

# BC846/BC847/BC848

## BC846/BC847/BC848 SOT-23 Plastic-Encapsulate Transistors(NPN)

### General description

SOT-23 Plastic-Encapsulate Transistors(NPN)

### FEATURES

- Complementary to BC856/BC857/BC858
- Power Dissipation of 200mW
- Ideally suited for automatic insertion
- For switching and AF amplifier applications
- SOT-23 Small Outline Plastic Package
- Epoxy UL: 94V-0
- Mounting Position: Any



### DEVICE MARKING CODE:

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

### Maximum Ratings & Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

Parameters	Symbol		Value	Unit
Collector-Base Voltage	$V_{CBO}$	BC846	80	V
		BC847	50	
		BC848	30	
Collector-Emitter Voltage	$V_{CEO}$	BC846	65	V
		BC847	45	
		BC848	30	
Emitter -Base Voltage	$V_{EBO}$		6	V
Collector Current-Continuous	$I_C$		100	mA
Collector Power Dissipation	$P_C$		200	mW
Junction Temperature	$T_j$		150	°C
Storage Temperature	$T_{stg}$		-55-+150	°C
Thermal resistance From junction to ambient	$R_{\theta JA}$		625	°C/W

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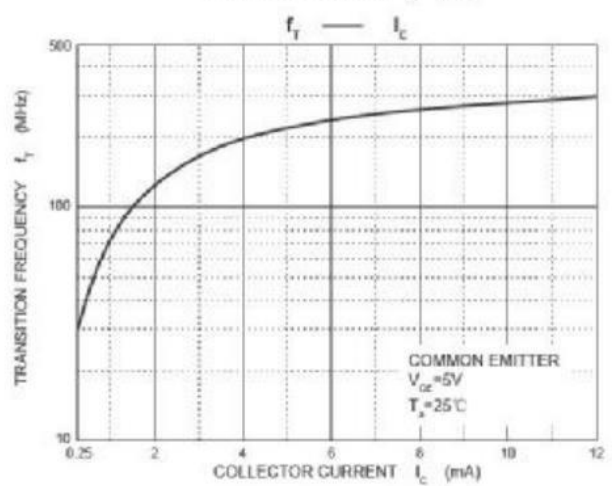
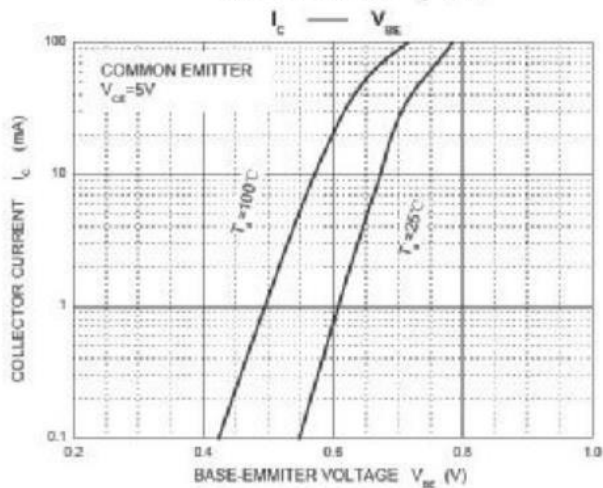
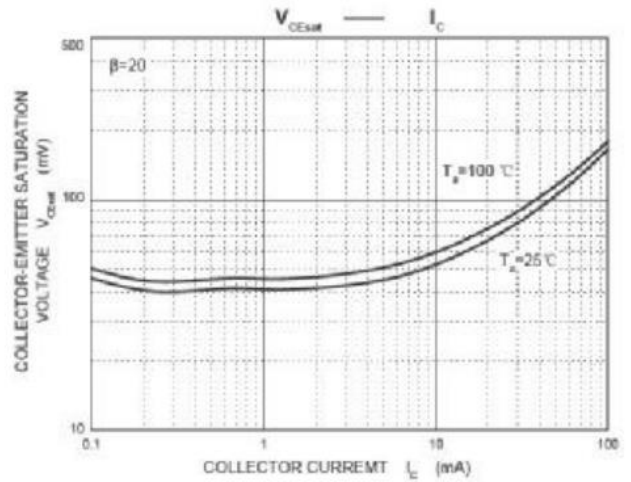
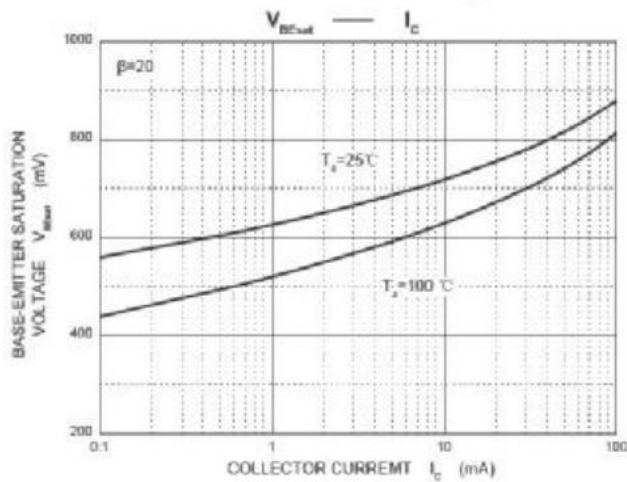
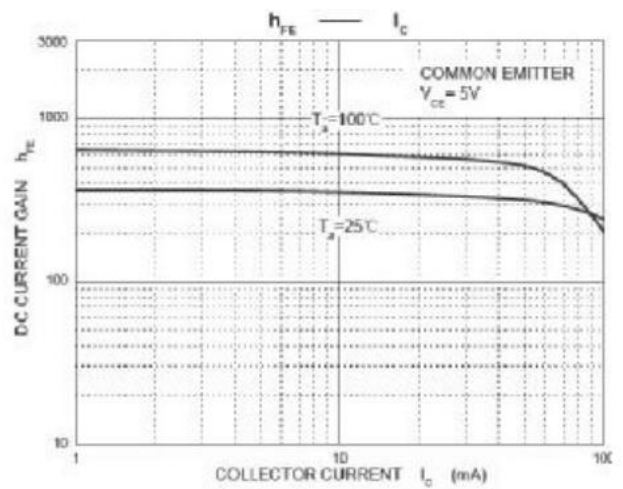
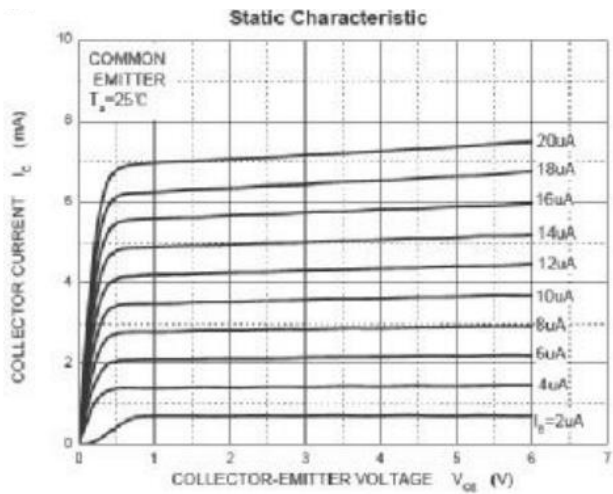
## Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified).

