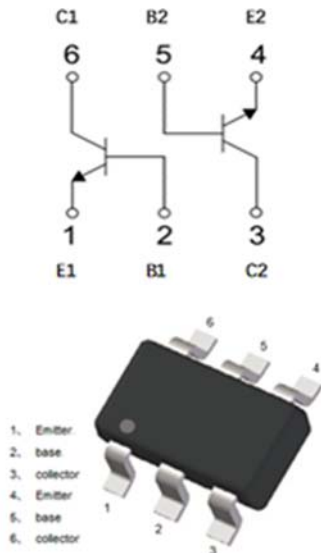


## Dual NPN Small Signal Transistor



### Features

- Moisture sensitivity level 1
- Halogen free and RoHS compliant
- Surface mount package ideally suited for automatic insertion

### Application

- Signal amplification
- Switching circuit

### Mechanical data

- **Package:** SOT-363S
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

### ■ Maximum Ratings ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code				1C
Collector-base voltage	$V_{CBO}$	V	$I_C = 10\mu\text{A}, I_E = 0$	50
Collector-emitter voltage	$V_{CEO}$	V	$I_C = 10\text{mA}, I_B = 0$	45
Emitter-base voltage	$V_{EBO}$	V	$I_E = 10\mu\text{A}, I_C = 0$	6
Collector current	$I_C$	mA		100
Power dissipation	$P_D$	mW		300
Operation junction temperature	$T_j$	$^\circ\text{C}$		-55 to +150
Storage temperature	$T_{STG}$	$^\circ\text{C}$		-55 to +150



# BC847BSS

RoHS  
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## ■ Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	V	I <sub>C</sub> =10μA, I <sub>E</sub> =0	50		
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	V	I <sub>C</sub> =10mA, I <sub>B</sub> =0	45		
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	V	I <sub>E</sub> =10μA, I <sub>C</sub> =0	6		
Collector cut-off current	I <sub>CBO</sub>	nA	V <sub>CB</sub> =30V, I <sub>B</sub> =0			15
Emitter-base cutoff current	I <sub>EBO</sub>	nA	V <sub>EB</sub> =5V, I <sub>C</sub> =0			100
DC current gain	h <sub>FE</sub>		V <sub>CE</sub> =5V, I <sub>C</sub> =2mA	200		450
Collector-emitter saturation voltage	V <sub>CE(sat)1</sub>	V	I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA			0.25
	V <sub>CE(sat)2</sub>	V	I <sub>C</sub> =100mA, I <sub>B</sub> =5mA			0.65
Base-emitter saturation voltage	V <sub>BE(sat)1</sub>	V	I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA		0.7	
	V <sub>BE(sat)2</sub>	V	I <sub>C</sub> =100mA, I <sub>B</sub> =5mA		0.9	
Base-emitter voltage	V <sub>BE</sub>	V	V <sub>CE</sub> =5V, I <sub>C</sub> =2mA	0.58	0.665	0.7
Transition frequency	f <sub>T</sub>	MHz	V <sub>CE</sub> =5V, I <sub>C</sub> =10mA, f=100MHz		200	

## ■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R <sub>θJ-A</sub> <sup>(1)</sup>	°C/W	417
Thermal resistance, junction-to-case	R <sub>θJ-C</sub> <sup>(1)</sup>	°C/W	333

