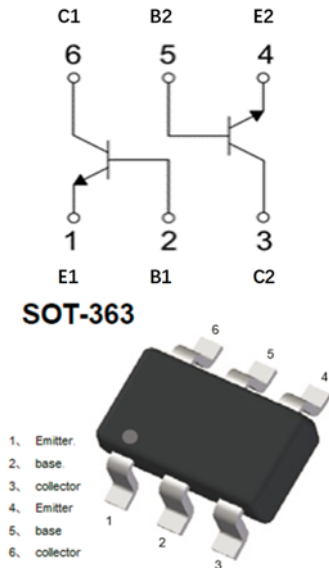


Dual NPN Small Signal Transistor



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-363
- **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				6Ct
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	$I_E=1\mu\text{A}$, $I_C=0$	5
Collector current	I_C	mA		500
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



BC817BS

RoHS
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■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V _{(BR)CBO}	V	I _C =10μA, I _E =0	50		
Collector-emitter breakdown voltage	V _{(BR)CEO}	V	I _C =10mA, I _B =0	45		
Emitter-base breakdown voltage	V _{(BR)EBO}	V	I _E =1μA, I _C =0	5		
Collector cut-off current	I _{CBO}	μA	V _{CB} =45V			0.1
Emitter-base cutoff current	I _{EBO}	μA	V _{EB} =4V			0.1
DC current gain	h _{FE}		I _C =100mA, V _{CE} =1.0V	250		600
			I _C =500mA, V _{CE} =1.0V	40		
Collector-emitter saturation voltage	V _{CE(sat)}	V	I _C =500mA, I _B =50mA			0.7
Base-emitter saturation voltage	V _{BE(sat)}	V	I _C =500mA, I _B =50mA			1.2
Transition frequency	f _T	MHz	I _C =10mA, V _{CE} =5.0V, f=100MHz	100		
Collector-base output capacitance	C _{ob}	pF	V _{CB} =10V, I _E =0A, f=1MHz		10	

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R _{θJ-A} ⁽¹⁾	°C/W	417
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W	333

Note:

