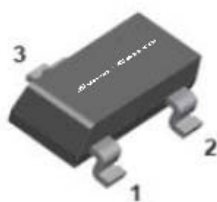
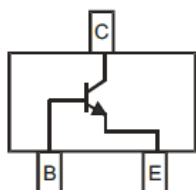


BC817-16WS THRU BC817-40WS

NPN General Purpose Amplifier



SOT-323S

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-323S
- **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			BC817-16WS	6A
			BC817-25WS	6B
			BC817-40WS	6C
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		200
Junction temperature	T_J	$^{\circ}\text{C}$		-55 to +150
Storage temperature	T_{STG}	$^{\circ}\text{C}$		-55 to +150

BC817-16WS THRU BC817-40WS

■ 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 =10uA, 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 =1uA, I _C =0		5		
Collector-base cut-off current	I _{CBO}	uA	V _{CB} =45V				0.1
Emitter-base cut-off current	I _{EBO}	uA	V _{EB} =4V				0.1
DC current gain	h _{FE1}		BC817-16WS	I _C =100mA, V _{CE} =1V	100		250
			BC817-25WS		160		400
			BC817-40WS		250		600
	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 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		

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R _{θJ-A} ⁽¹⁾	°C/W	625
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W	500

Note:

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

BC817-16WS THRU BC817-40WS

