

BC846 Thru BC848

Rev-1.1

SuperTransistor – V_{CBO} 30~80V, I_c 100mA SOT-23 Plastic-Encapsulate NPN Transistors

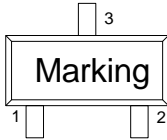
1. Features

- Complementary to BC856/ BC857/ BC858
- Power dissipation of 200mW
- Ideally suited for automatic insertion

2. Mechanical Data

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

3. Pin configuration

Pin		Function		Outline				
1		Base						
2		Emitter						
3		Collector						
Part number	BC846A	BC847A	BC848A	BC846B	BC847B	BC848B	BC847C	BC848C
Marking	1A	1E	1J	1B	1F	1K	1G	1L

4. Specification

Absolute Maximum Rating & Thermal Characteristics

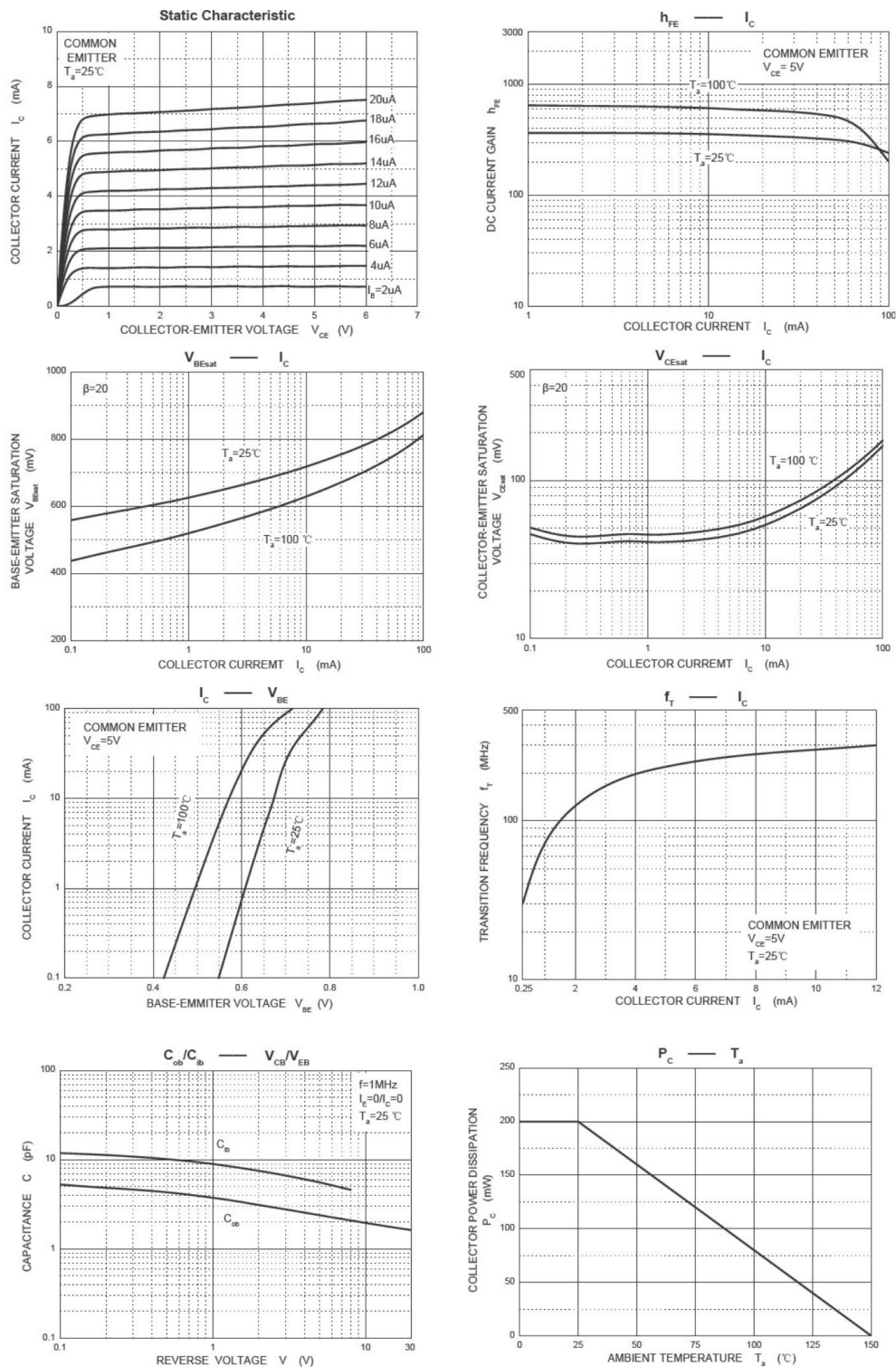
Ratings at 25 °C ambient temperature unless otherwise specified.

