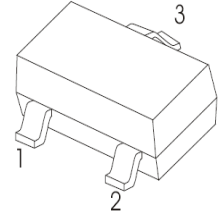


**SOT-23 Plastic-Encapsulate Transistor**

**BC846A, B** TRANSISTOR (NPN)  
**BC847A, B, C**  
**BC848A, B, C**

**SOT-23**

1. BASE
2. EMITTER
3. COLLECTOR

**FEATURES**

- Ideally suited for automatic insertion
- For Switching and AF Amplifier Applications

**PACKAGE SPECIFICATIONS**

Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (pcs)	Box Size (mm)	QTY/Box (pcs)	Carton Size (mm)	Q'TY/Carton (pcs)
SOT-23	7'	330	3000	203×203×195	45000	438×438×220	180000

**MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)**

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	BC846	80
		BC847	50
		BC848	30
V <sub>CEO</sub>	Collector-Emitter Voltage	BC846	65
		BC847	45
		BC848	30
V <sub>EBO</sub>	Emitter-Base Voltage	6	V
I <sub>C</sub>	Collector Current –Continuous	0.1	A
P <sub>C</sub> *	Collector Power Dissipation	200	mW
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-65-150	°C

**DEVICE MARKING**

BC846A=1A; BC846B=1B;  
 BC847A=1E; BC847B=1F; BC847C=1G;  
 BC848A=1J; BC848B=1K; BC848C=1L

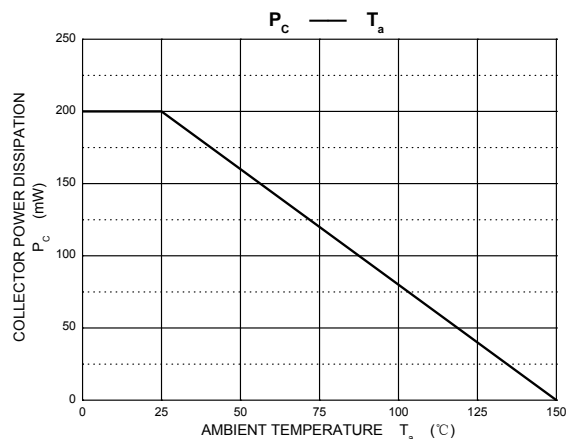
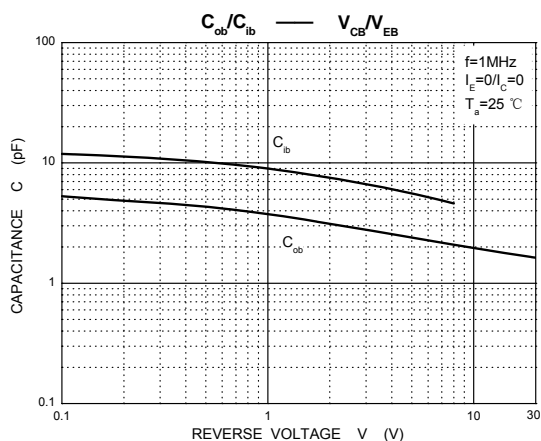
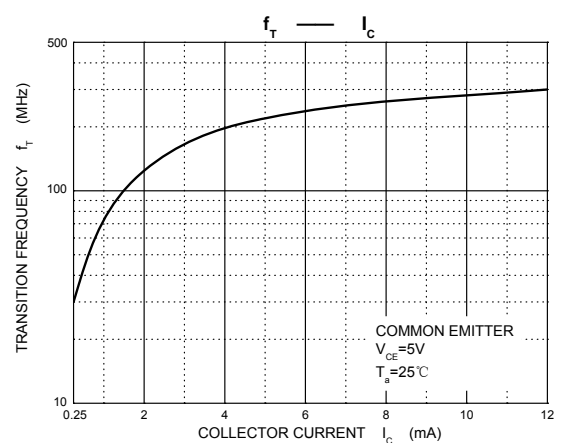
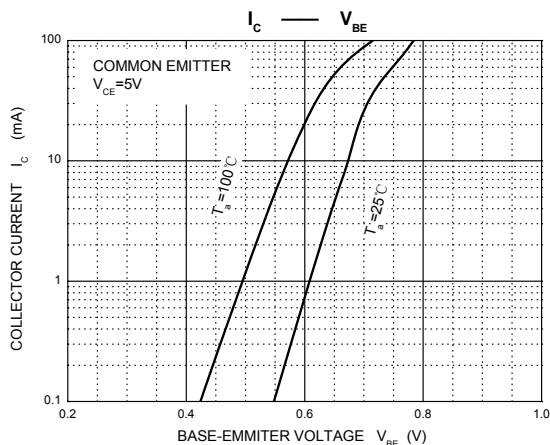
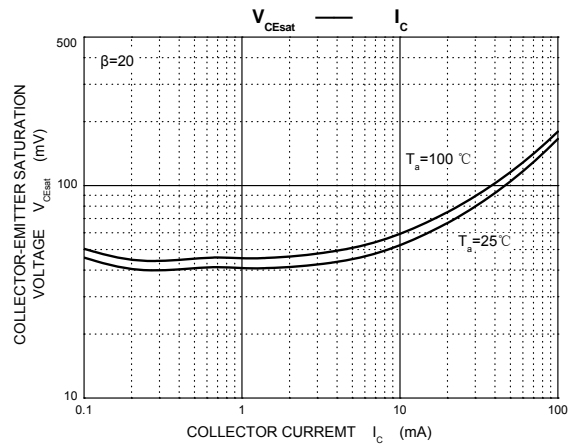
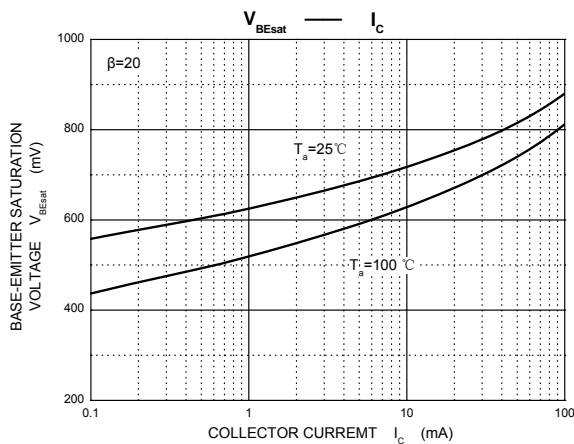
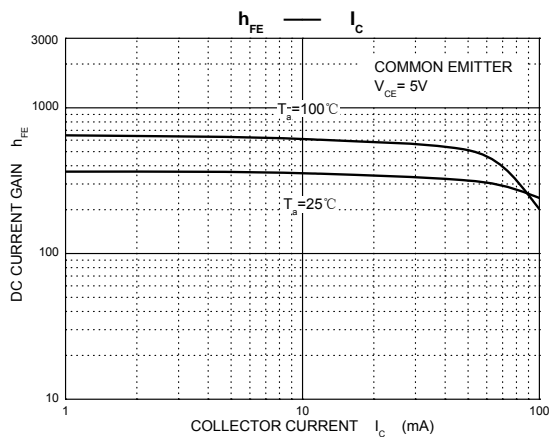
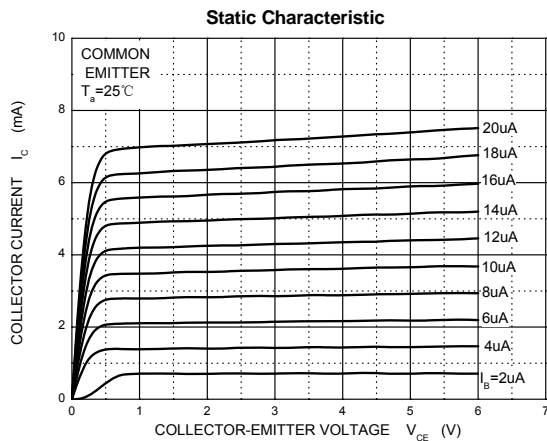


