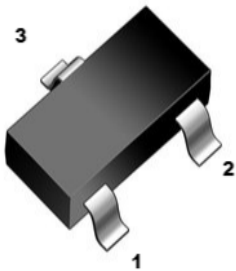




1. Features

- Ideally suited for automatic insertion
- Epitaxial planar die construction
- Complementary to BC817W

SOT-323



1 base
2 emitter
3 collector

2. Mechanical Data

- Case:Molded Plastic,SOT-323 .
- 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℃ ambient temperature unless otherwise specified.

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-45	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-0.5	A
Collector Power Dissipation	P_C	200	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	417	℃/W
Junction Temperature	T_j	-55~+150	℃
Storage Temperature	T_{stg}	-55~+150	℃

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

Characteristics	Symbol	Condition	Min	TYP	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}, I_E=0$	-50	-	-	V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-10\text{mA}, I_B=0$	-45	-	-	V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-1\mu\text{A}, I_C=0$	-5	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB}=-20\text{V}, I_E=0$	-	-	-100	nA
Collector cut-off current	I_{CEO}	$V_{CE}=-20\text{V}, I_E=0$	-	-	-200	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=-5\text{V}, I_E=0$	-	-	-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	-	-	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-500\text{mA}, I_B=-50\text{mA}$	-	-	-0.7	V
Base-emitter voltage	$V_{BE(ON)}$	$V_{CE}=-1\text{V}, I_C=-500\text{mA}$	-	-	-1.2	V
Transition frequency	f_T	$V_{CE}=-5\text{V}, I_C=-10\text{mA}, f=100\text{MHz}$	80	-	-	MHz
Collector capacitance	C_{ob}	$V_{CB}=-10\text{V}, f=1\text{MHz}$	-	-	10	pF

CLASSIFICATION of hFE (1)

Rank	BC807-16W	BC807-25W	BC807-40W
Range	100-250	160-400	250-600
Marking	5A	5B	5C



