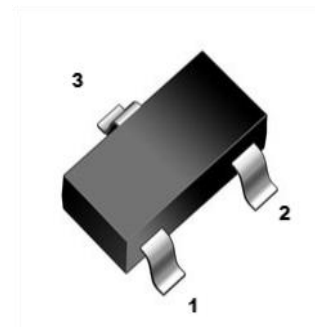




1. Features

- For General AF Applications
- High Collector Current
- High Current Gain
- Low CollectorEmitter Saturation Voltage
- Complementary types: BC807 (PNP)

SOT-23



1 base
2 emitter
3 collector

2. Mechanical Data

- Case:Molded Plastic,SOT-23 .
- Epoxy:UL 94V-0 rate flame retardant.
- Terminals:Plated Leads Solderable per MIL-STD-750,Method-2026.
- Mounting Position : Any.

3. Maximum Ratings

Electrical Characteristics Rating at 25°C ambient temperature unless otherwise specified.

Characteristic	Symbol	Value	Unit
CollectorBase Voltage	V_{CBO}	50	V
CollectorEmitter Voltage	V_{CEO}	45	V
EmitterBase Voltage	V_{EBO}	5	V
Collector Current	I_C	0.5	A
Collector Power Dissipation	P_C	300	mW
Junction Temperature	T_j	-55~+150	°C
Storage Temperature	T_{stg}	-55~+150	°C

**4. Electrical Characteristics ($T_a=25^{\circ}\text{C}$ unless otherwise noted)**

Characteristics	Symbol	Condition	Min	TYP	Max	Unit
Collectorbase breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	50			V
Collectoremitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10\text{mA}, I_B=0$	45			V
Emitterbase breakdown voltage	$V_{(BR)EBO}$	$I_E=1\mu\text{A}, I_C=0$	5			V
Collector cutoff current	I_{CBO}	$V_{CB}=45\text{V}, I_E=0$			100	nA
Emitter cutoff current	I_{EBO}	$V_{EB}=4\text{V}, I_E=0$			100	nA
DC current gain	h_{FE1}	$V_{CE}=1\text{V}, I_C=100\text{mA}$	100		600	
	h_{FE2}	$V_{CE}=1\text{V}, I_C=500\text{mA}$	40			
Collectoremitter saturation voltage	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			0.7	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			1.2	V
Baseemitter voltage	$V_{BE(ON)}$	$V_{CE}=1\text{V}, I_C=500\text{mA}$			1.2	V
Transition frequency	f_T	$V_{CE}=5\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	100			MHz
Collector capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		10		pF

