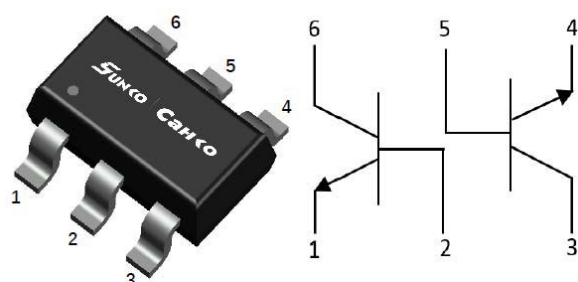


BC817DS

NPN+NPN Transistor



1: Emitter 4: Emitter
2: Base 5: Base
3: Collector 6: Collector

Features

- Moisture sensitivity level 1
- Halogen free and
- 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

■ 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

BC817DS

■ Characteristics

Fig 1: Static Characteristics

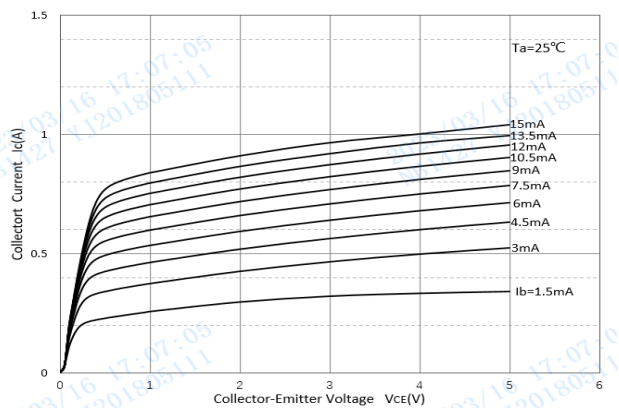


Fig 2: DC Current Gain

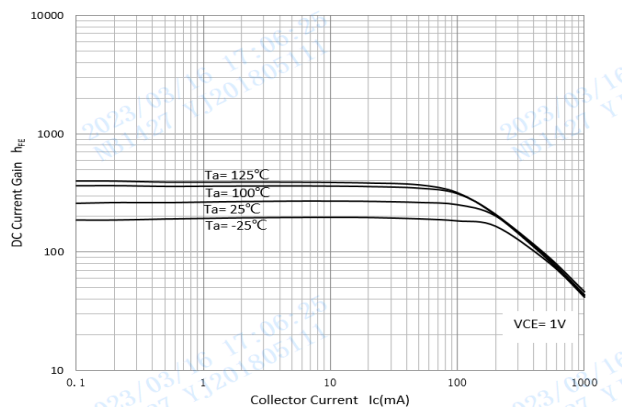


Fig 3: Collector-Emitter Saturation Voltage

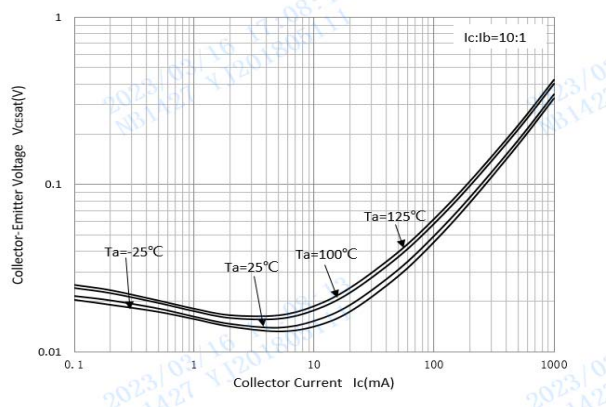


Fig 4: Base-Emitter Saturation Voltage

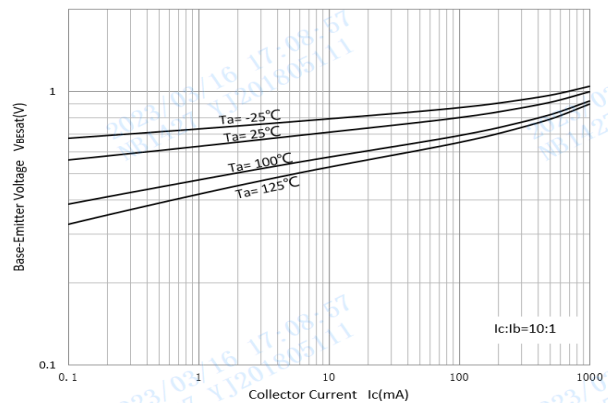


Fig 5: Base-Emitter On Voltage

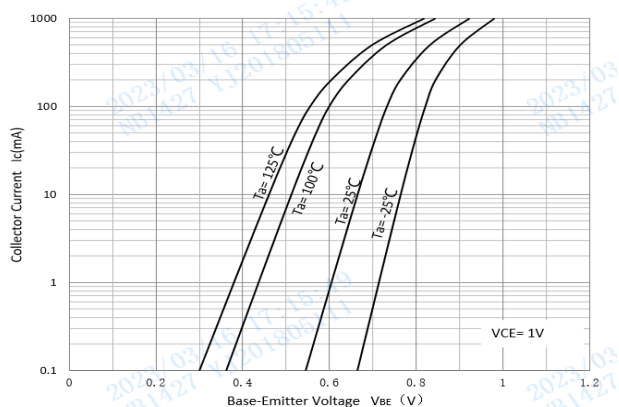
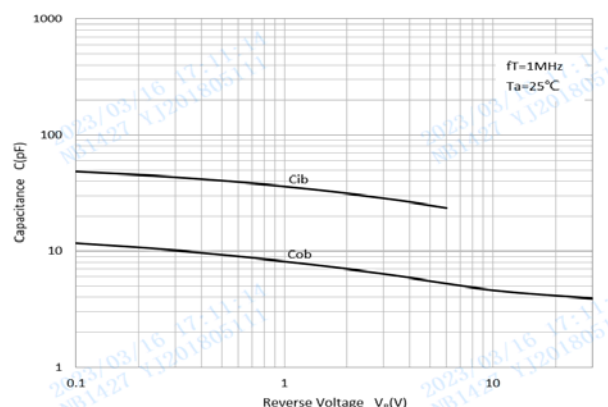
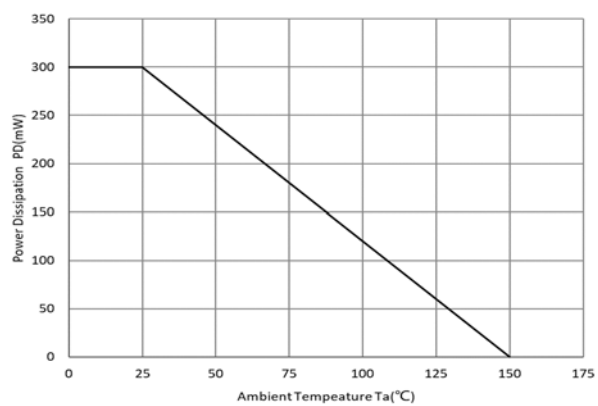


Fig 6: Cob/Cib- V_{CB}/V_{EB}



