



SOT-23 Plastic-Encapsulate Transistors

BC846ALT1,BLT1 TRANSISTOR (NPN)**BC847ALT1, BLT1 CLT1****BC848ALT1, BLT1 CLT1****FEATURES**

Power dissipation

 $P_{CM} : 0.15 \text{ W (Tamb=25)}$

Collector current

 $I_{CM} : 0.1 \text{ A}$

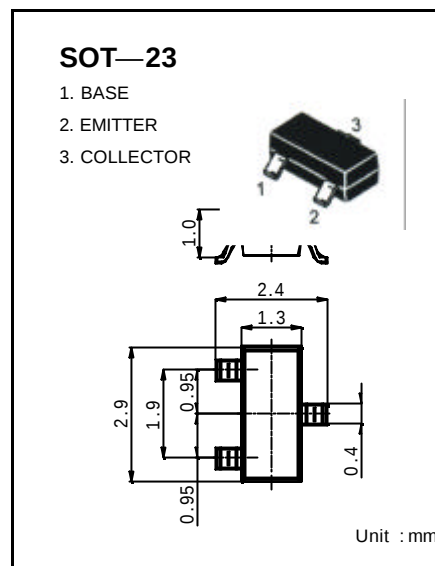
Collector-base voltage

 $V_{CBO}:$ BC846 80 V

BC847 50 V

BC848 30 V

Operating and storage junction temperature range

 $T_J, T_{stg}: -55 \text{ to } +150$ **ELECTRICAL CHARACTERISTICS (Tamb=25 unless otherwise specified)**

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

DEVICE MARKINGBC846AWT1=1A; BC846BWT1=1B; BC847AWT1=1E; BC847BWT1=1F; BC847CWT1=1G; BC848AWT1=1J; BC848BWT1=1K
BC848CWT1=1L

