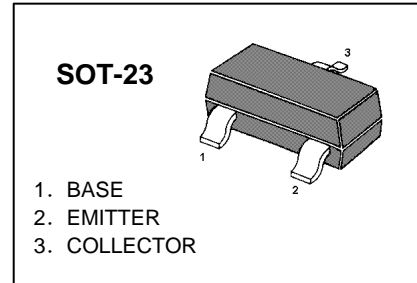


TRANSISTOR (NPN)

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_{CBO}	Collector-Base Voltage	BC846	80	V
		BC847	50	
		BC848	30	
V_{CEO}	Collector-Emitter Voltage	BC846	65	V
		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	$^{\circ}\text{C}$
T_{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	$V_{CB} = 70V, I_E = 0$				μA
	BC847		$V_{CB} = 50V, I_E = 0$		0.1	
	BC848		$V_{CB} = 30V, I_E = 0$			
Collector cut-off current	BC846	$V_{CE} = 60V, I_B = 0$				μA
	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	μA
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

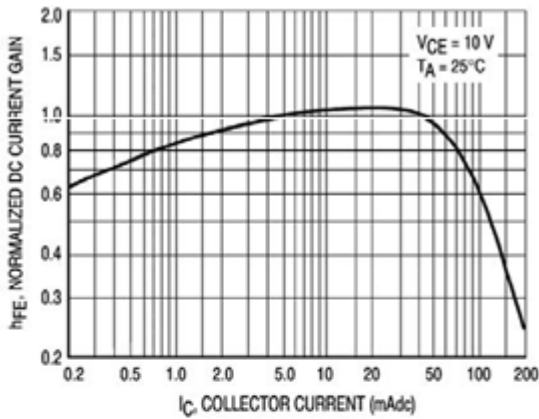


Figure 1. Normalized DC Current Gain

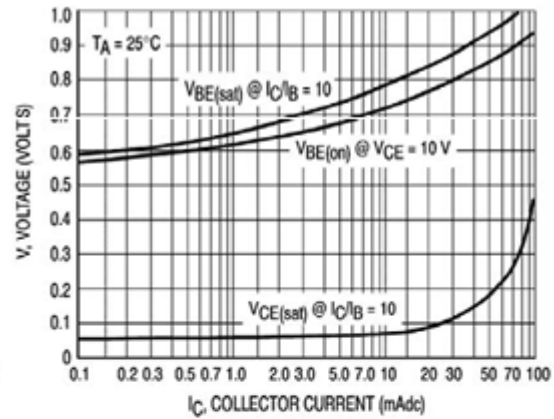