BC817DS

Fig 7: P_D -Ta Curve

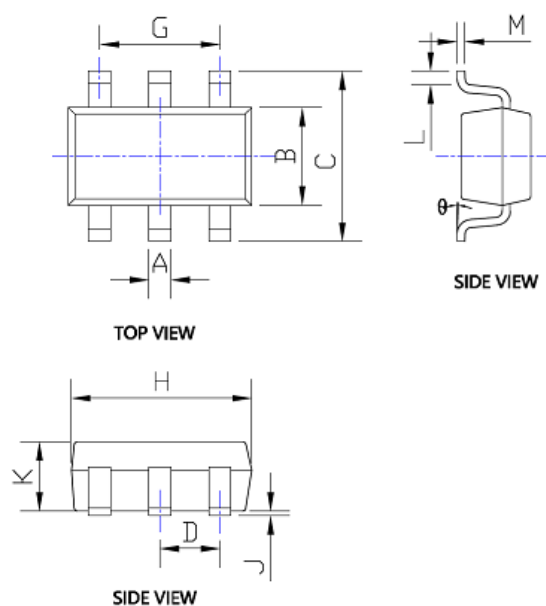


BC817DS

■ Ordering Information

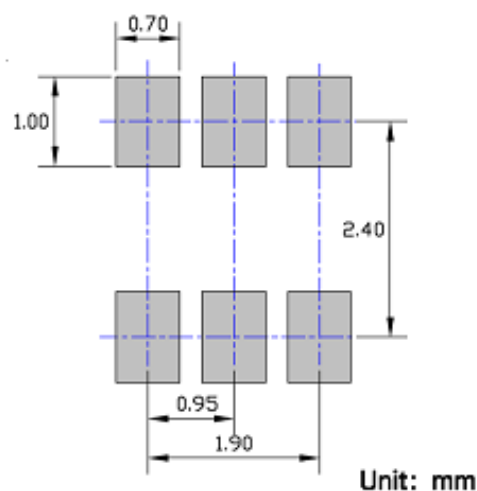
Prefered P/N	Packing Code	Unit weight(mg)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
BC817DS	F2	Approximate 15.6	3000	30000	120000	7" reel

■ 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



BC817DS

Disclaimer

The information presented in this document is for reference only. Shanghai Sunco Electronics Co., Ltd reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function, or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Russiansunco or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website [http:// www.russiansunco.com](http://www.russiansunco.com) , or consult your nearest Russiansunco's sales office for further assistance.