CLASSIFICATION of h_{FE1}

Rank	BC817-16	BC817-25	BC817-40
Range	100-250	160-400	250-600
Marking	6A	6B	6C



5. Rating And Characteristic Curves

Fig.1 Static Characteristic

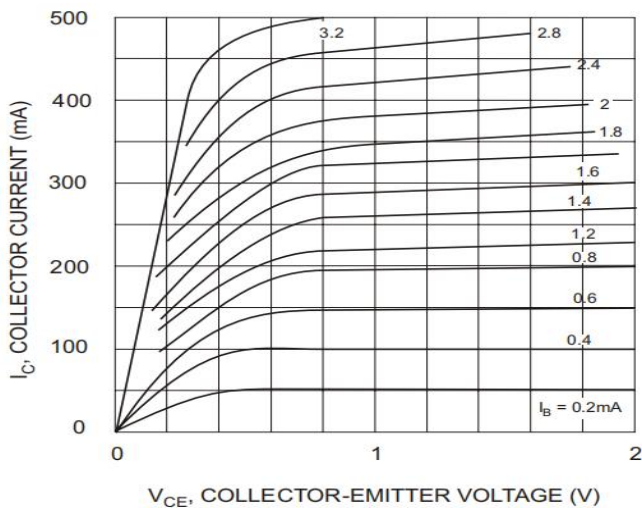


Fig.2 hFE - IC

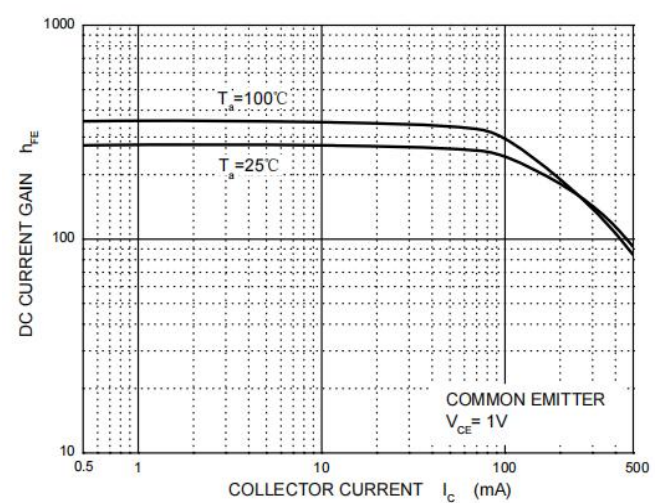


Fig.3 VBEsat - IC

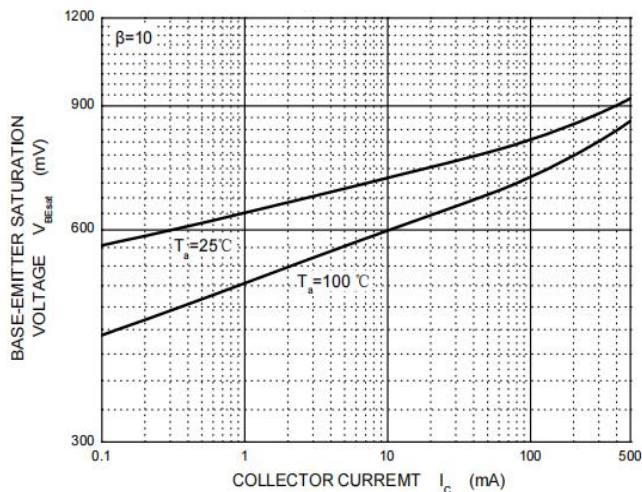


Fig.4 VCEsat - IC

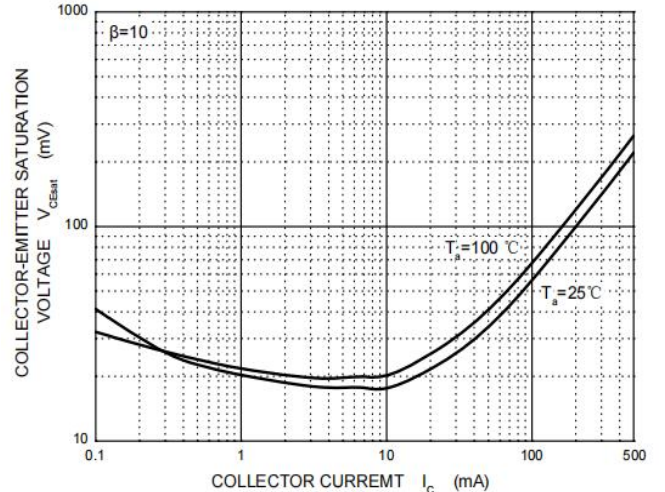


Fig.5 Gain-Bandwidth Product vs Collector Current

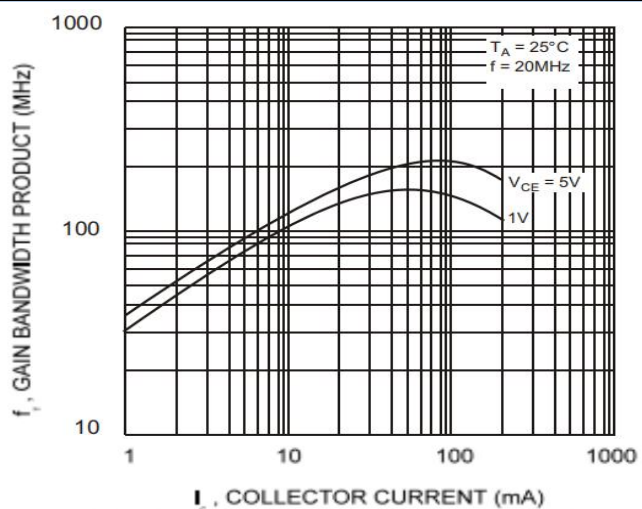
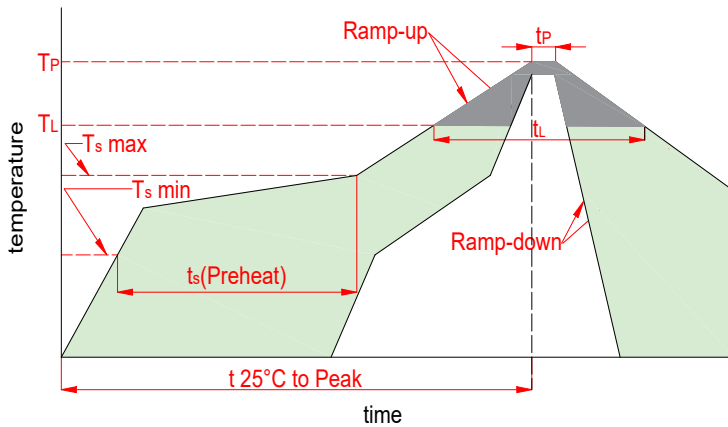


Fig.6 Power Derating Curve



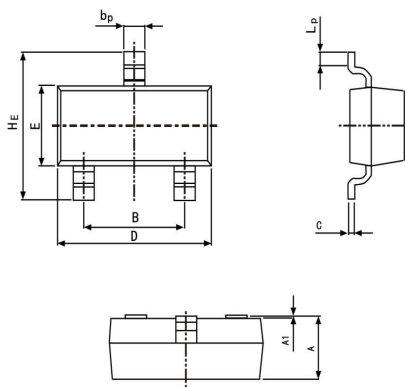


6. Soldering Parameters



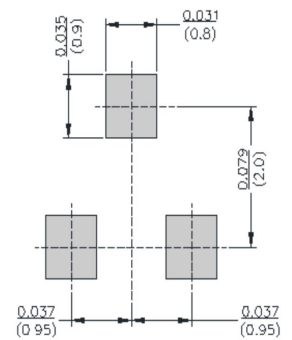
Reflow Condition		Lead-free
Pre Heat	Temp. min(T_s (min))	150°C
	Temp. max(T_s (min))	200°C
	Time(min to max)(t_s)	60~120s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3°C/s max