Typical Characteristics

BC846A/BLT1, BC847A/BLT1, BC848A/BLT1

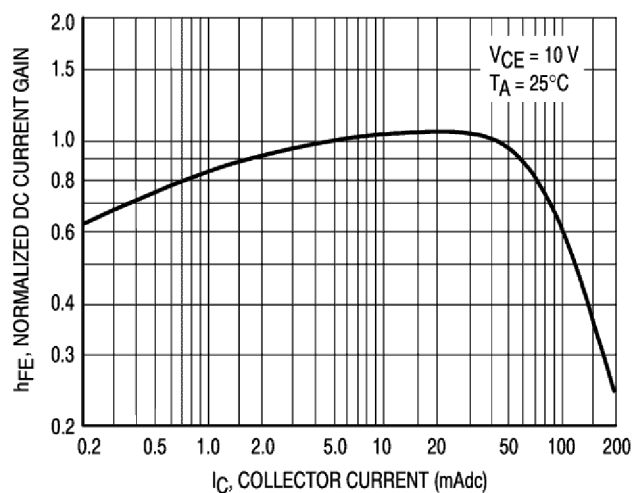


Figure 1. Normalized DC Current Gain

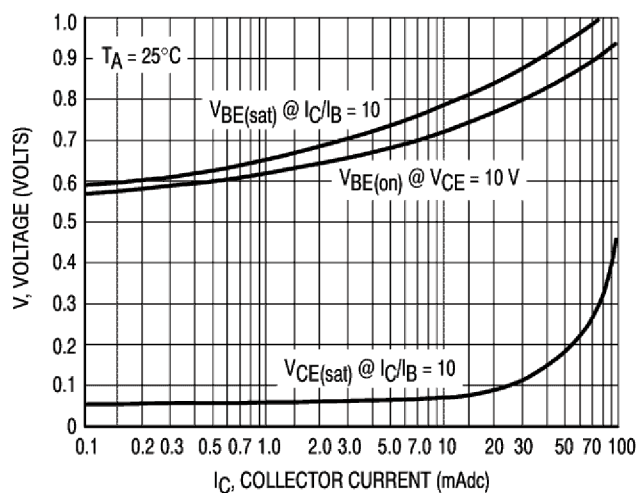


Figure 2. "Saturation" and "On" Voltages

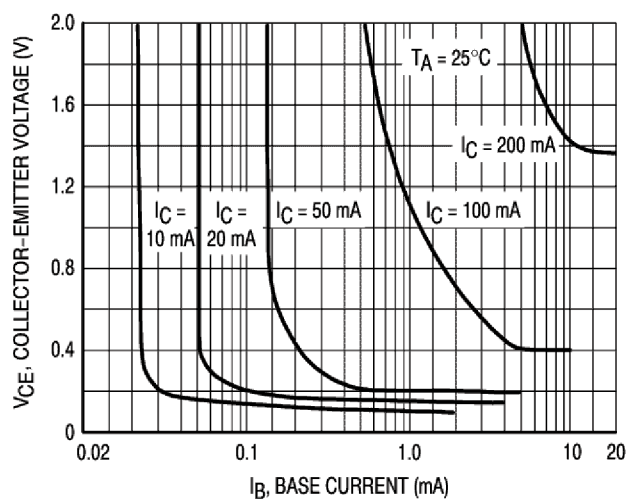


Figure 3. Collector Saturation Region

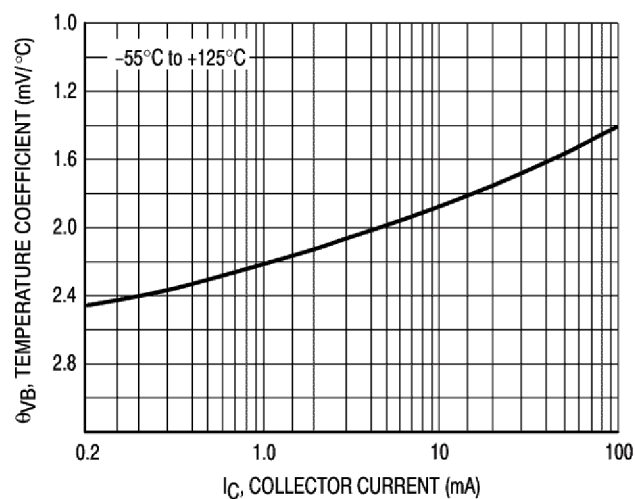


Figure 4. Base-Emitter Temperature Coefficient

