

## NPN general purpose Transistor

## BC846/847/848

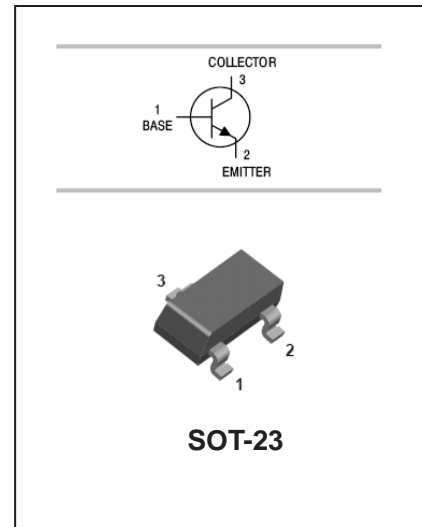
### FEATURES

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



### APPLICATIONS

- General purpose switching and amplification.



### ORDERING INFORMATION

Type No.	Marking	Package Code
BC846A/B	1A/1B	SOT-23
BC847A/B/C	1E/1F/1G	SOT-23
BC848A/B/C	1J/1K/1L	SOT-23

### MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	BC846	80
		BC847	50
		BC848	30
$V_{CEO}$	Collector-Emitter Voltage	BC846	65
		BC847	45
		BC848	30
$V_{EBO}$	Emitter-Base Voltage	BC846	6
		BC847	6
		BC848	5
$I_C$	Collector Current -Continuous	0.1	A
$P_C$	Collector Dissipation	200	mW
$T_j, T_{stg}$	Junction and Storage Temperature	-65~150	°C

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### ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	BC846 BC847 BC848	$V_{(BR)CBO}$ $I_C=10\mu A, I_E=0$	80 50 30			V
Collector-emitter breakdown voltage	BC846 BC847 BC848	$V_{(BR)CEO}$ $I_C=10mA, I_B=0$	65 45 30			V
Emitter-base breakdown voltage	BC846 BC847 BC848	$V_{(BR)EBO}$ $I_E=10\mu A, I_C=0$	6 6 5			V
Collector cut-off current	BC846 BC847 BC848	$I_{CBO}$ $V_{CB}=70V, I_E=0$ $V_{CB}=50V, I_E=0$ $V_{CB}=30V, I_E=0$			0.1	$\mu A$
Collector cut-off current	BC846 BC847 BC848	$I_{CEO}$ $V_{CE}=60V, I_B=0$ $V_{CE}=45V, I_B=0$ $V_{CE}=30V, I_B=0$			0.1	$\mu A$
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 BC846C,847C,848C	$h_{FE}$ $V_{CE}=5V, I_C=2mA$	110 200 420		220 450 800	
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

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### TYPICAL CHARACTERISTICS @ $T_A=25^\circ\text{C}$ unless otherwise specified

