

FEATURES

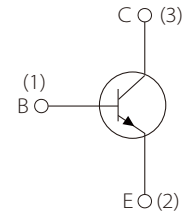
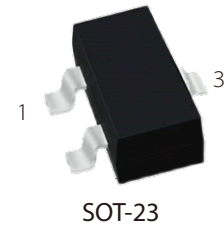
- | For general AF applications

- | High collector current

- | High current gain

- | Low collector-emitter saturation voltage

- | Complementary types: BC807 (PNP)



Schematic Symbol

MECHANICAL DATA

- | SOT-23 small outline plastic package

- | Epoxy UL: 94V-0

- | Mounting position: Any

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS (T_A = 25°C)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	50	V
Collector-Emitter Voltage	V _{CEO}	45	
Emitter-Base Voltage	V _{EBO}	5	
Collector Current	I _C	500	mA
Collector Power Dissipation	P _C	300	mW
Thermal Resistance From Junction To Ambient	R _{θJA}	417	°C/W
Operation Junction and Storage Temperature Range	T _J , T _{STG}	-55~+150	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C)

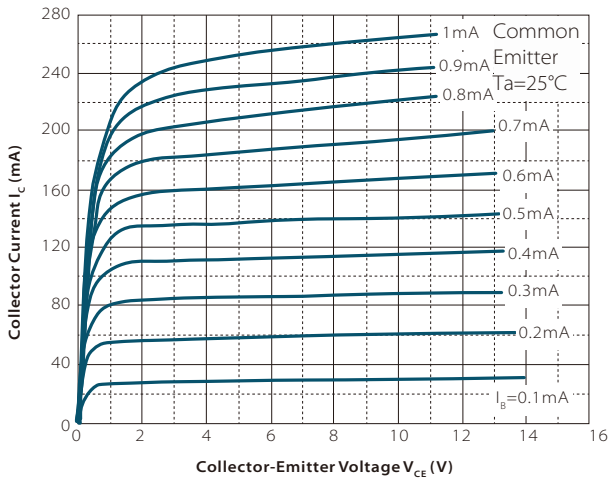
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	V _{CBO}	I _C =10μA, I _E =0	50			V
Collector-emitter breakdown voltage	V _{CEO}	I _C =1mA, I _B =0	45			
Emitter-base breakdown voltage	V _{EBO}	I _E =10μA, I _C =0	5			
Collector cut-off current	I _{CBO}	V _{CB} =45V, I _E =0			0.1	μA
Emitter cut-off current	I _{EBO}	V _{EB} =4V, I _C =0			0.1	
DC current gain	h _{FE(1)}	V _{CE} =1V, I _C =100mA		100	600	
	h _{FE(2)}	V _{CE} =1V, I _C =500mA		40		
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =500mA, I _B =50mA			0.7	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C =500mA, I _B =50mA			1.2	
Base-emitter voltage	V _{BE}	V _{CE} =1V, I _C =500mA			1.2	
Collector capacitance	C _{ob}	V _{CB} =10V, f=1MHz		10		pF
Transition frequency	f _T	V _{CE} =5V, I _C =10mA, f=100MHz	100			MHz

CLASSIFICATION OF H_{FE(1)}

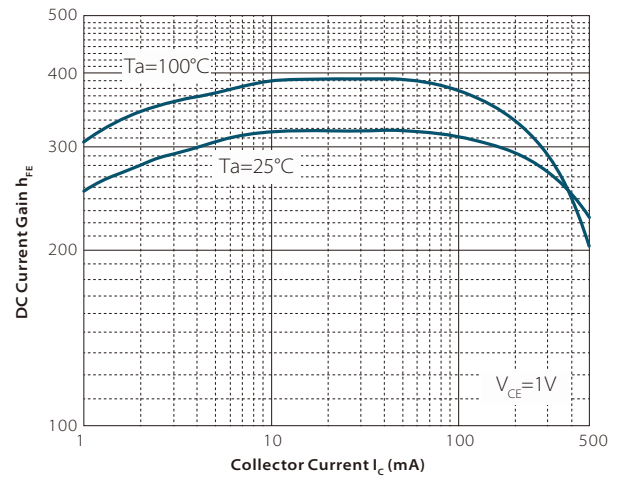
Rank	BC817-16	BC817-25	BC817-40
Range	100-250	160-400	250-600
Marking	6A	6B	6C

