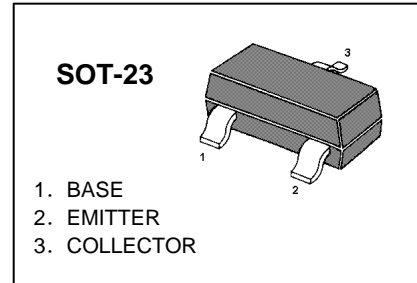


## TRANSISTOR (NPN)

### FEATURE

Ideally suited for automatic insertion  
For Switching and AF Amplifier Applications



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

Symbol	Parameter		Value	Units
$V_{\text{CBO}}$	Collector-Base Voltage	BC846	80	V
		BC847	50	
		BC848	30	
$V_{\text{CEO}}$	Collector-Emitter Voltage	BC846	65	V
		BC847	45	
		BC848	30	
$V_{\text{EBO}}$	Emitter-Base Voltage		6	V
$I_{\text{C}}$	Collector Current –Continuous		0.1	A
$P_{\text{C}}$	Collector Power Dissipation		200	mW
$T_{\text{J}}$	Junction Temperature		150	$^{\circ}\text{C}$
$T_{\text{stg}}$	Storage Temperature		-65-150	$^{\circ}\text{C}$

### 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	$I_C = 10\mu A, I_E = 0$	80			V
	BC847		50			
	BC848		30			
Collector-emitter breakdown voltage	BC846	$I_C = 10mA, I_B = 0$	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	$V_{CB} = 70V, I_E = 0$				$\mu A$
	BC847		$V_{CB} = 50V, I_E = 0$		0.1	
	BC848		$V_{CB} = 30V, I_E = 0$			
Collector cut-off current	BC846	$V_{CE} = 60V, I_B = 0$				$\mu A$
	BC847		$V_{CE} = 45V, I_B = 0$		0.1	
	BC848		$V_{CE} = 30V, I_B = 0$			
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 5V, I_C = 0$			0.1	$\mu A$
DC current gain	BC846A,847A,848A BC846B,847B,848B BC847C,BC848C	$V_{CE} = 5V, I_C = 2mA$	110		220	
			200		450	
			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