T_s (max) to T_L -Ramp-up Rate		3°C/s max
Reflow	Temp.(T_L)(Liquidus)	217°C
	Temp.(t_L)(Liquidus)	60~150s
Peak Temp.(T_P)		260 ^{+0/-5} °C
Time within actual peak Temp.(t_p)		30s max
Ramp-down Rate		6°C/s max
Time 25°C to peak Tempe.(T_p)		8 minutes max
Do not exceed		260°C

7. Dimensions

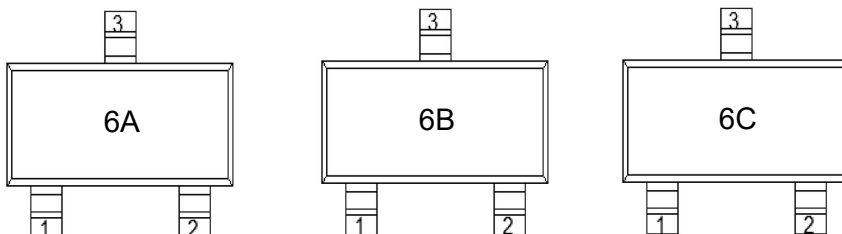


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.035	0.045	0.90	1.15
B	0.070	0.081	1.78	2.05
bp	0.012	0.020	0.30	0.51
C	0.003	0.007	0.08	0.18
D	0.110	0.118	2.80	3.00
E	0.047	0.055	1.20	1.40
HE	0.087	0.110	2.20	2.80
A1	0.000	0.004	0.00	0.10
LP	0.008	0.020	0.20	0.50

Mounting PAD Layout



8. Part Marking System



9. Package Information

Package	Part Number	Marking Code	Tape Width(mm)	Quantity(pcs)
SOT-23	BC817-16	6A	8	3000
SOT-23	BC817-25	6B	8	3000
SOT-23	BC817-40	6C	8	3000



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