



SOT-23 Plastic-Encapsulate Transistors

BC846A,B TRANSISTOR (NPN)
BC847A, B, C
BC848A, B, C

SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

FEATURES

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

MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V _{CB0}	Collector-Base Voltage		V
	BC846	80	
	BC847	50	
V _{CEO}	Collector-Emitter Voltage		V
	BC846	65	
	BC847	45	
	BC848	30	
V _{EBO}	Emitter-Base Voltage	6	V
I _c	Collector Current –Continuous	0.1	A
P _{C*}	Collector Power Dissipation	200	mW
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-65-150	°C

DEVICE MARKING

BC846A=1A; BC846B=1B;
 BC847A=1E; BC847B=1F; BC847C=1G;
 BC848A=1J; BC848B=1K; BC848C=1L

ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT	
Collector-base breakdown voltage	BC846	V_{CBO}	$I_C = 10\mu A, I_E = 0$	80			V
	BC847			50			
	BC848			30			
Collector-emitter breakdown voltage	BC846	V_{CEO}	$I_C = 10mA, I_B = 0$	65			V
	BC847			45			
	BC848			30			
Emitter-base breakdown voltage		V_{EBO}	$I_E = 10\mu A, I_C = 0$	6			V
Collector cut-off current	BC846	I_{CBO}	$V_{CB} = 70V, I_E = 0$			0.1	μA
	BC847			$V_{CB} = 50V, I_E = 0$			
	BC848			$V_{CB} = 30V, I_E = 0$			
Collector cut-off current	BC846	I_{CEO}	$V_{CE} = 60V, I_B = 0$			0.1	μA
	BC847			$V_{CE} = 45V, I_B = 0$			
	BC848			$V_{CE} = 30V, I_B = 0$			
Emitter cut-off current		I_{EBO}	$V_{EB} = 5V, I_C = 0$			0.1	μA
DC current gain	BC846A,847A,848A	h_{FE}	$V_{CE} = 5V, I_C = 2mA$	110		220	
	BC846B,847B,848B			200		450	
	BC847C,BC848C			420		800	
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = 100mA, I_B = 5mA$			0.5	V
Base-emitter saturation voltage		$V_{BE(sat)}$	$I_C = 100mA, I_B = 5mA$			1.1	V
Transition frequency		f_T	$V_{CE} = 5V, I_C = 10mA$ $f = 100MHz$	100			MHz
Collector output capacitance		C_{ob}	$V_{CB} = 10V, f = 1MHz$			4.5	pF