**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BC846 BC847 BC848	V <sub>CBO</sub> I <sub>C</sub> = 10μA, I <sub>E</sub> =0	80			V
			50			
			30			
Collector-emitter breakdown voltage	BC846 BC847 BC848	V <sub>CEO</sub> I <sub>C</sub> = 10mA, I <sub>B</sub> =0	65			V
			45			
			30			
Emitter-base breakdown voltage	V <sub>EBO</sub>	I <sub>E</sub> = 10μA, I <sub>C</sub> =0	6			V
Collector cut-off current	BC846 BC847 BC848	I <sub>CBO</sub> V <sub>CB</sub> =70 V , I <sub>E</sub> =0 V <sub>CB</sub> =50 V , I <sub>E</sub> =0 V <sub>CB</sub> =30 V , I <sub>E</sub> =0			0.1	μA
Collector cut-off current	BC846 BC847 BC848	I <sub>CEO</sub> V <sub>CE</sub> =60 V , I <sub>B</sub> =0 V <sub>CE</sub> =45 V , I <sub>B</sub> =0 V <sub>CE</sub> =30 V , I <sub>B</sub> =0			0.1	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =5 V , I <sub>C</sub> =0			0.1	μA
DC current gain	BC846A,847A,848A BC846B,847B,848B BC847C,BC848C	h <sub>FE</sub> V <sub>CE</sub> = 5V, I <sub>C</sub> = 2mA	110		220	
			200		450	
			420		800	
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 V, I <sub>C</sub> = 10mA f=100MHz	100			MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V,f=1MHz			4.5	pF

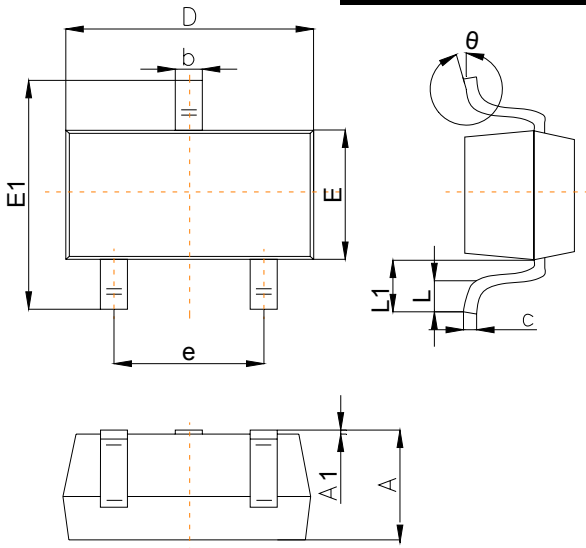
The above data are for reference only.

Typical Characteristics



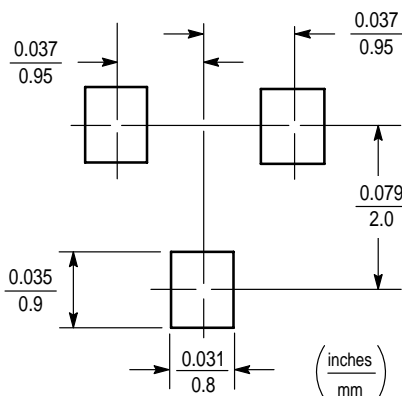
## Outline Drawing

### SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		
	Min	Typ	Max
A	1.00		1.40
A1			0.10
b	0.35		0.50
c	0.10		0.20
D	2.70	2.90	3.10
E	1.40		1.60
E1	2.4		2.80
e		1.90	
L	0.10		0.30
L1	0.4		
$\theta$	0°		10°

### Suggested Pad Layout



**Note:**

1. Controlling dimension: in/millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

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