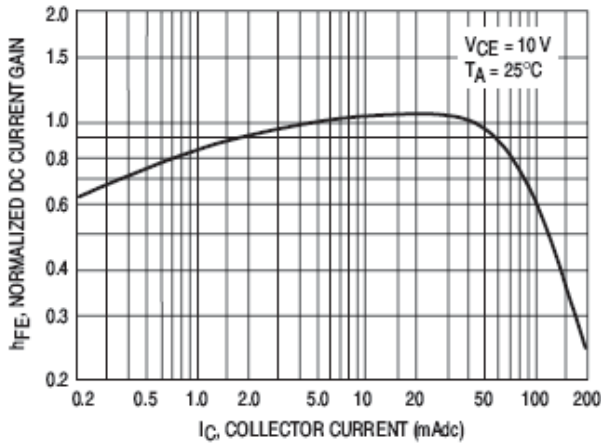


Figure 1. Normalized DC Current Gain

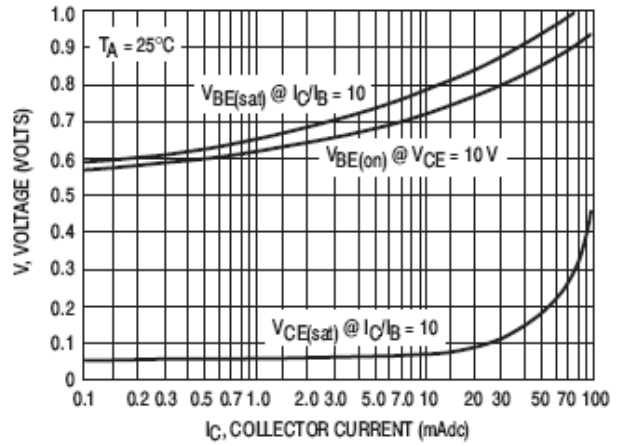


Figure 2. "Saturation" and "On" Voltages

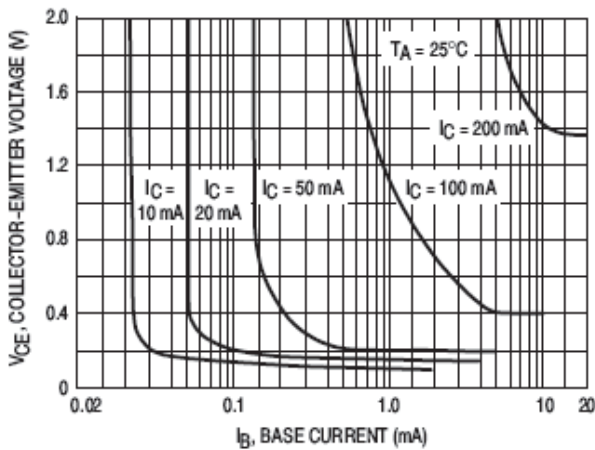


Figure 3. Collector Saturation Region

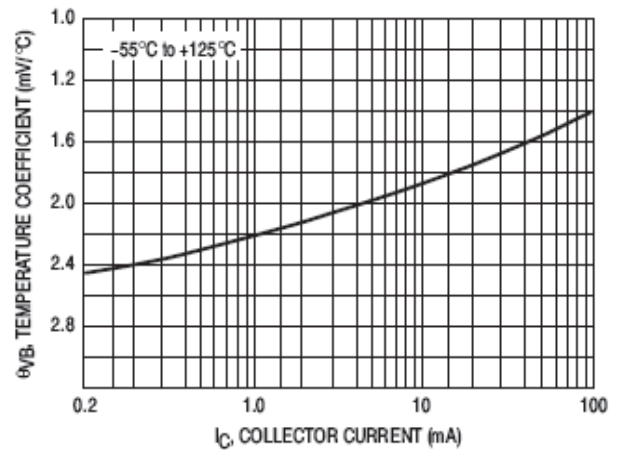


Figure 4. Base-Emitter Temperature Coefficient

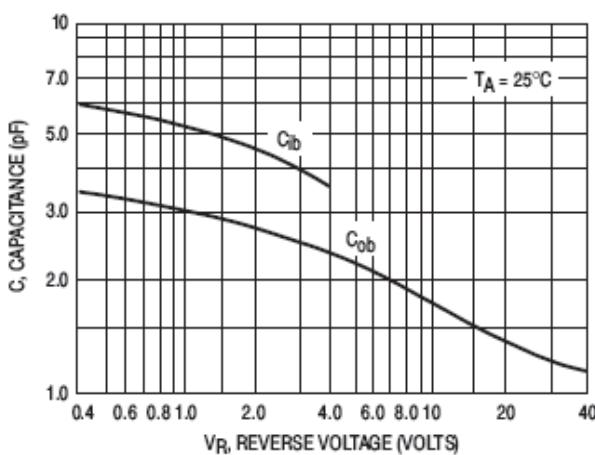


Figure 5. Capacitances