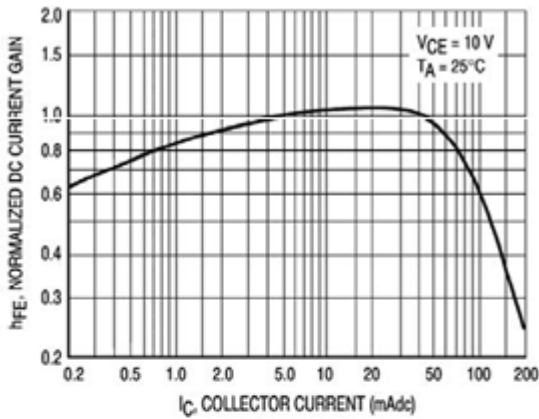


Figure 1. Normalized DC Current Gain

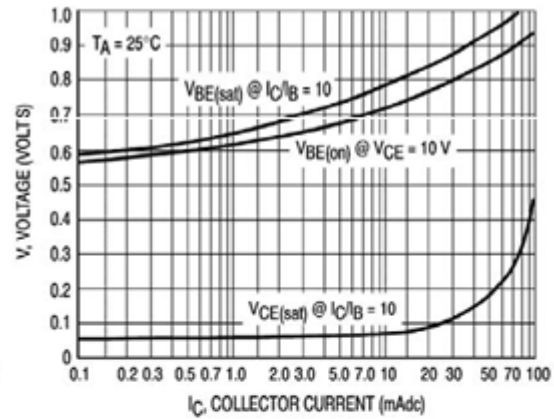


Figure 2. "Saturation" and "On" Voltages

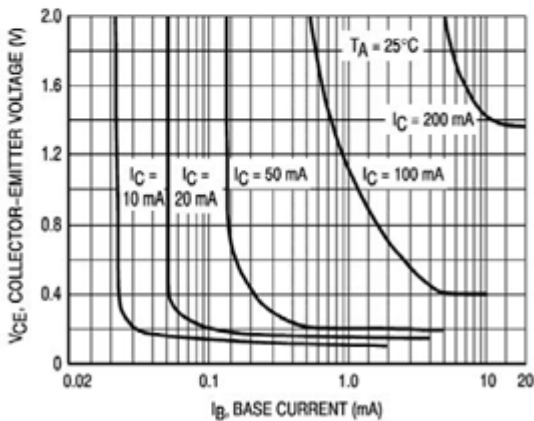


Figure 3. Collector Saturation Region

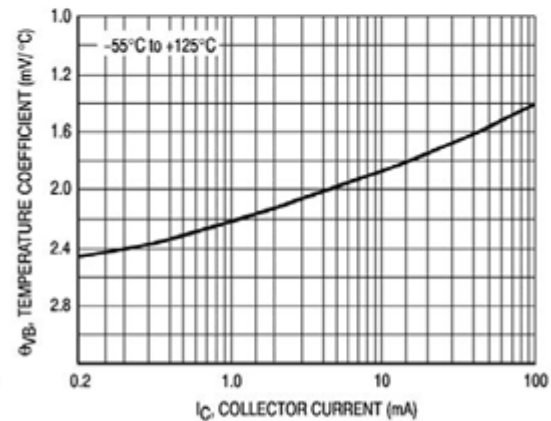


Figure 4. Base-Emitter Temperature Coefficient

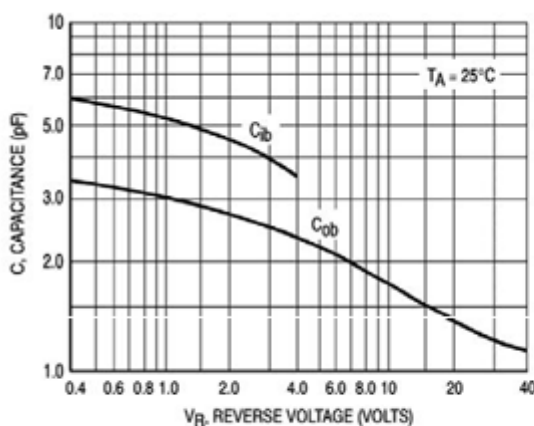


Figure 5. Capacitances

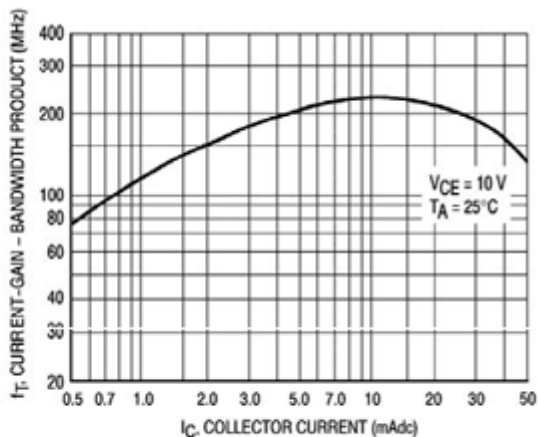


Figure 6. Current-Gain - Bandwidth Product

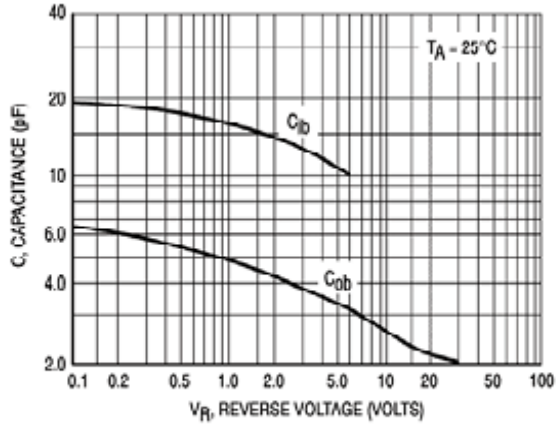


Figure 11. Capacitance

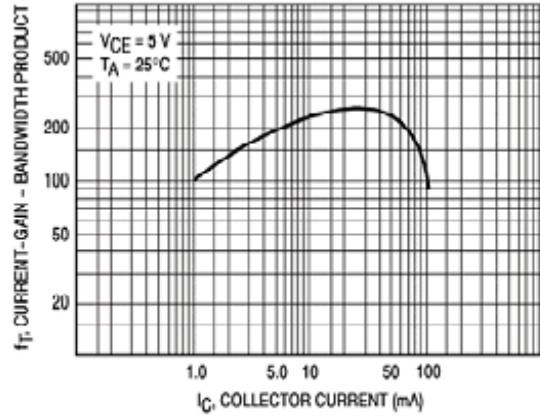


Figure 12. Current-Gain - Bandwidth Product