5. Rating And Characteristic Curves

Fig.1 Static Characteristic

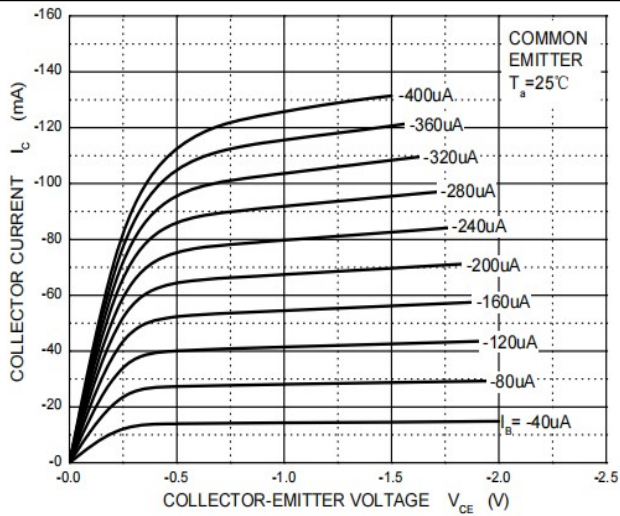


Fig.2 $h_{FE} - I_C$

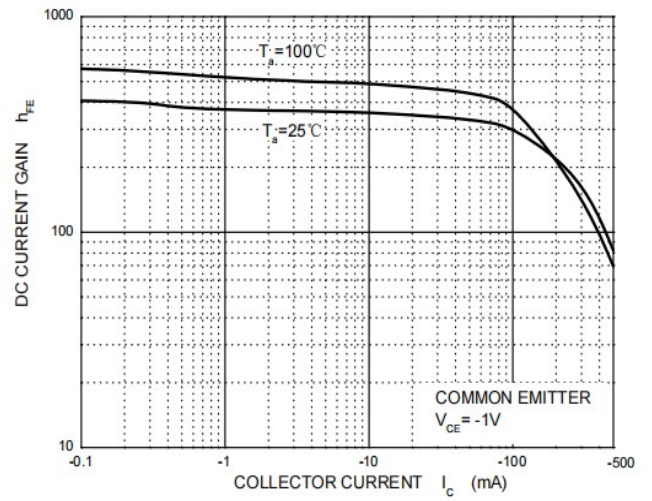


Fig.3 $V_{BEsat} - I_C$

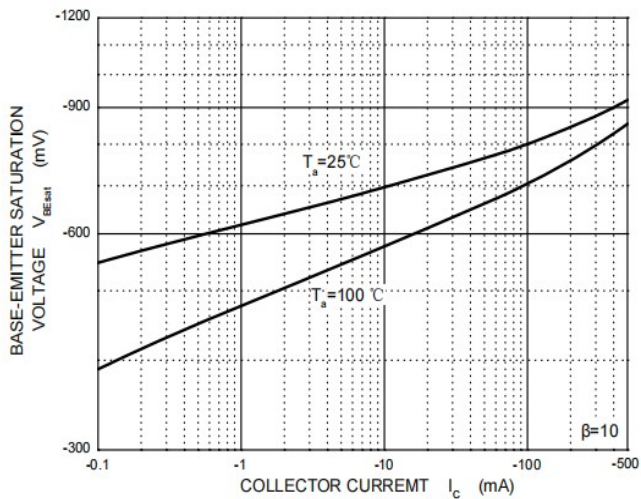


Fig.4 $V_{CEsat} - I_C$

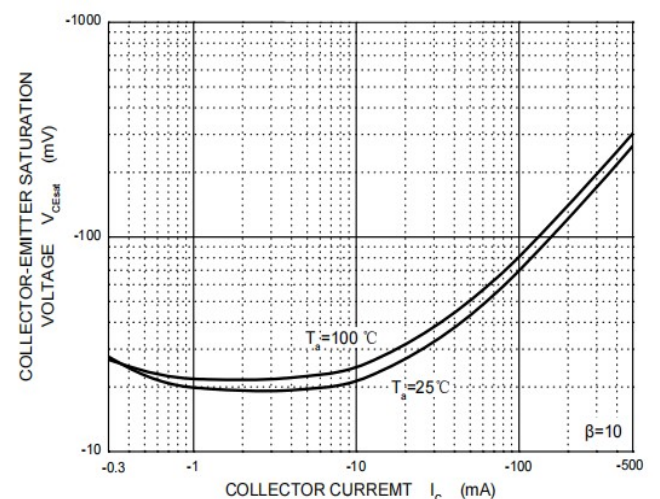


Fig.5 $C_{ob} / C_{ib} - V_{CB} / V_{EB}$

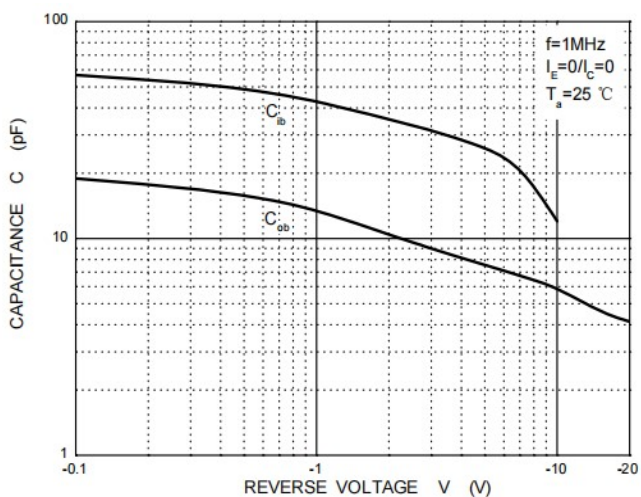
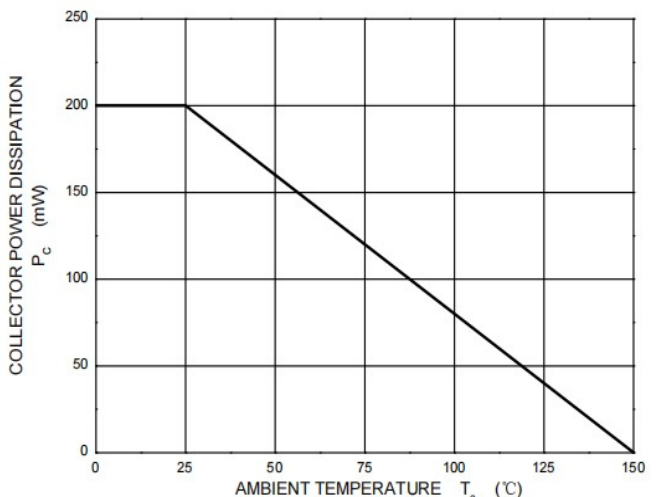
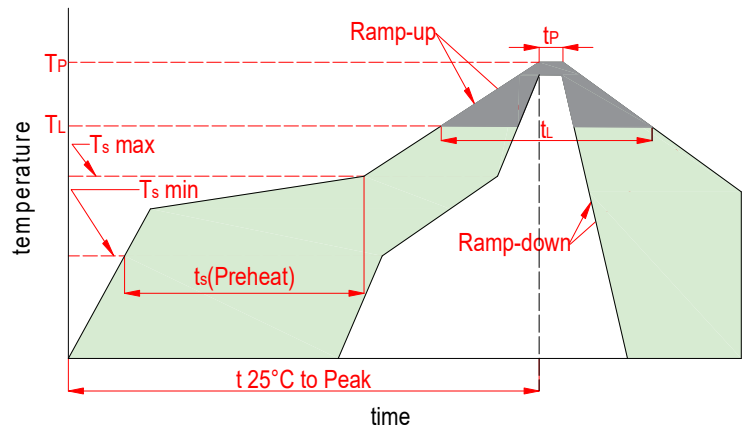


Fig.6 $P_C - T_a$



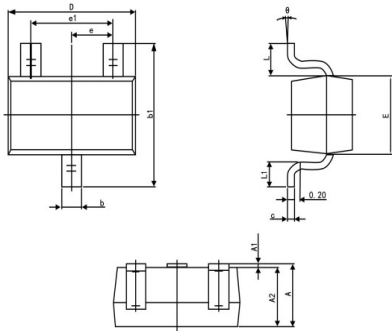


6. Soldering Parameters



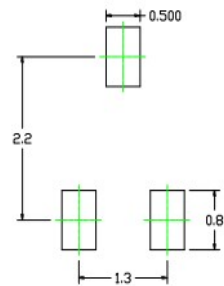
Reflow Condition		Lead-free
Pre Heat	Temp. min(T_s (min))	150℃
	Temp. max(T_s (min))	200℃
	Time(min to max)(t_s)	60~120s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3℃/s max
