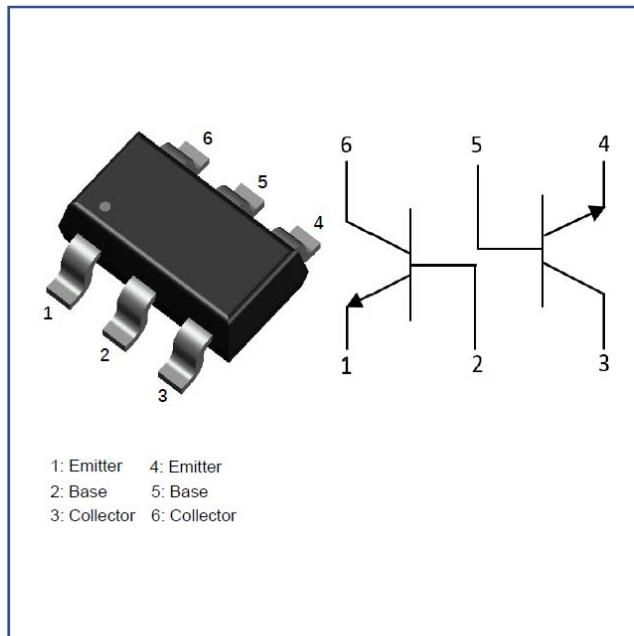


NPN+NPN Transistor



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-23-6L
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ Maximum Ratings (Ta=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code				N3
Collector-base voltage	V_{CBO}	V	$I_C=50\mu A, I_E=0$	50
Collector-emitter voltage	V_{CEO}	V	$I_C=1mA, I_B=0$	45
Emitter-base voltage	V_{EBO}	V	$I_E=50\mu A, I_C=0$	5
Collector current	I_C	mA		500
Power dissipation	P_D	mW		300
Operation junction temperature	T_J	°C		-55 to +150
Storage temperature	T_{STG}	°C		-55 to +150



BC817DS

RoHS
COMPLIANT

■ Electrical Characteristics (Ta=25°C unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	$V_{(BR)CBO}$	V	$I_C=50\mu A, I_E=0$	50		
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	V	$I_C=1mA, I_B=0$	45		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	V	$I_E=50\mu A, I_C=0$	5		
Collector-base cut-off current	I_{CBO}	nA	$V_{CB}=20V, I_E=0$			100
Emitter-base cut-off current	I_{EBO}	nA	$V_{EB}=5V, I_C=0$			100
DC current gain	h_{FE1}		$I_C=100mA, V_{CE}=1V$	160		400
	h_{FE2}		$I_C=500mA, V_{CE}=1V$	40		
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	$I_C=500mA, I_B=50mA$			0.7
Base-emitter voltage	V_{BE}	V	$I_C=500mA, V_{CE}=1V$			1.2
Transition frequency	f_T	MHz	$I_C=10mA, V_{CE}=5.0V, f=30MHz$	100		

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	$R_{\theta J-A}^{(1)}$	°C/W	417
Thermal resistance, junction-to-case	$R_{\theta J-C}^{(1)}$	°C/W	334

Note:

(1) Thermal resistance from junction to ambient and from junction to case mounted on P.C.B. with 25.4*25.4mm copper pad areas

