



## DESCRIPTION

The BC846-AL/BL, A847-848AL/BL/CL are available in SOT-23 package.

## ORDERING INFORMATION

Package Type	Part Number
SOT-23	BC846AL
	BC846BL
	BC847AL
	BC847BL
	BC847CL
	BC848AL
	BC848BL
	BC848CL
Package	SPQ: 3,000pcs/Reel
AiT provides all RoHS Compliant Products	

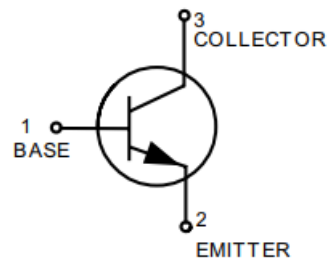
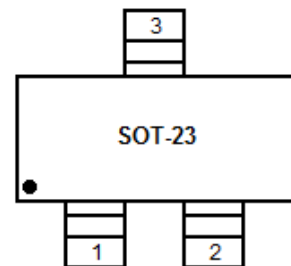
## FEATURES

- High current gain
- Excellent  $h_{FE}$  linearity
- Low noise between 30Hz and 15kHz
- For AF input stages and driver applications
- Available in SOT-23 package

## APPLICATIONS

- General purpose switching and amplification.

## PIN DESCRIPTION





## ABSOLUTE MAXIMUM RATINGS

T<sub>A</sub> = 25°C, unless otherwise specified

Parameter	Symbol	BC846	BC847	BC848	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	65	45	30	V
Collector-Base Voltage	V <sub>CBO</sub>	80	50	30	V
Emitter-Base Voltage	V <sub>EBO</sub>	6.0	6.0	5.0	V
Collector Current-Continuous	I <sub>C</sub>	0.1			A
Collector Dissipation	P <sub>C</sub>	200			mW
Junction and Storage Temperature	T <sub>J</sub> , T <sub>STG</sub>	-65~150			°C

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.



## ELECTRICAL CHARACTERISTICS

T<sub>A</sub> = 25°C, unless otherwise specified

Parameter	Symbol	Characteristic	Min	Typ	Max	Unit	
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =10μA, I <sub>E</sub> =0	BC846	80	-	-	V
			BC847	50	-	-	
			BC848	30	-	-	
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =0	BC846	65	-	-	V
			BC847	45	-	-	
			BC848	30	-	-	
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =10μA, I <sub>C</sub> =0	BC846	6.0	-	-	V
			BC847	6.0	-	-	
			BC848	5.0	-	-	
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> =70V, I <sub>E</sub> =0	BC846	-	-	0.1	μA
		V <sub>CB</sub> =50V, I <sub>E</sub> =0	BC847				
		V <sub>CB</sub> =30V, I <sub>E</sub> =0	BC848				
Collector Cutoff Current	I <sub>CEO</sub>	V <sub>CE</sub> =60V, I <sub>B</sub> =0	BC846	-	-	0.1	μA
		V <sub>CE</sub> =45V, I <sub>B</sub> =0	BC847				
		V <sub>CE</sub> =30V, I <sub>B</sub> =0	BC848				
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0		-	-	0.1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =2.0mA	BC846AL	110	-	220	
			BC847AL				
			BC848AL				
			BC846BL	200	-	450	
			BC847BL				
			BC848BL				
BC847CL	420	-	800				
BC848CL							
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =5mA		-	-	0.5	V
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =5mA		-	-	1.1	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =10mA, f=100MHz		100	-	-	MHz