T_s (max) to T_L -Ramp-up Rate		3℃/s max
Reflow	Temp.(T_L)(Liquidus)	217℃
	Temp.(t_L)(Liquidus)	60~150s
Peak Temp.(T_P)		260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

7. Dimensions

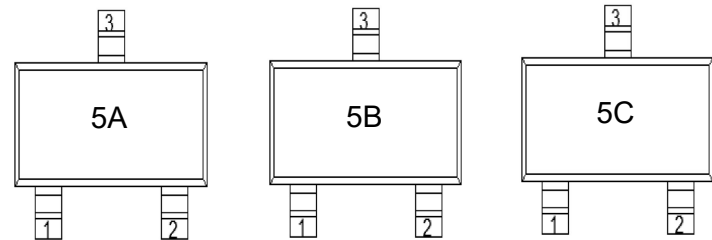


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.008	0.016	0.200	0.400
c	0.003	0.006	0.080	0.150
D	0.079	0.087	2.000	2.200
E	0.045	0.053	1.150	1.350
E1	0.085	0.096	2.150	2.450
e1	0.047	0.055	1.200	1.400
L1	0.010	0.018	0.260	0.460

Mounting PAD Layout



8. Part Marking System



9. Package Information

Package	Part Number	Marking Code	Tape Width(mm)	Quantity(pcs)
SOT-323	BC807-16W	5A	8	3000
SOT-323	BC807-25W	5B	8	3000
SOT-323	BC807-40W	5C	8	3000



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