Typical Characteristics BC846A,B;BC847A, B, C;BC848A, B, C

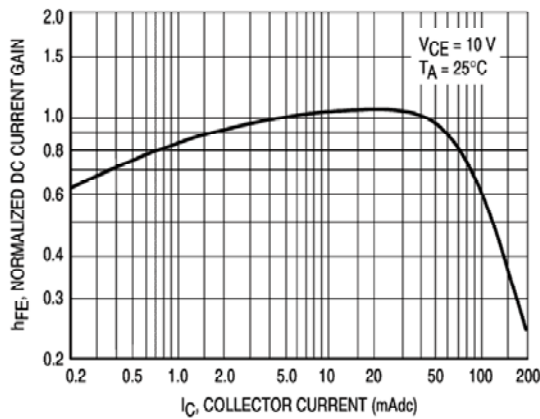


Figure 1. Normalized DC Current Gain

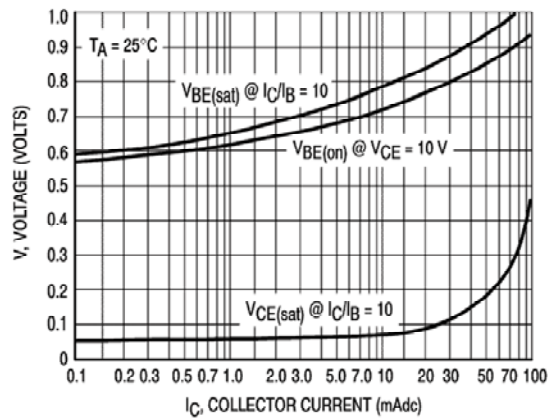


Figure 2. "Saturation" and "On" Voltages

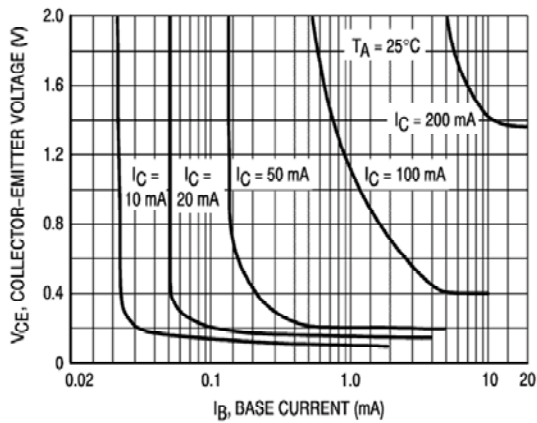


Figure 3. Collector Saturation Region

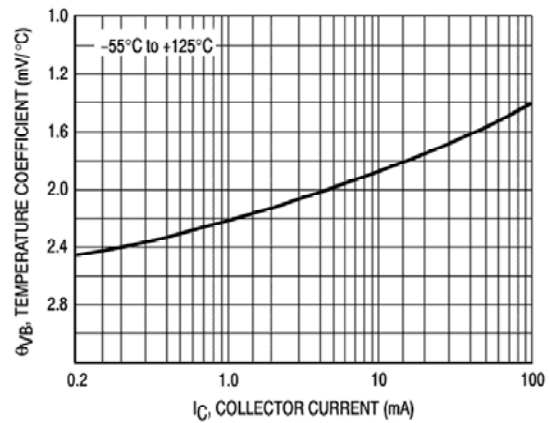


Figure 4. Base-Emitter Temperature Coefficient

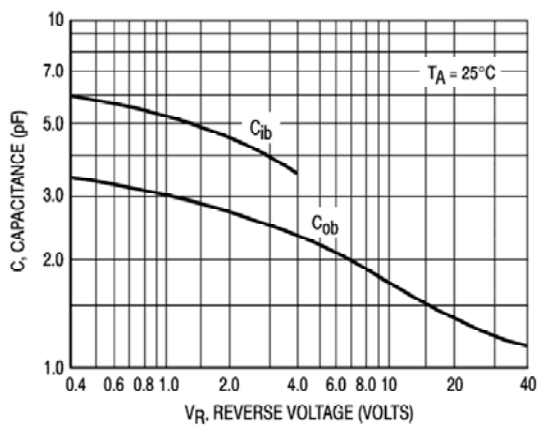


Figure 5. Capacitances

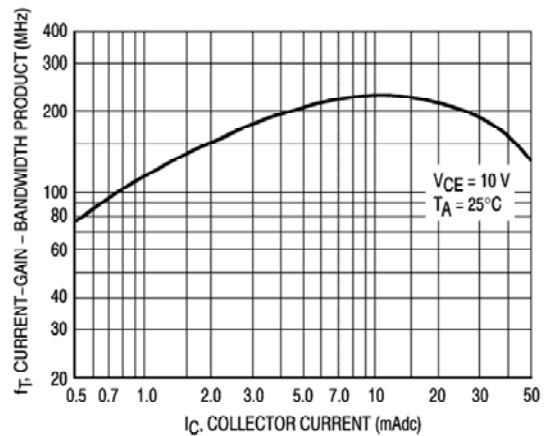