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



■ Characteristics

Fig 1: Static Characteristics

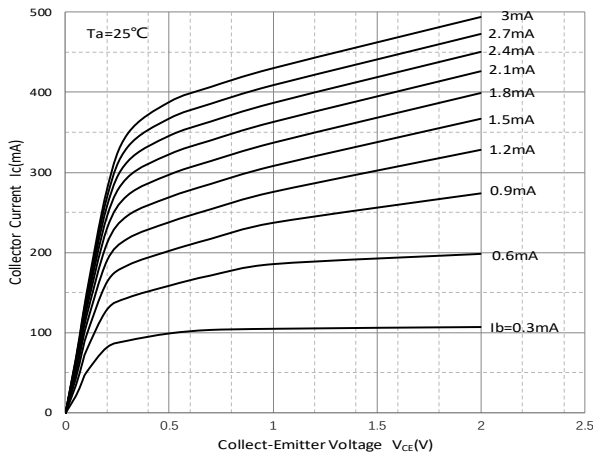


Fig 2: DC Current Gain Characteristics

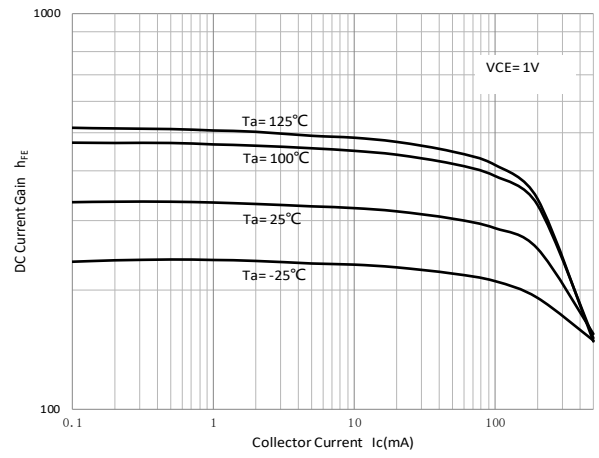


Fig 3: Collector-Emmitter Saturation Voltage

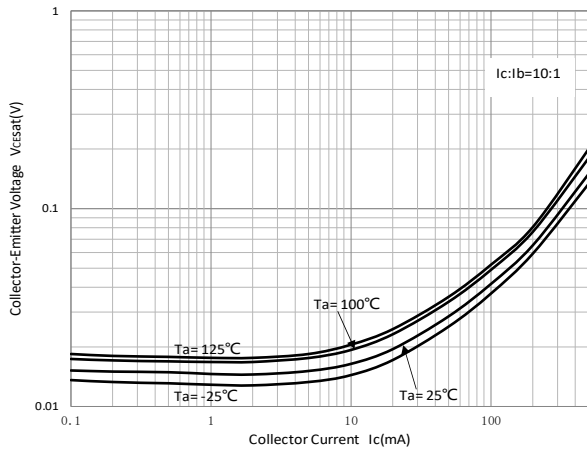


Fig 4: Base-Emmitter Saturation Voltage

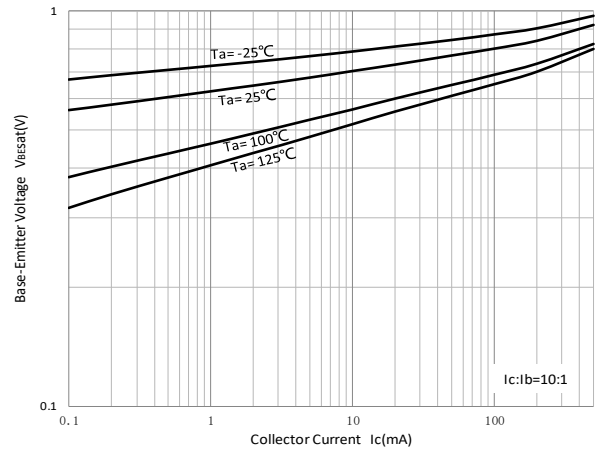


Fig 5: Base-emitter on voltage

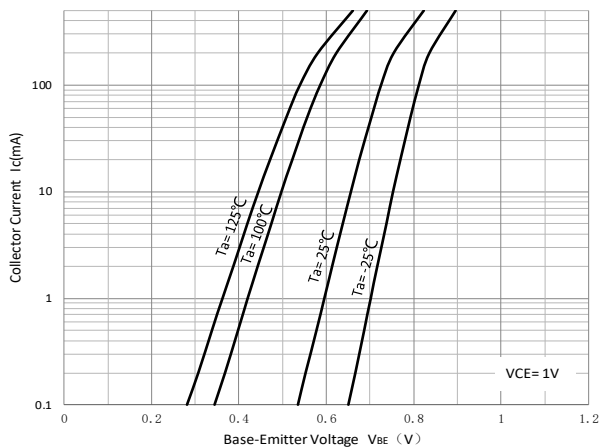


Fig 6: Cob/Cib-Vcb/Veb

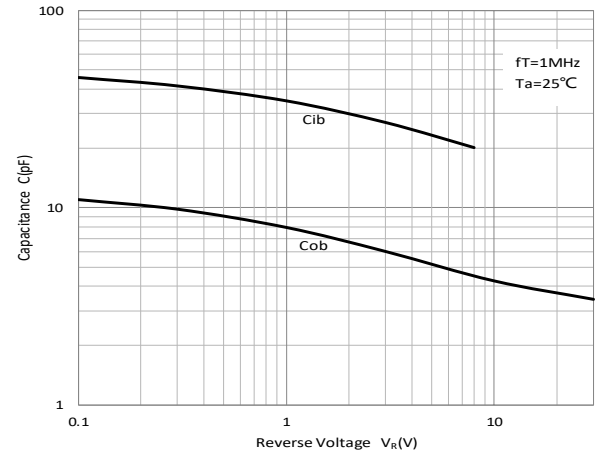
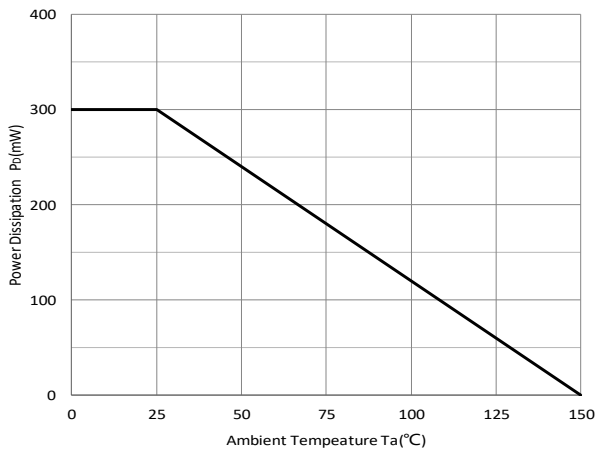




Fig 7: P_D - T_a Curve





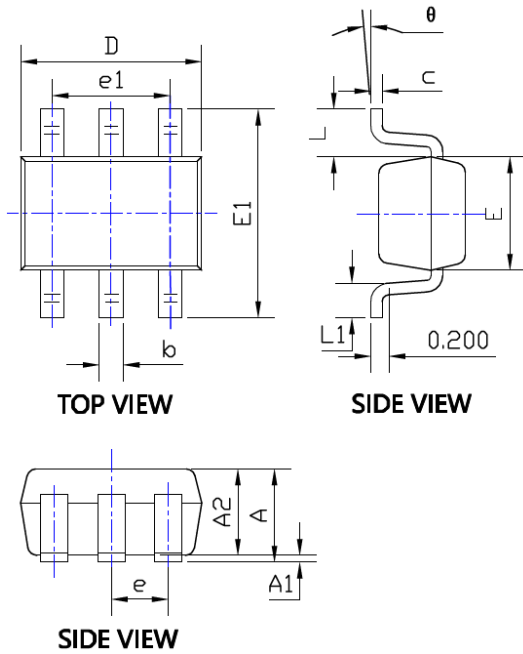
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Ordering Information

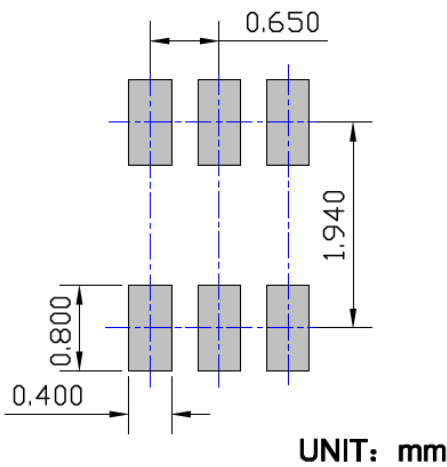
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
BC817BS	F2	Approximate 0.009	3000	30000	120000	7" reel
BC817BS	F3	Approximate 0.009	10000	/	210000	7" reel

Outline Dimensions



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.006	0.014	0.150	0.350
c	0.004	0.010	0.100	0.250
D	0.071	0.087	1.800	2.200
E	0.045	0.053	1.150	1.350
E1	0.085	0.096	2.150	2.450
e	0.026TYP		0.650TYP	
e1	0.047	0.055	1.200	1.400
L	0.021REF		0.525REF	
L1	0.010	0.018	0.260	0.460
θ	0°	8°	0°	8°

Suggested Pad Layout





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