### Note:

(1) Device mounted on PCB, single-sided copper, with standard footprint



■ Characteristics

Fig 1: Static Characteristics

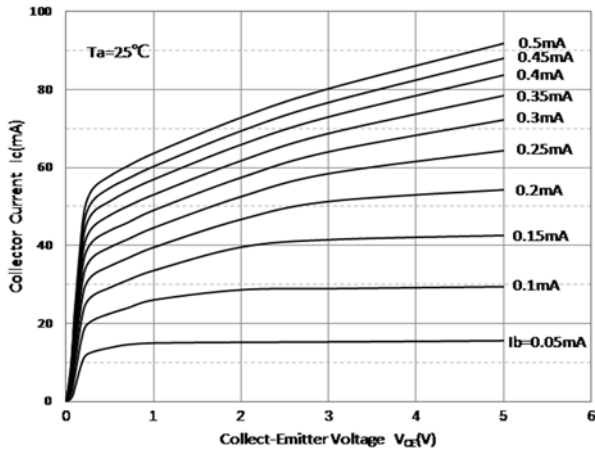


Fig 2: DC Current Gain Characteristics

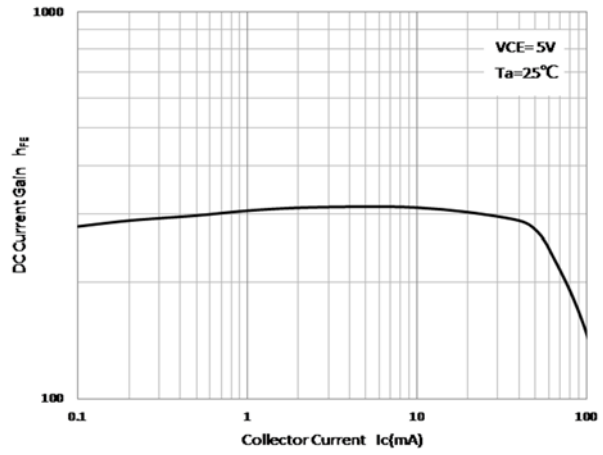


Fig 3: Collector-Emittor Saturation Voltage

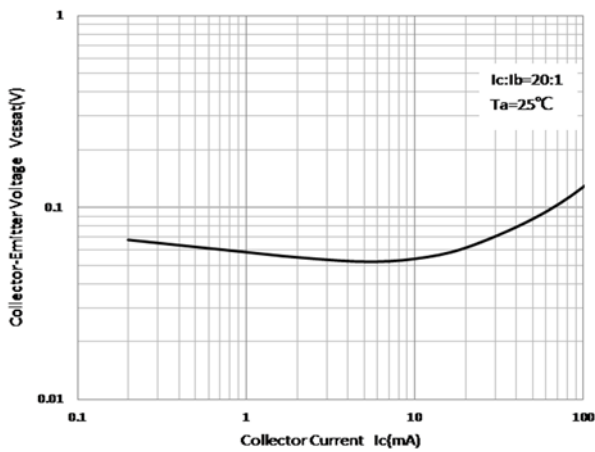


Fig 4: Base-Emittor Saturation Voltage

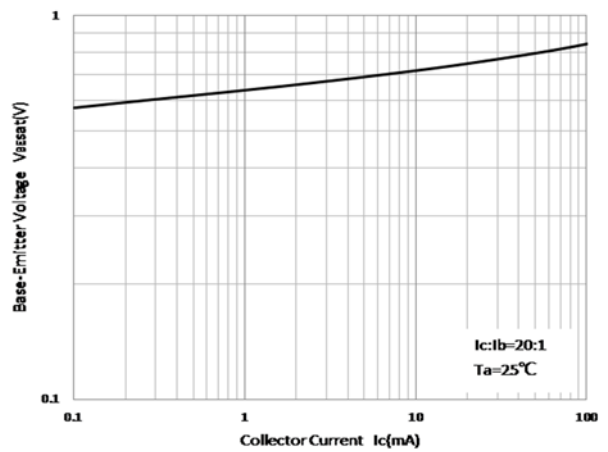


Fig 5: Base-emittor on voltage

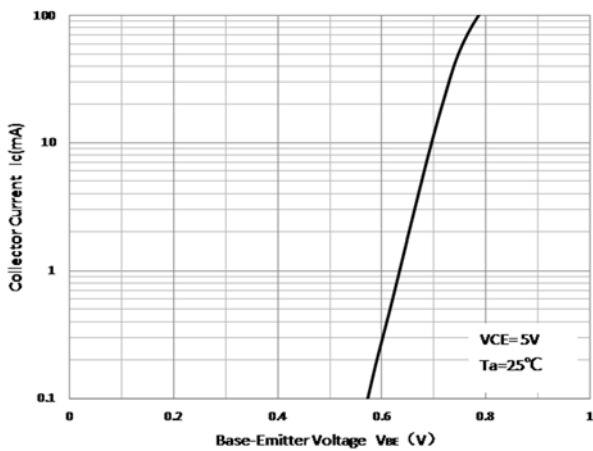


Fig 6: Cob/Cib-V<sub>CB</sub>/V<sub>EB</sub>

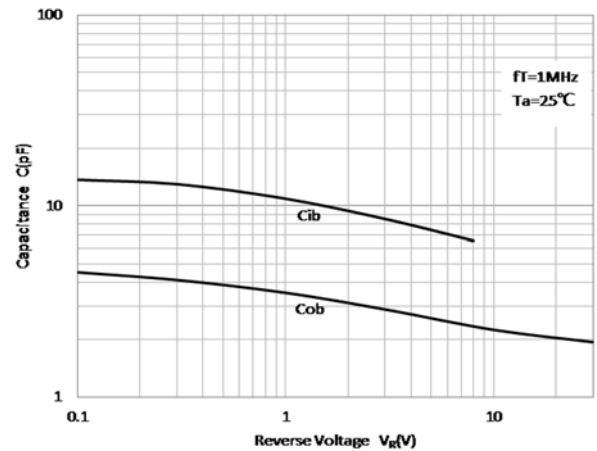
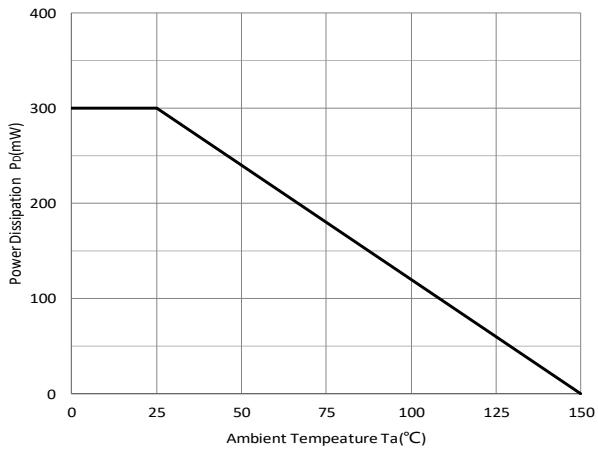




Fig 7:  $P_D$ - $T_a$  Curve