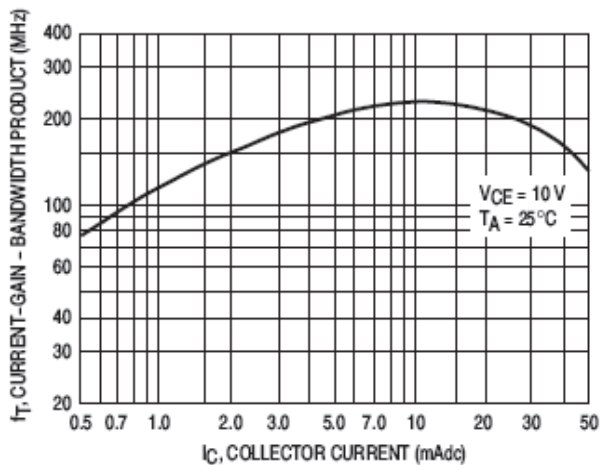


Figure 6. Current-Gain - Bandwidth Product

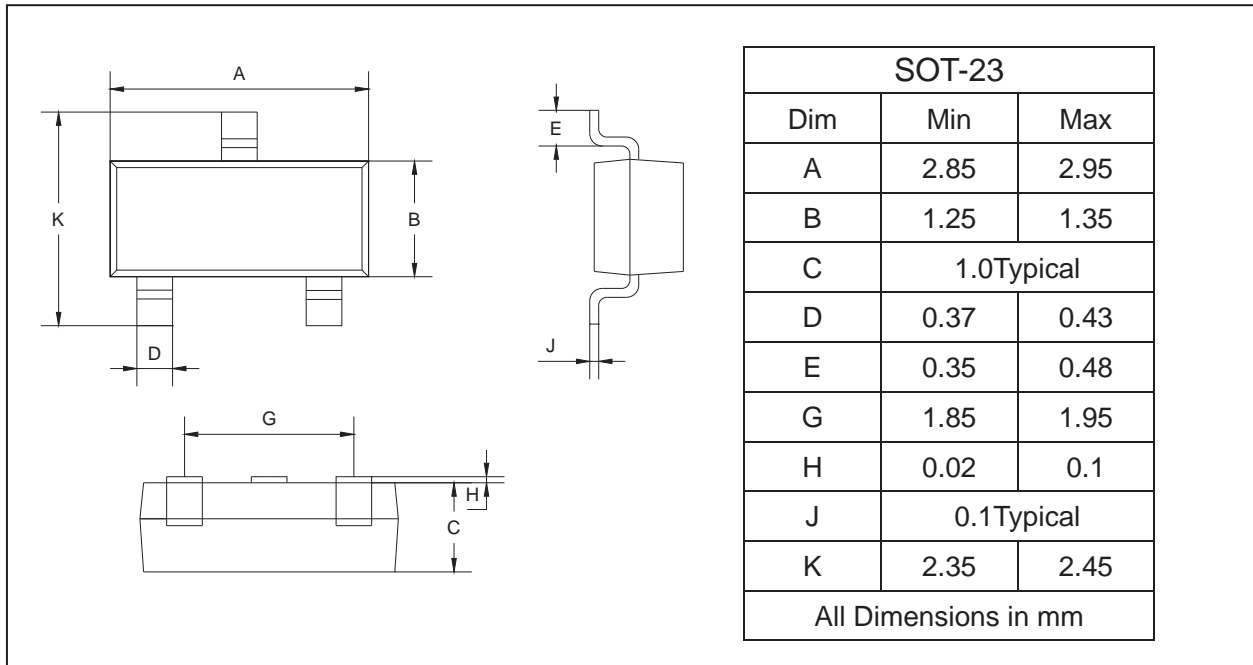
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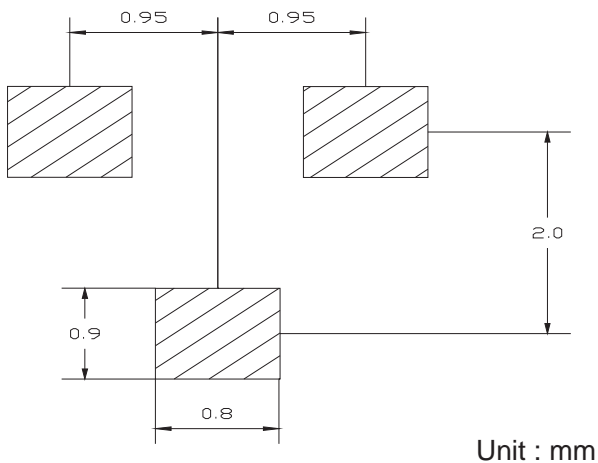
### PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



### SOLDERING FOOTPRINT



### PACKAGE INFORMATION

Device	Package	Shipping
BC846/847/848	SOT-23	3000/Tape&Reel