Figure 6. Current-Gain - Bandwidth Product

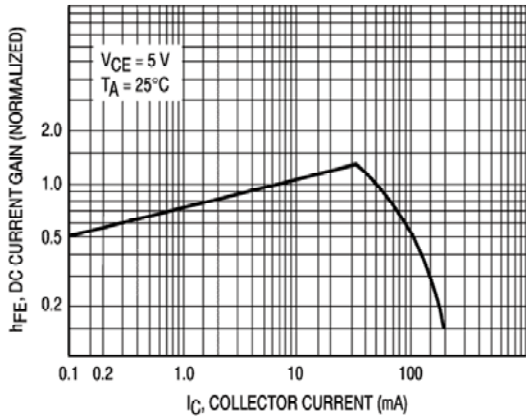


Figure 7. DC Current Gain

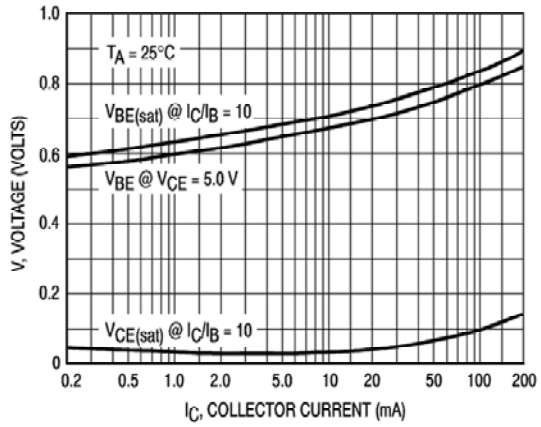


Figure 8. "On" Voltage

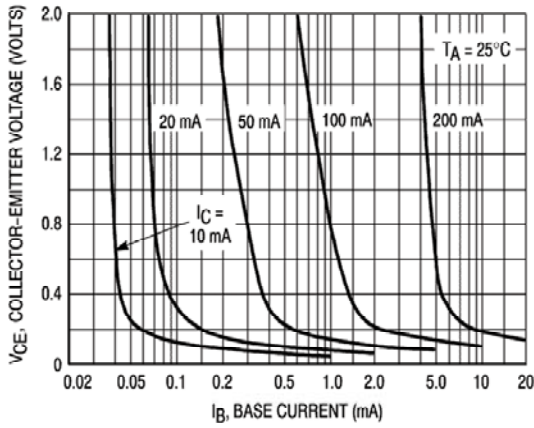


Figure 9. Collector Saturation Region

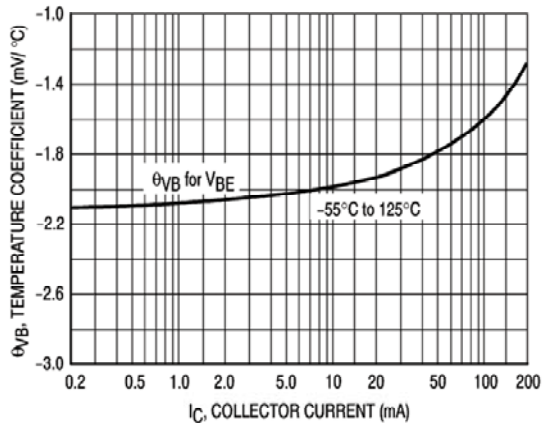


Figure 10. Base-Emitter Temperature Coefficient

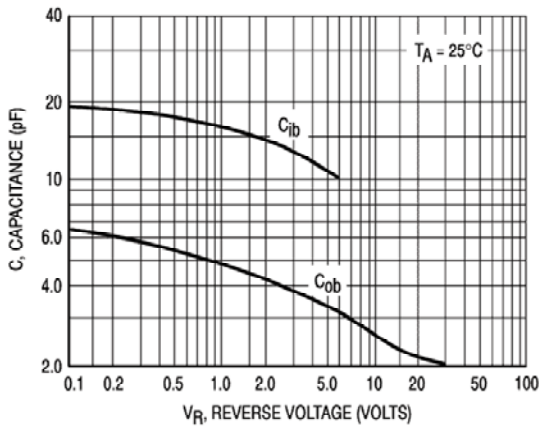


Figure 11. Capacitance

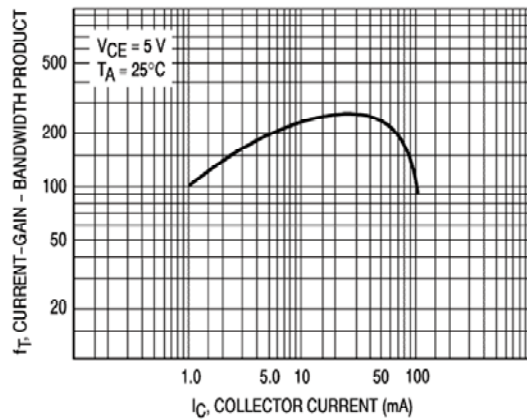


Figure 12. Current-Gain - Bandwidth Product