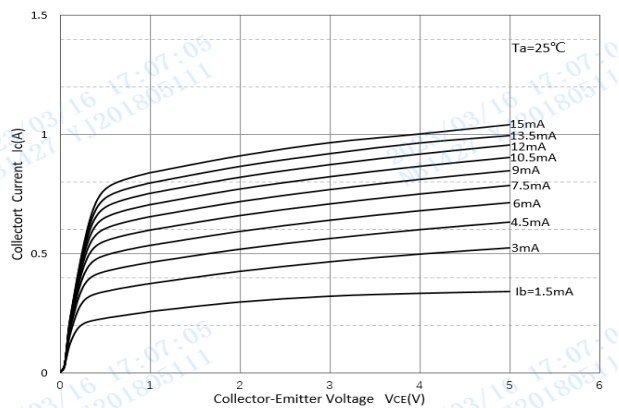
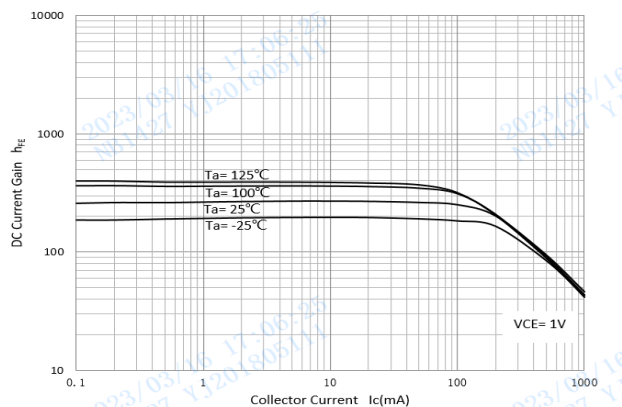
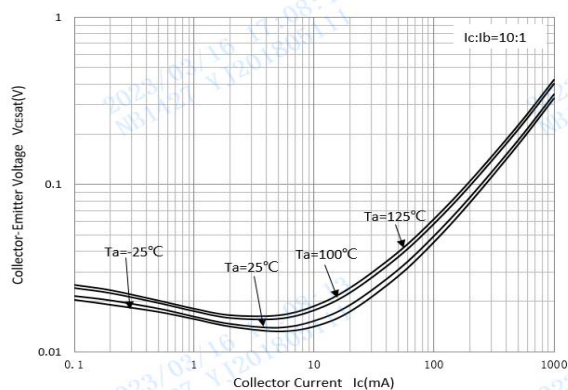
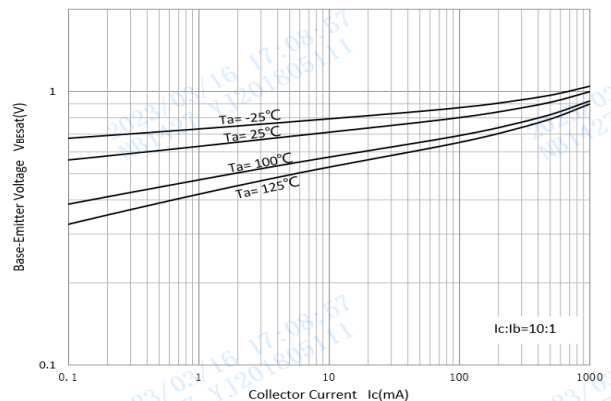
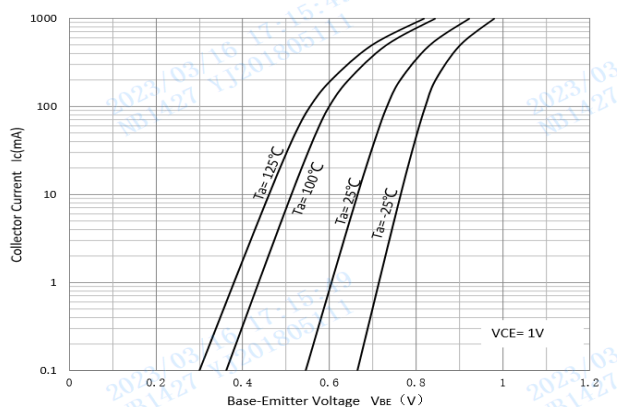
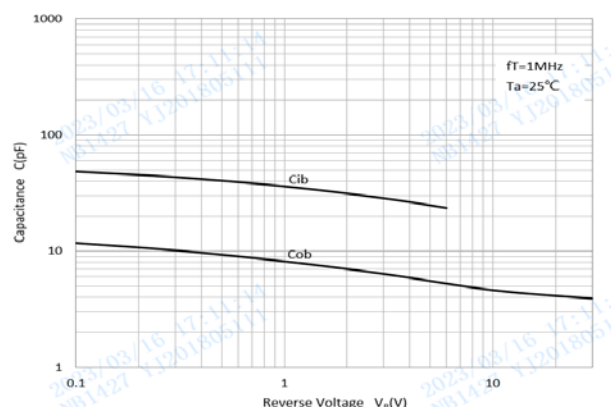
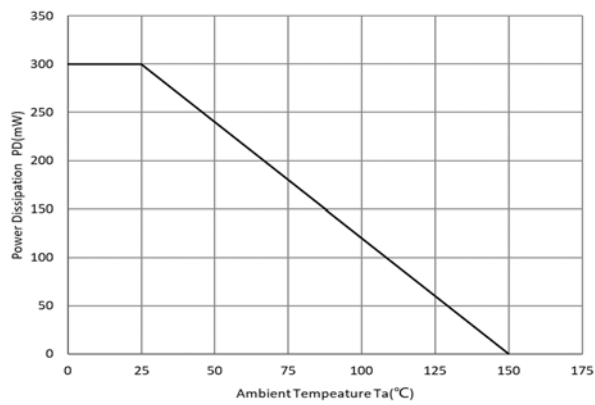
**■ Characteristics****Fig 1: Static Characteristics****Fig 2: DC Current Gain****Fig 3: Collector-Emitter Saturation Voltage****Fig 4: Base-Emitter Saturation Voltage****Fig 5: Base-Emitter On Voltage****Fig 6: C_{ob}/C_{ib}-V_{CB}/V_{EB}**