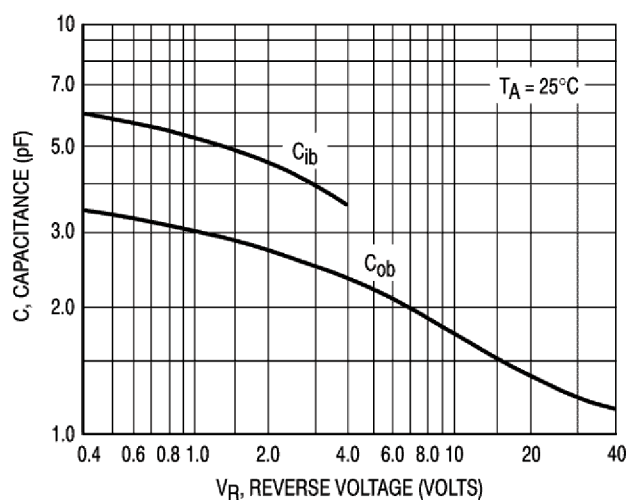


Figure 5. Capacitances

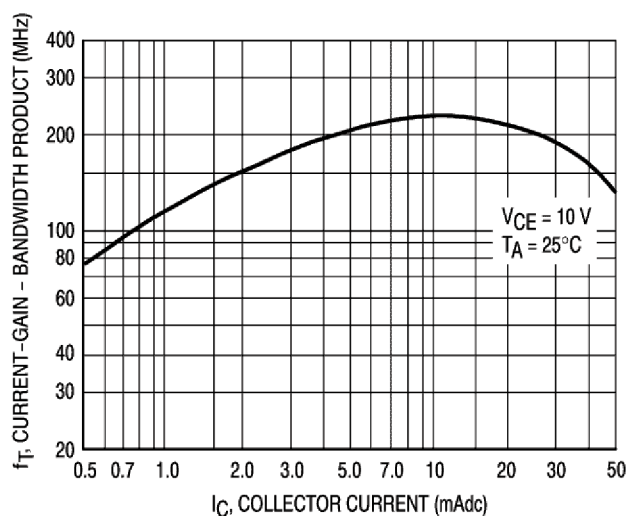


Figure 6. Current-Gain - Bandwidth Product

Typical Characteristics

BC846A/BLT1, BC847A/BLT1, BC848A/BLT1

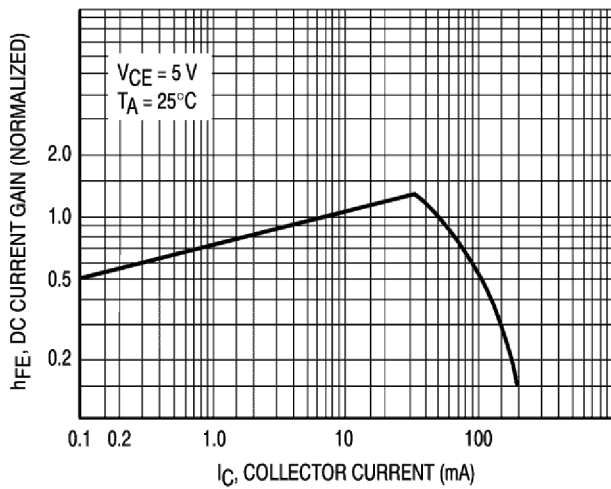


Figure 7. DC Current Gain

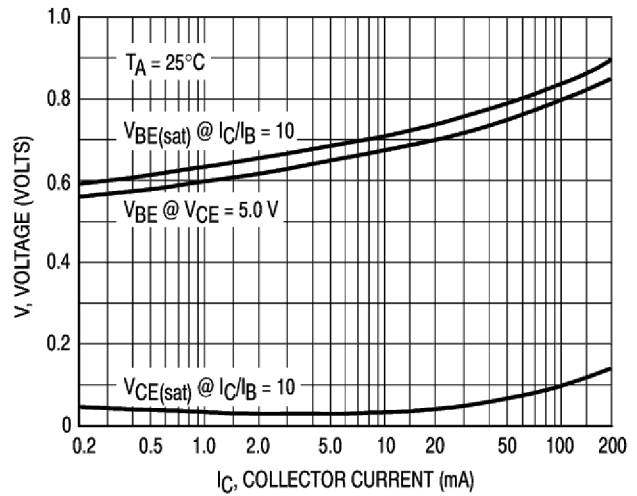


Figure 8. "On" Voltage

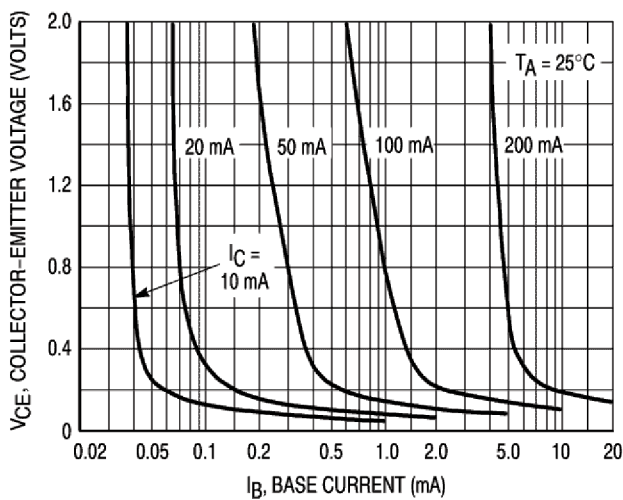


Figure 9. Collector Saturation Region