## TYPICAL PERFORMANCE CHARACTERISTICS

$T_A = 25^\circ\text{C}$ , unless otherwise specified

Figure 1. Normalized DC Current Gain

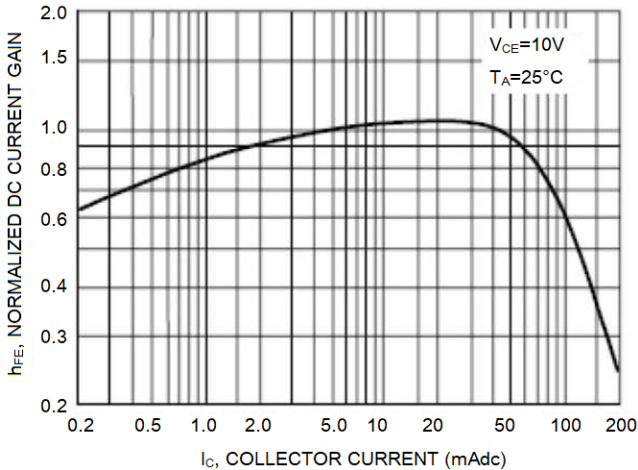


Figure 2. "Saturation" and "On" Voltage

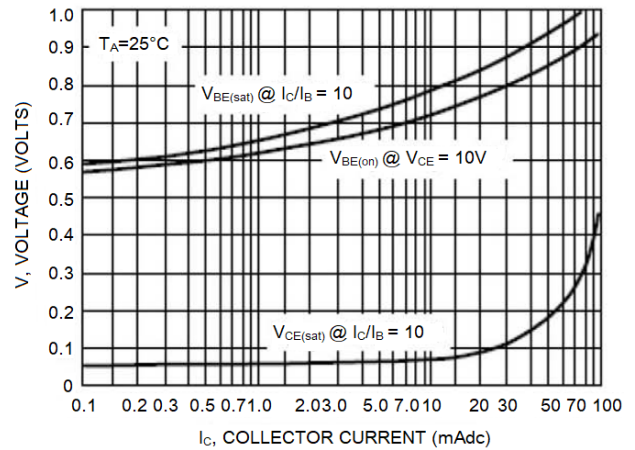


Figure 3. Collector Saturation Region

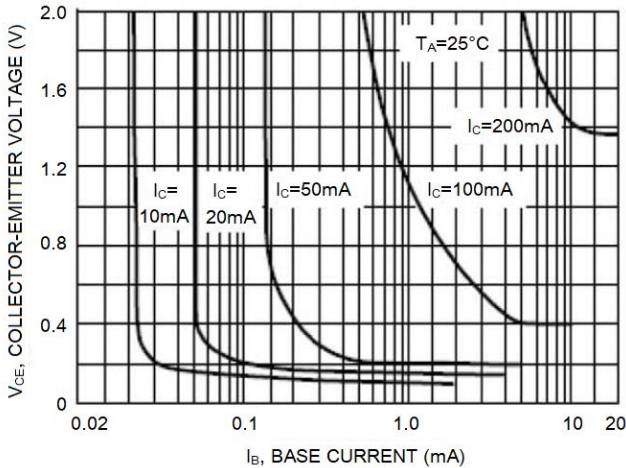


Figure 4. Base-Emitter Temperature Coefficient

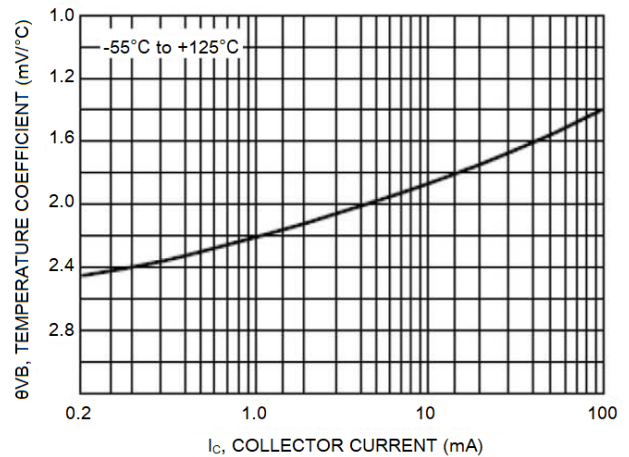