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

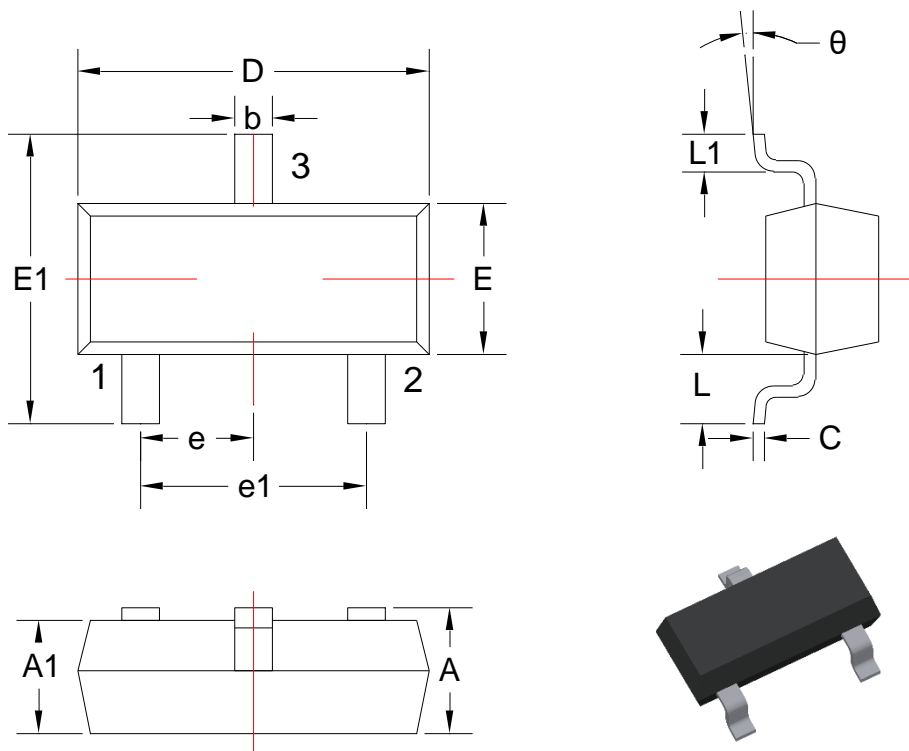
Electrical Characteristics(At TA = 25°C unless otherwise specified)

Parameters	Symbols	Test Condition	Limits				
			Min	Typ	Max	Unit	
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	BC846	80			V
			BC847	50			
			BC848	30			
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	BC846	65			V
			BC847	45			
			BC848	30			
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$		6			V
Collector cut-off current	I_{CBO}	$V_{CB}=70V, I_E=0$	BC846			100	nA
		$V_{CB}=50V, I_E=0$	BC847				
		$V_{CB}=30V, I_E=0$	BC848				
Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$				100	nA
DC current gain	h_{FE}	$V_{CE}=5V, I_C=2mA$	BC846/7/8A	110		220	
			BC846/7/8B	200		450	
			BC847/8C	420		800	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=100mA, I_B=5mA$				0.50	V
Base -emitter saturation voltage	$V_{BE(sat)}$	$I_C=100mA, I_B=5mA$				1.10	V
Collector output capacitance	C_{OB}	$V_{CB}=10V, f=1MHz$				4.5	pF
Transition frequency	f_T	$V_{CE}=5V, I_C=10mA,$ $f=100MHz$		100			MHz

5. Typical Characteristic

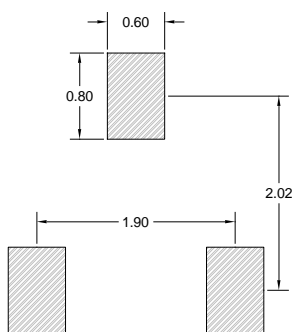


6. Dimension and Patterns (SOT-23)



Units: mm

Symbol	Dimensions		Symbol	Dimensions	
	Min.	Max.		Min.	Max.
A	0.900	1.150	E1	2.250	2.550
A1	0.900	1.050	e	0.950TYP	
b	0.300	0.500	e1	1.800	2.000
c	0.080	0.150	L	0.550REF	
D	2.800	3.00	L1	0.300	0.500
E	1.200	1.400	θ	0°	8°



Note:

1. Controlling dimension: in millimeters
2. General tolerance: ±0.05mm
3. The pad layout is for reference only
4. Unit: mm

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