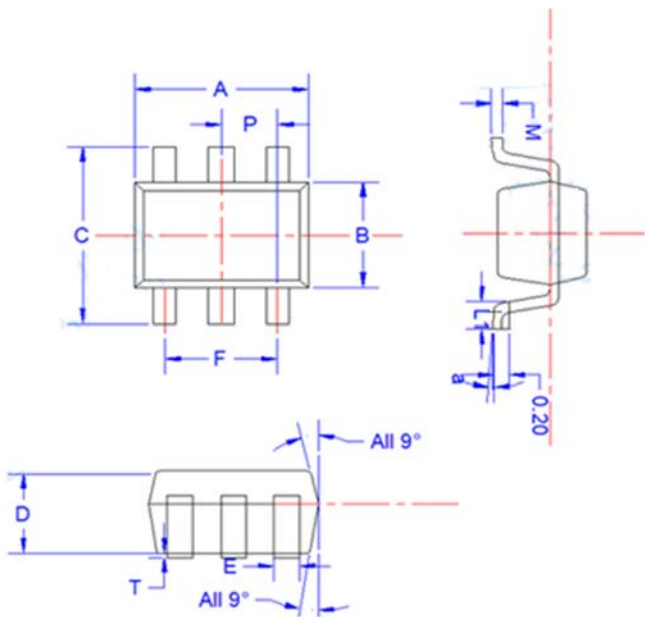
# BC847BSS

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## ■ Ordering Information

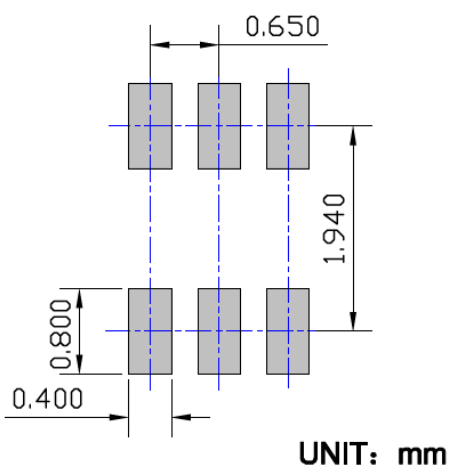
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
BC847BSS	F2	Approximate 0.009	3000	30000	120000	7" reel
BC847BSS	F3	Approximate 0.009	10000	/	210000	7" reel

## ■ Outline Dimensions



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
E	0.15	0.25	0.35
B	1.15	1.25	1.35
C	2.00	2.10	2.20
P	0.650BSC		
A	1.80	2.00	2.20
T	0.00	0.05	0.100
D	0.90	0.95	1.00
L1	0.20	0.30	0.40
a	4°±4°		
M	0.10	0.15	0.25

## ■ Suggested Pad Layout





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