Figure 5. Capacitances

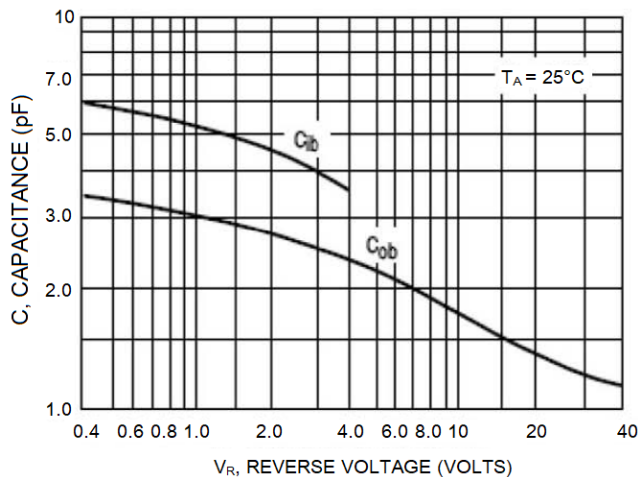
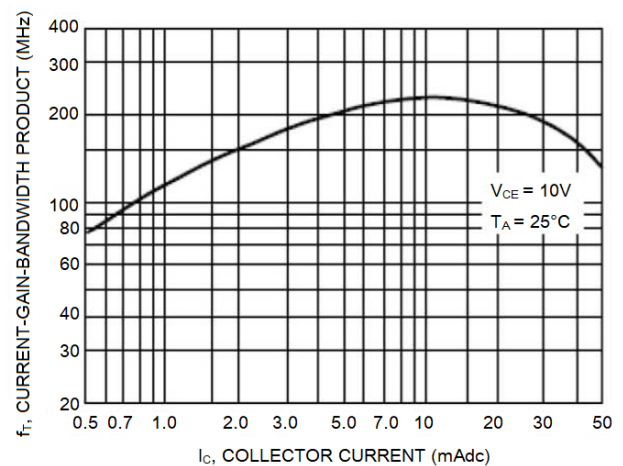


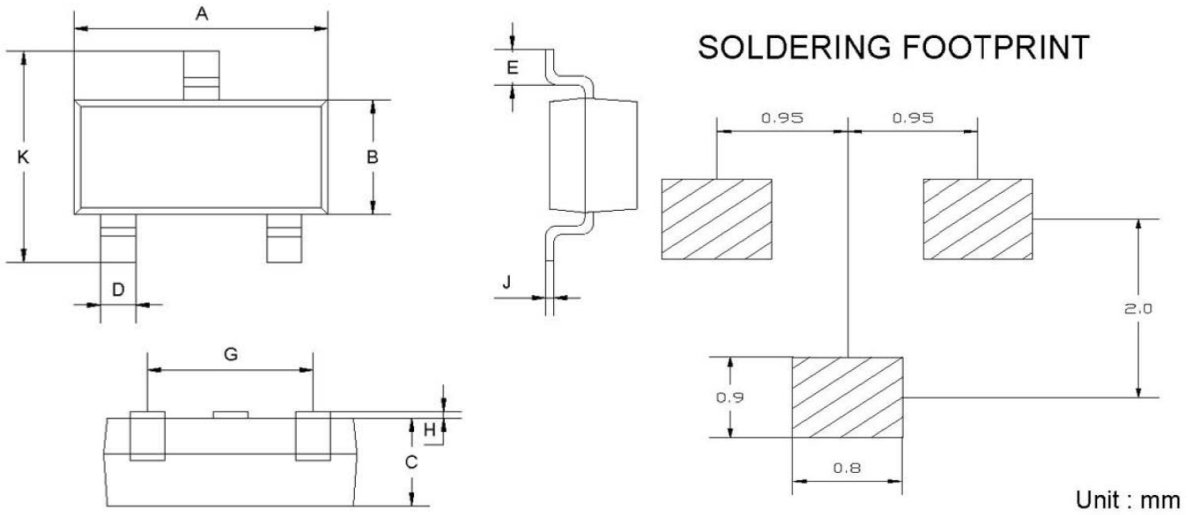
Figure 6. Current-Gain-Bandwidth Product





## PACKAGE INFORMATION

Dimension in SOT-23 Package (Unit: mm)



DIM	MIN	MAX
A	2.85	2.92
B	1.25	1.35
C	10 TYP	
D	0.37	0.43
E	0.35	0.48
G	1.85	1.95
H	0.02	0.1
J	0.1 TYP	
K	2.35	2.45



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