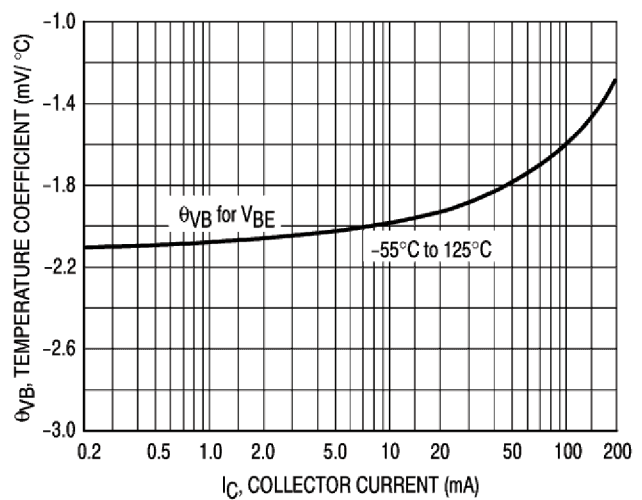


Figure 10. Base-Emitter Temperature Coefficient

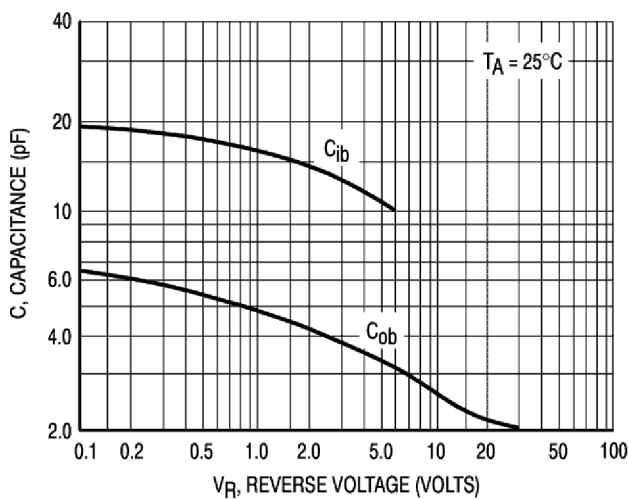


Figure 11. Capacitance

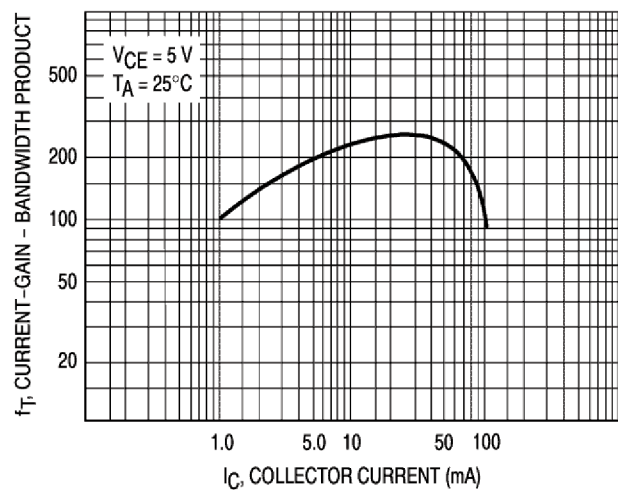
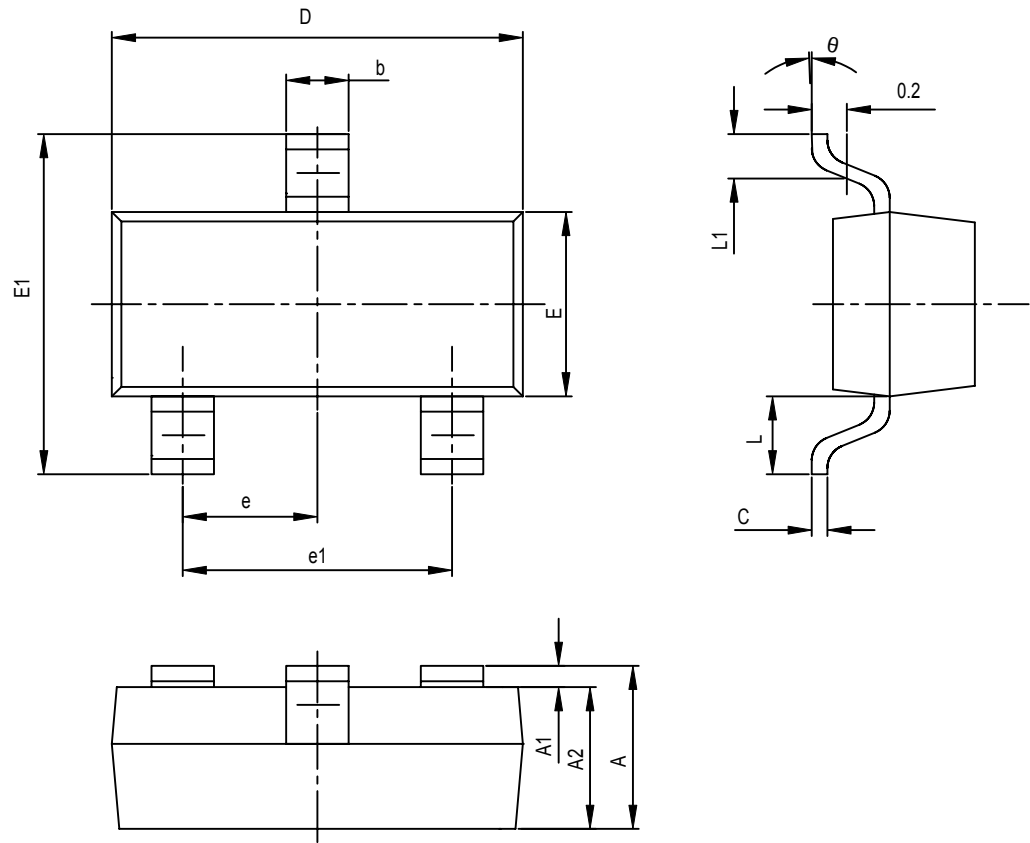


Figure 12. Current-Gain - Bandwidth Product

SOT-23 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950TPY		0.037TPY	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°