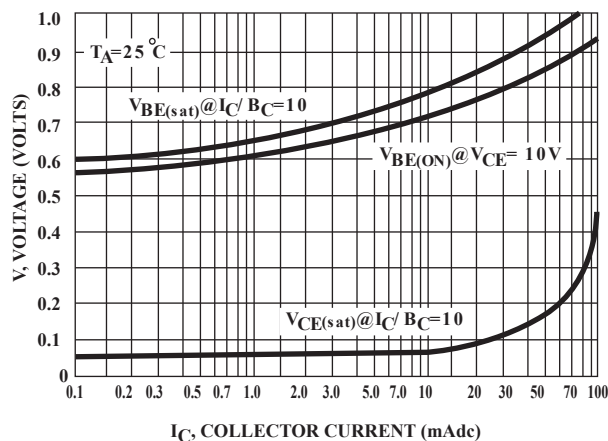


Figure2. "Saturation" And "On" Voltage

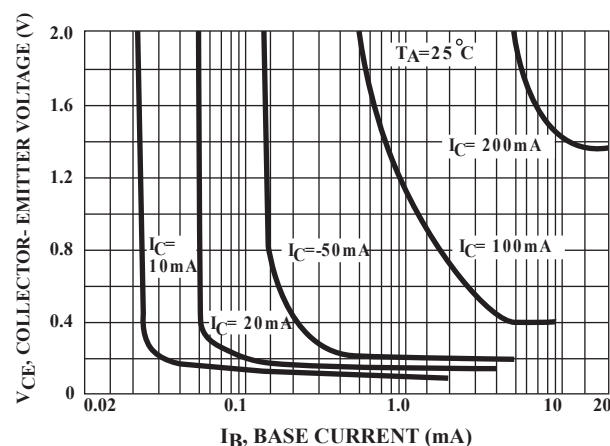


Figure 3. Collector Saturation Region

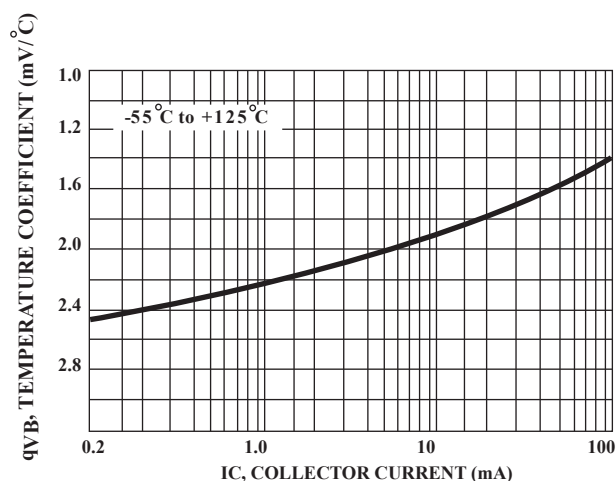


Figure 4. Base-Emitter Temperature Coefficient

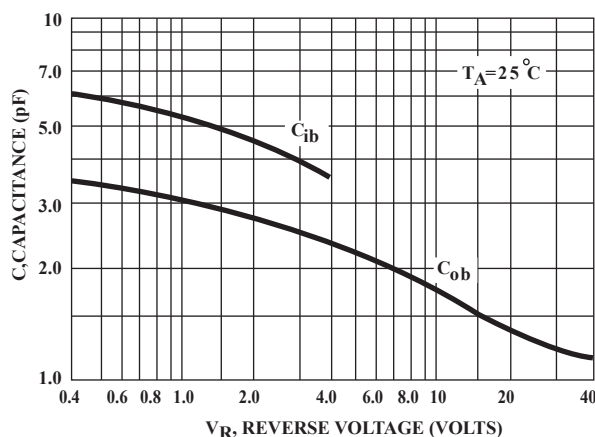


Figure 5. Capacitances

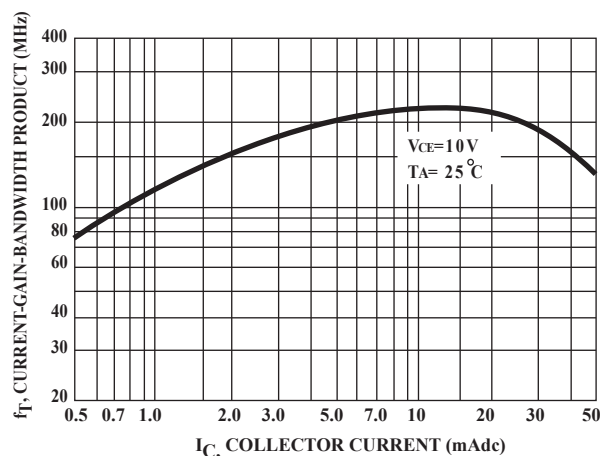


Figure 6. Current-Gain- Bandwidth Product

BC846 Series