Fig 7: P_D -Ta Curve





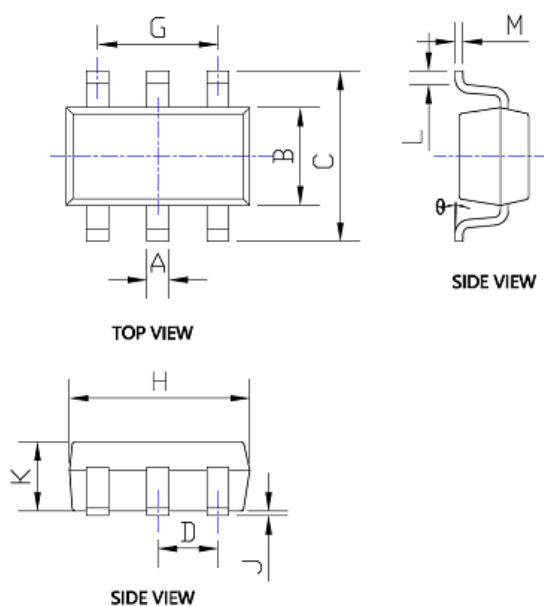
BC817DS

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■ Ordering Information

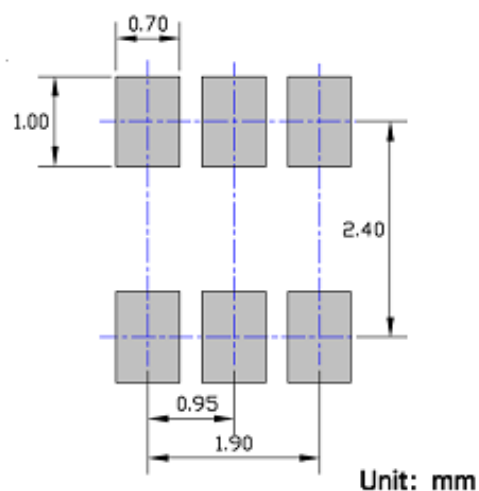
Preferred P/N	Packing Code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
BC817DS	F2	Approximate 0.009g	3000	30000	120000	7" reel

■ Outline Dimensions



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.012	0.020	0.300	0.500
B	0.059	0.067	1.500	1.700
C	0.104	0.116	2.650	2.950
D	0.037BSC		0.950BSC	
G	0.075BSC		1.900BSC	
H	0.111	0.119	2.820	3.020
J	0.000	0.004	0.000	0.100
K	0.041	0.045	1.050	1.150
L	0.012	0.024	0.300	0.600
M	0.004	0.008	0.100	0.200
θ	0°	8°	0°	8°

■ Suggested Pad Layout





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