■ Characteristics

Fig 1: Static Characteristics

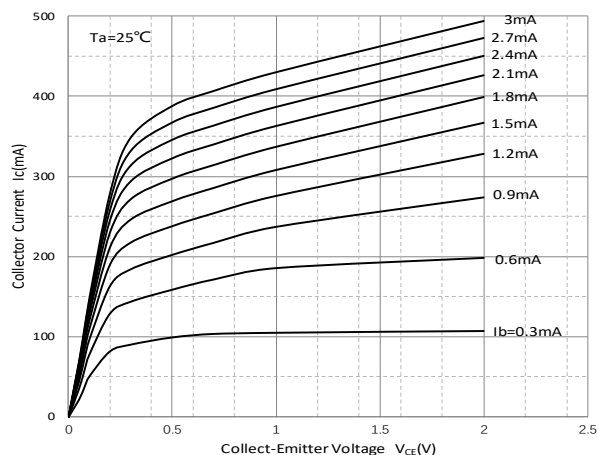


Fig 2: DC Current Gain

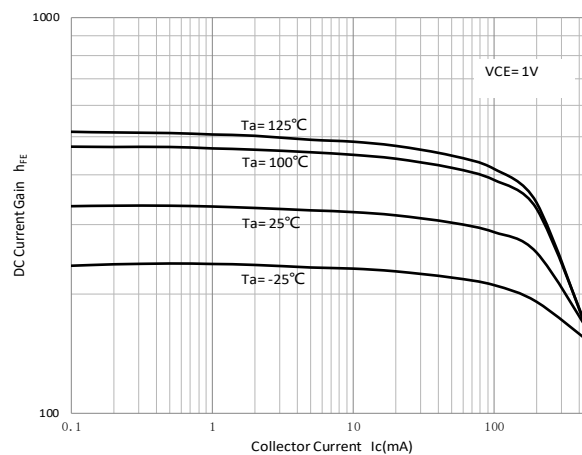


Fig 3: Collector-Emitter Saturation Voltage

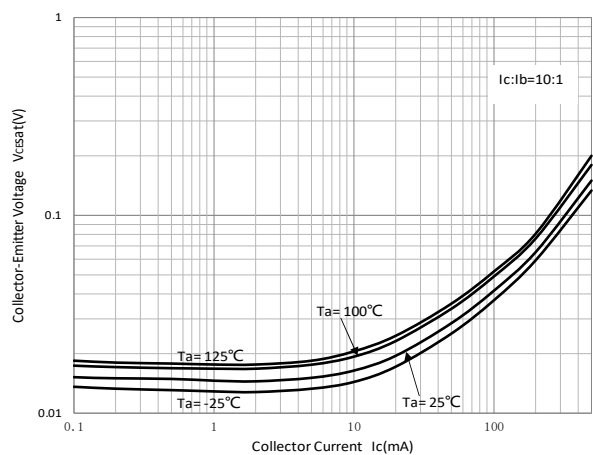


Fig 4: Base-Emitter Saturation Voltage

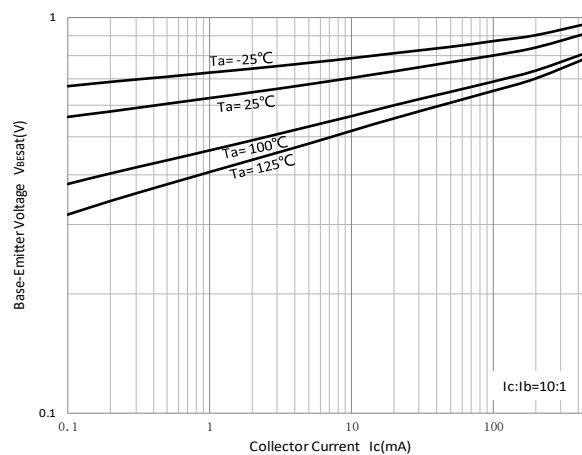


Fig 5: Base-Emitter On Voltage

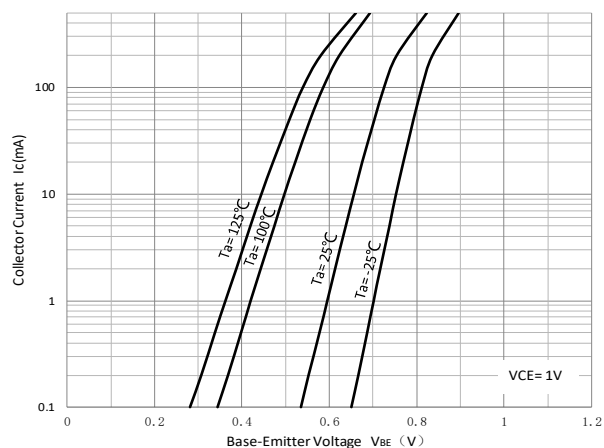
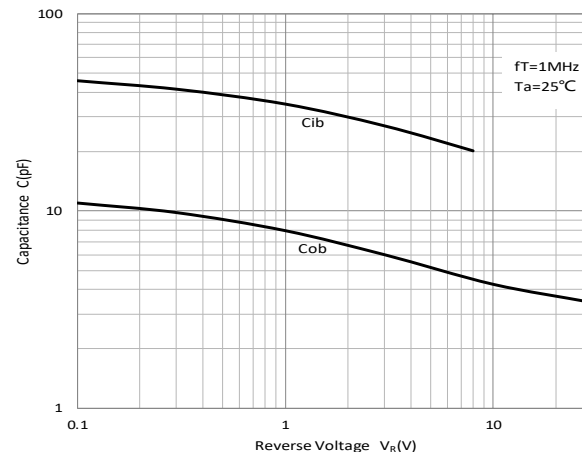
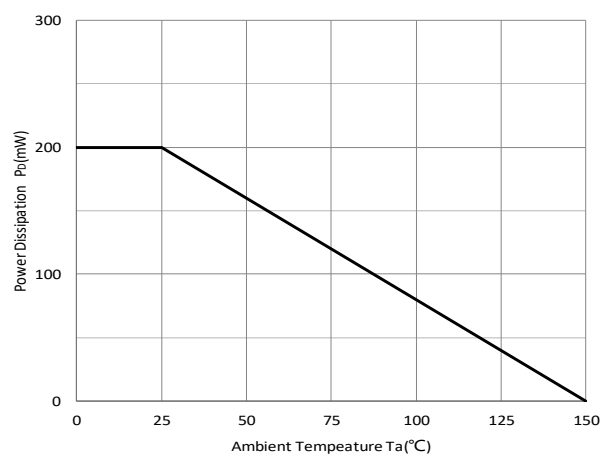


Fig 6: Cob/Cib- V_{CB}/V_{EB}



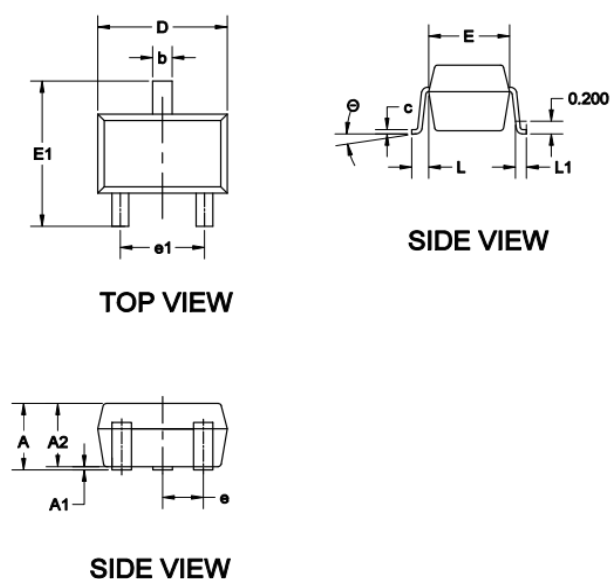
BC817-16WS THRU BC817-40WS**Fig 7: P_D - T_a Curve**

BC817-16WS THRU BC817-40WS

■ Ordering Information

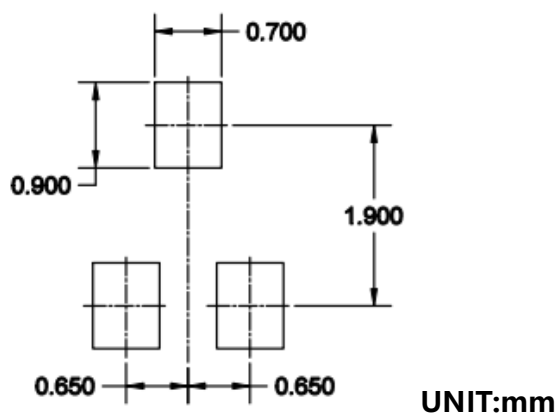
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
BC817-16WS THRU BC817-40WS	F2	Approximate 0.005	3000	30000	120000	7" reel

■ 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	0.016	0.150	0.400
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	0.078	0.087	2.000	2.200
e	0.026 TYP		0.650 TYP	
e1	0.047	0.055	1.200	1.400
L	0.021 REF		0.525 REF	
L1	0.010	0.018	0.260	0.460
theta	0°	8°	0°	8°

■ Suggested Pad Layout



BC817-16WS THRU BC817-40WS

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