Figure 2. "Saturation" and "On" Voltages

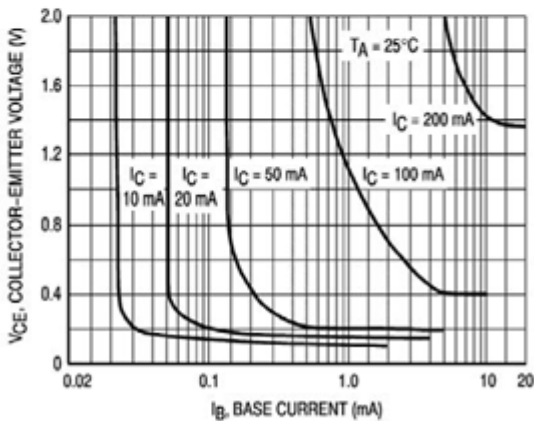


Figure 3. Collector Saturation Region

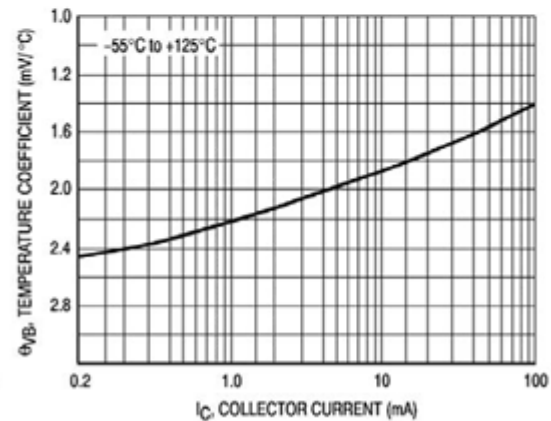


Figure 4. Base-Emitter Temperature Coefficient

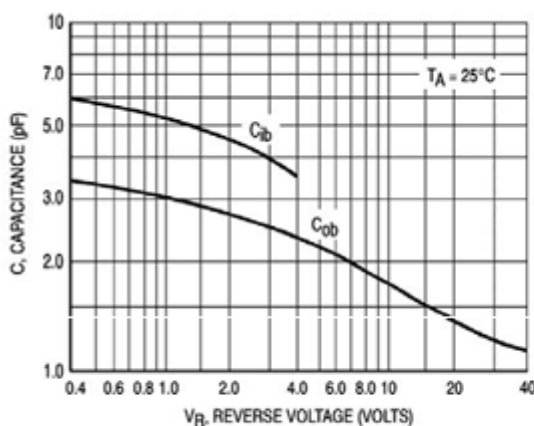


Figure 5. Capacitances

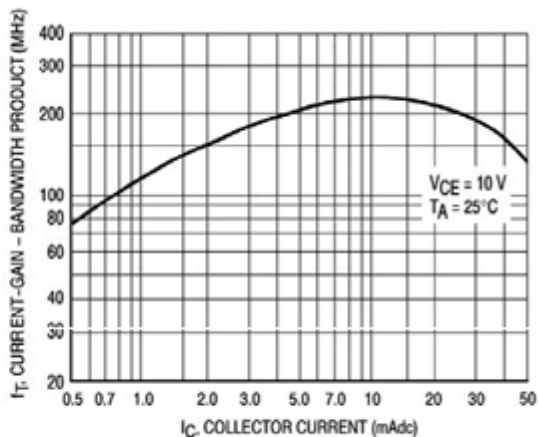


Figure 6. Current-Gain - Bandwidth Product

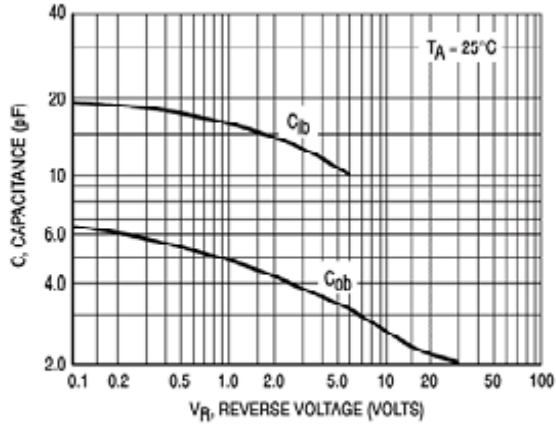


Figure 11. Capacitance

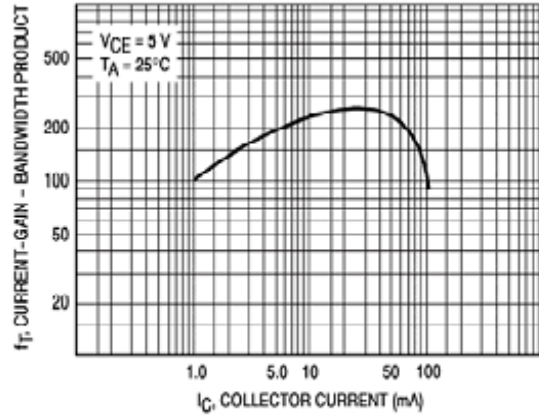


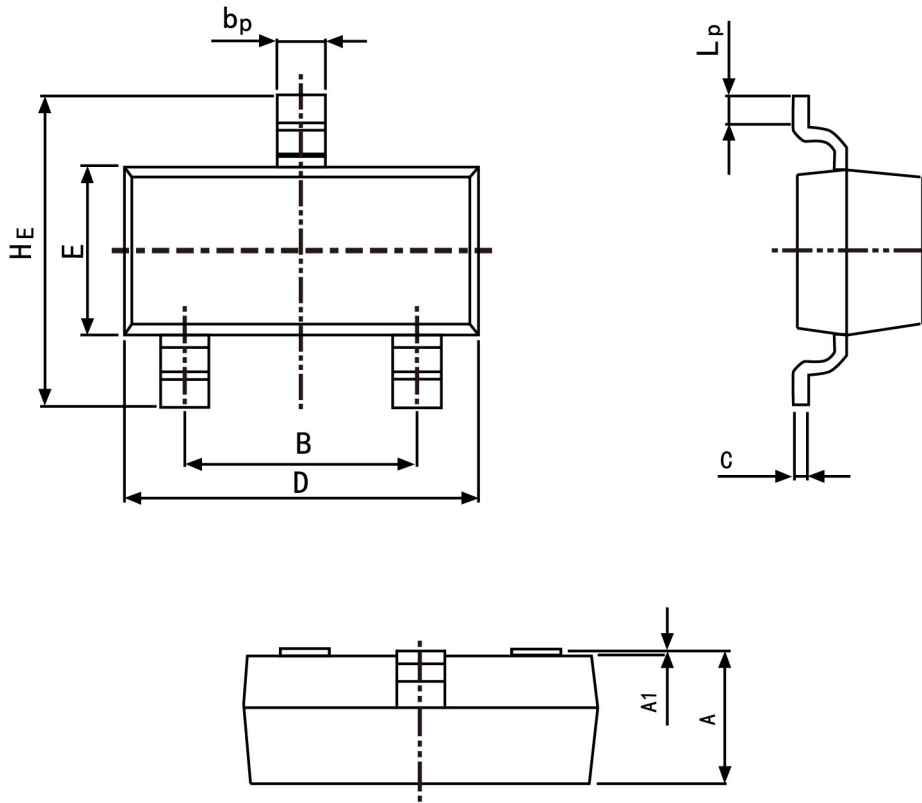
Figure 12. Current-Gain - Bandwidth Product



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



Symbol	Dimension in Millimeters	
	Min	Max
A	0.95	1.40
B	1.78	2.04
b_p	0.35	0.50
C	0.08	0.19
D	2.70	3.10
E	1.20	1.65
HE	2.20	3.00
A1	0.100	0.013
Lp	0.20	0.50