

## SOT -23 Plastic-Encapsulate Transistors

### Features

- Complementary to BC856/BC857/BC858
- Power Dissipation of 200mW
- Ideally suited for automatic insertion
- For switching and AF amplifier applications

### Mechanical Data

- SOT-23 Small Outline Plastic Package
- Epoxy UL: 94V-0
- Mounting Position: Any



**RoHS**  
COMPLIANT

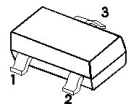


#### Marking:

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

#### SOT-23

#### Pin definition



1. BASE  
2. EMITTER  
3. COLLECTOR

### Maximum Ratings & Thermal Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

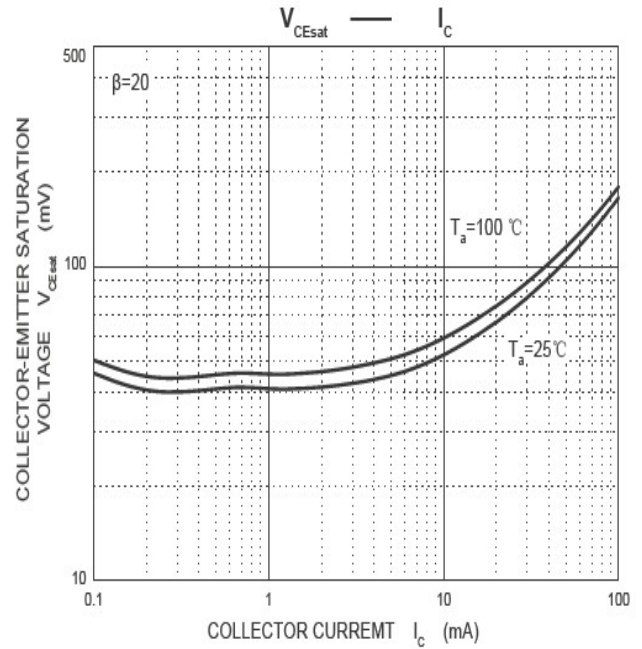
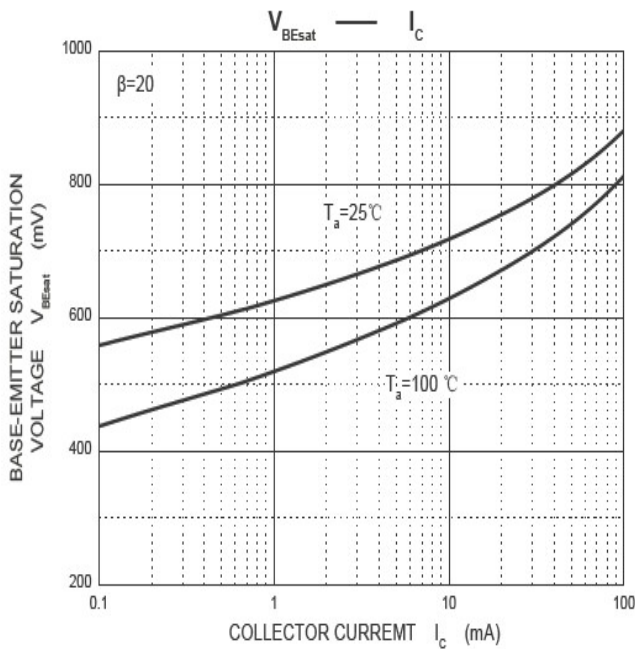
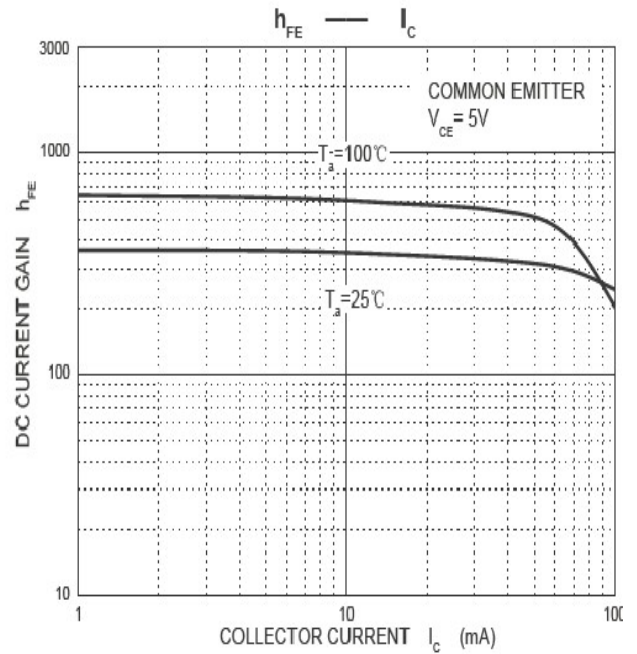
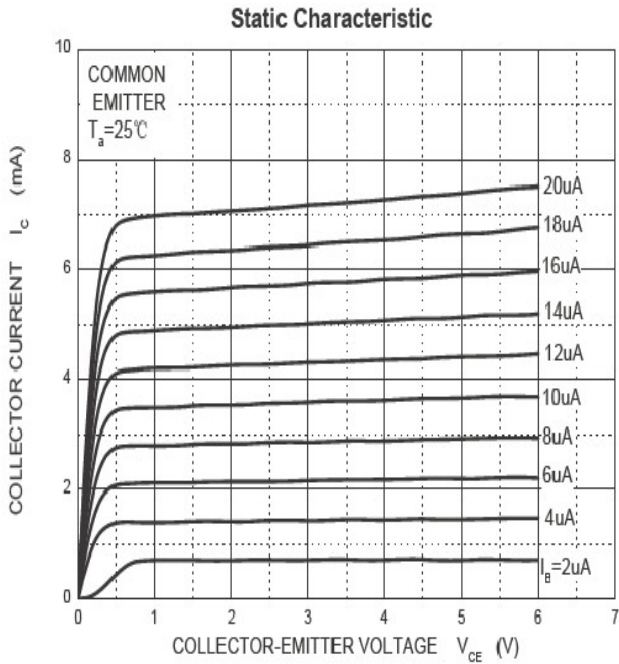
Parameters	Symbol		Value	Unit
Collector-Base Voltage	V <sub>CBO</sub>	BC846	80	V
		BC847	50	
		BC848	30	
Collector-Emitter Voltage	V <sub>CEO</sub>	BC846	65	V
		BC847	45	
		BC848	30	
Emitter -Base Voltage	V <sub>EBO</sub>		6	V
Collector Current-Continuous	I <sub>C</sub>		100	mA
Collector Power Dissipation	P <sub>C</sub>		200	mW
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>STG</sub>		-55-+150	°C
Thermal resistance From junction to ambient	R <sub>θJA</sub>		625	°C/W

### Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbols	Test Condition	Limits		Unit	
			Min	Max		
Collector-base breakdown voltage	V(BR)CBO	I <sub>C</sub> =10uA, I <sub>E</sub> =0	BC846	80	V	
			BC847	50		
			BC848	30		
Collector-emitter breakdown voltage	V(BR)CEO	I <sub>C</sub> =10mA, I <sub>B</sub> =0	BC846	65	V	
			BC847	45		
			BC848	30		
Emitter-base breakdown voltage	V(BR)EBO	I <sub>E</sub> =10uA, I <sub>C</sub> =0	6		V	
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =70V, I <sub>E</sub> =0	BC846	100	nA	
		V <sub>CB</sub> =50V, I <sub>E</sub> =0	BC847			
		V <sub>CB</sub> =30V, I <sub>E</sub> =0	BC848			
Collector cut-off current	I <sub>CEO</sub>	V <sub>CE</sub> =60V, I <sub>B</sub> =0	BC846	100	nA	
		V <sub>CE</sub> =45V, I <sub>B</sub> =0	BC847			
		V <sub>CE</sub> =30V, I <sub>B</sub> =0	BC848			
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0		100	nA	
DC current gain	h <sub>FE</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =2mA	BC846A;BC847A;BC848A	110	220	
			BC846B;BC847B;BC848B	200	450	
			BC847C;BC848C	420	800	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =5mA		0.50	V	
Base -emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =5mA		1.10	V	
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =5V, 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	