Parameter	Symbols	Test Condition	Limits		Unit
			Min	Max	
Collector-base breakdown voltage	<b>V(BR)CBO</b>	IC=10uA, IE=0	BC846 80 BC847 50 BC848 30		V
Collector-emitter breakdown voltage	<b>V(BR)CEO</b>	IC=10mA, IB=0	BC846 65 BC847 45 BC848 30		V
Emitter-base breakdown voltage	<b>V(BR)EBO</b>	IE=10uA, IC=0	6		V
Collector cut-off current	<b>ICBO</b>	V <sub>CB</sub> =70V, IE=0 V <sub>CB</sub> =50V, IE=0 V <sub>CB</sub> =30V, IE=0	BC846 BC847 BC848	100	nA
Collector cut-off current	<b>ICEO</b>	V <sub>CE</sub> =60V, IB=0 V <sub>CE</sub> =45V, IB=0 V <sub>CE</sub> =30V, IB=0	BC846 BC847 BC848	100	nA
Emitter cut-off current	<b>IEBO</b>	VEB=5V, IC=0		100	nA
DC current gain	<b>hFE</b>	V <sub>CE</sub> =5V, IC=2mA	BC846A;BC847A;BC848A BC846B;BC847B;BC848B BC847C;BC848C	110 200 420	220 450 800
Collector-emitter saturation voltage	<b>VCE(sat)</b>	IC=100mA, IB=5mA		0.50	V
Base -emitter saturation voltage	<b>VBE(sat)</b>	IC=100mA, IB=5mA		1.10	V
Transition frequency	<b>fT</b>	V <sub>CE</sub> =5V, IC=10mA, f=100MHz		100	MHz
Collector output capacitance	<b>Cob</b>	V <sub>CB</sub> =10V, f=1MHz		4.5	pF



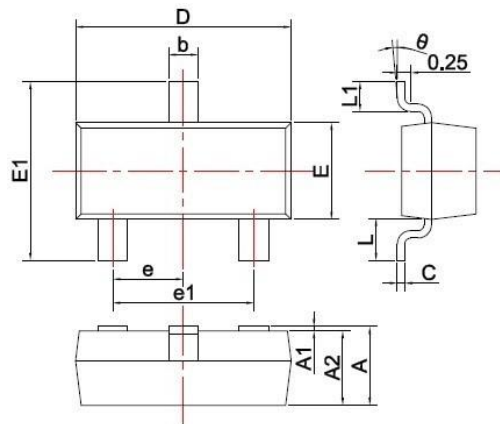
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## RATING AND CHARACTERISTIC CURVES



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## SOT-23 PACKAGE OUTLINE Plastic surface mounted package

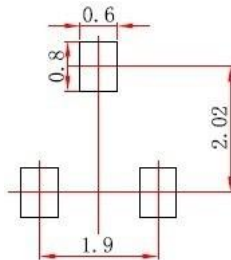


SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
H	0°	8°

Unit: mm

Precautions: PCB Design

Recommended land dimensions for SOT-23 diode. Electrode patterns for PCBs



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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