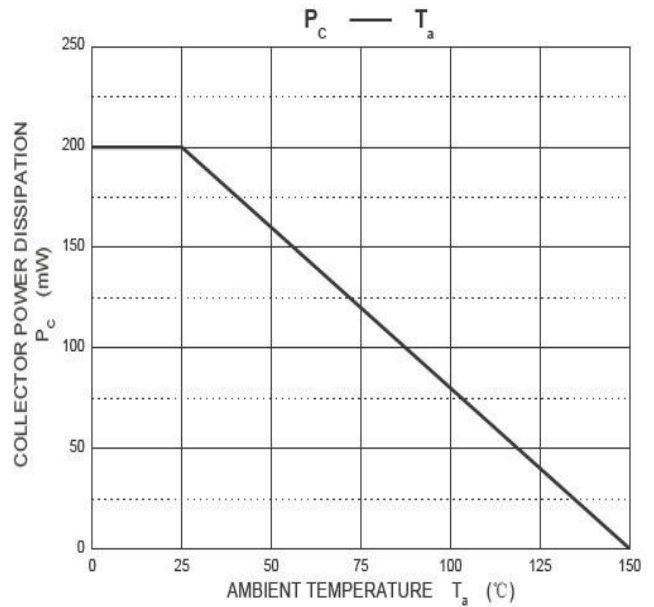
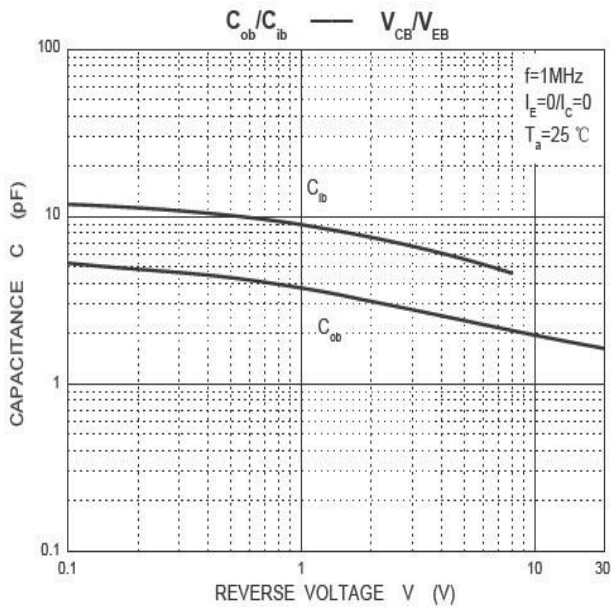
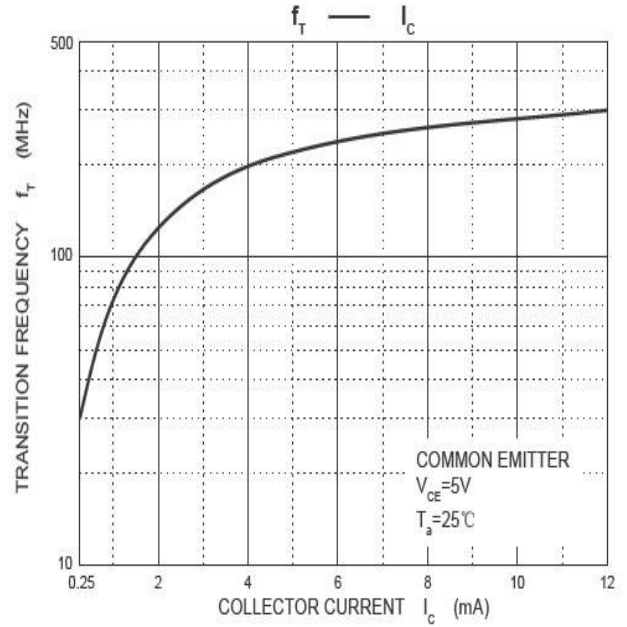
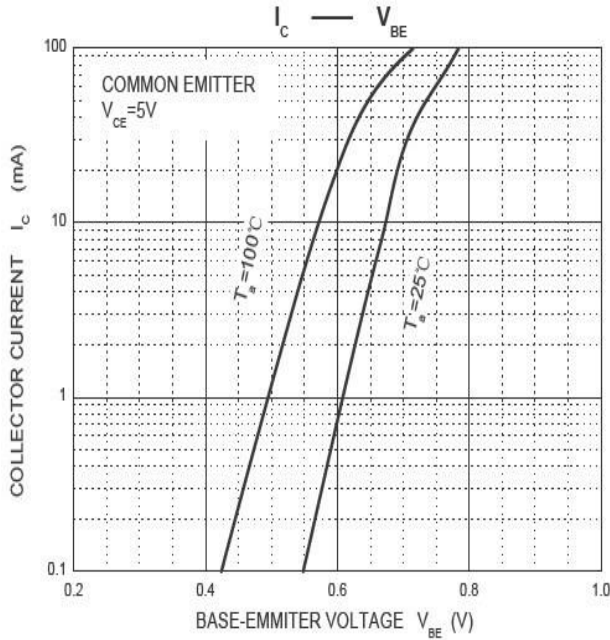
## Ratings and Characteristics Curves

( $T_a = 25^\circ\text{C}$  unless otherwise noted)



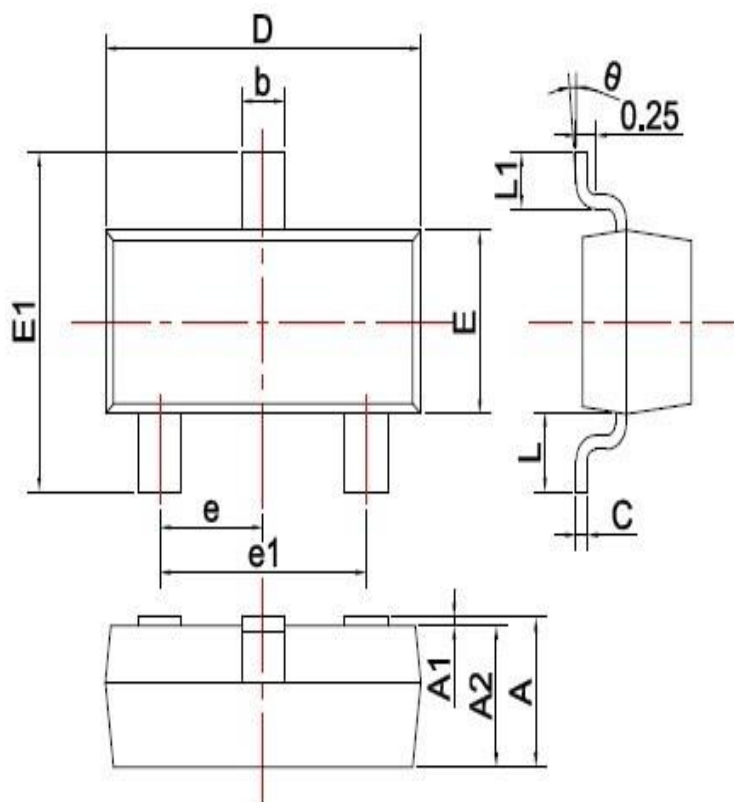
## Ratings and Characteristics Curves

( $T_A = 25^\circ\text{C}$  unless otherwise noted)



## Package Outline Dimensions

in inches (millimeters)



SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°

Unit: mm

## Revision History

Document Version	Date of release	Description of changes
Rev.A	2017.06.26	First issue

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