TYPICAL CHARACTERISTICS

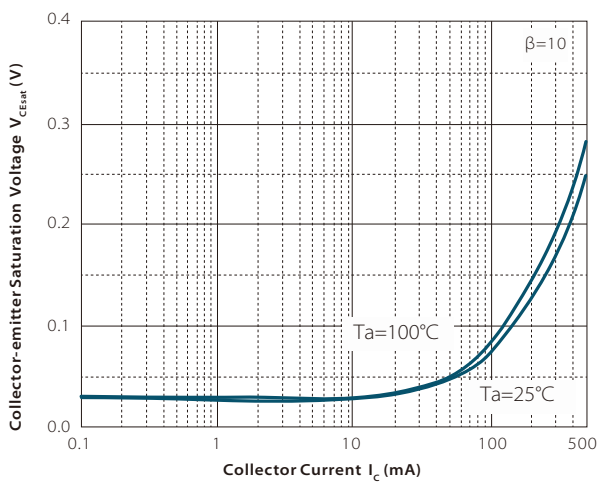
Static Characteristic



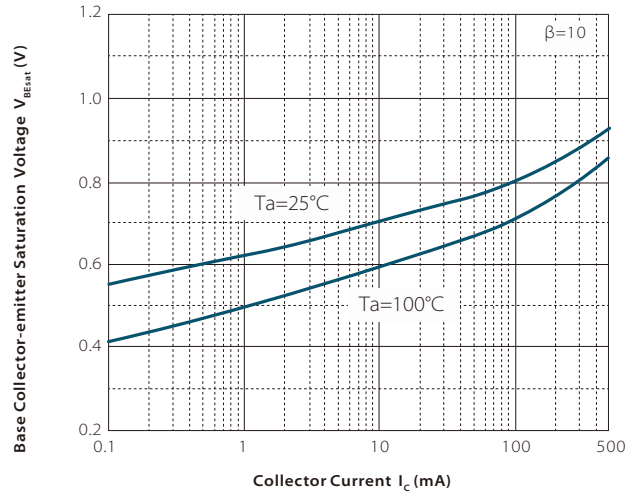
h_{FE} — I_C

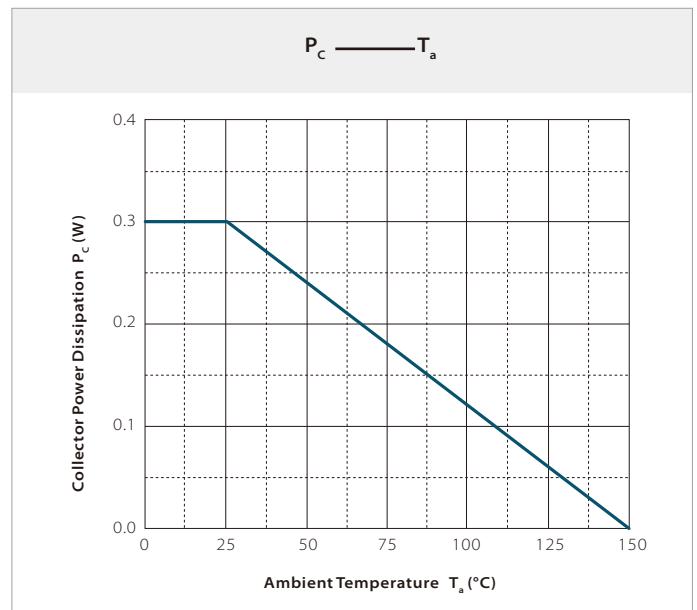
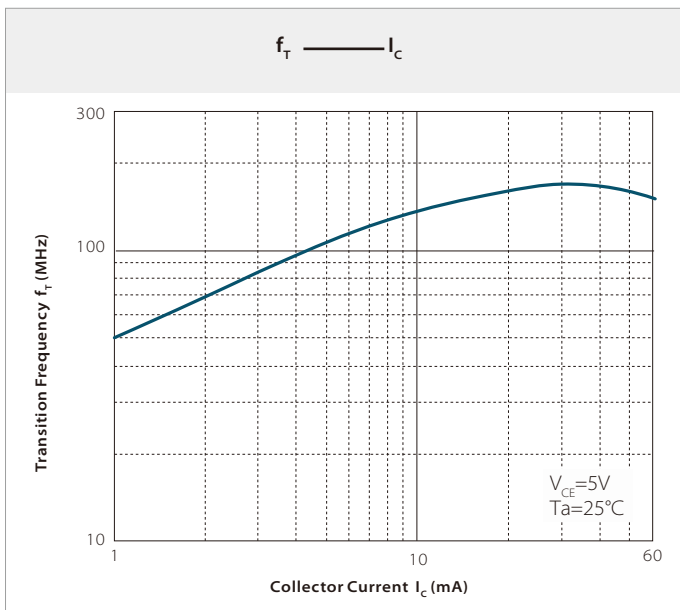
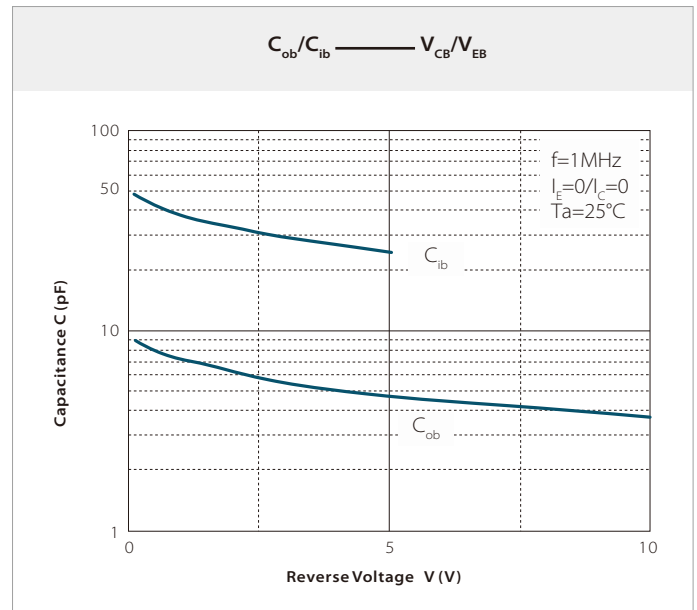
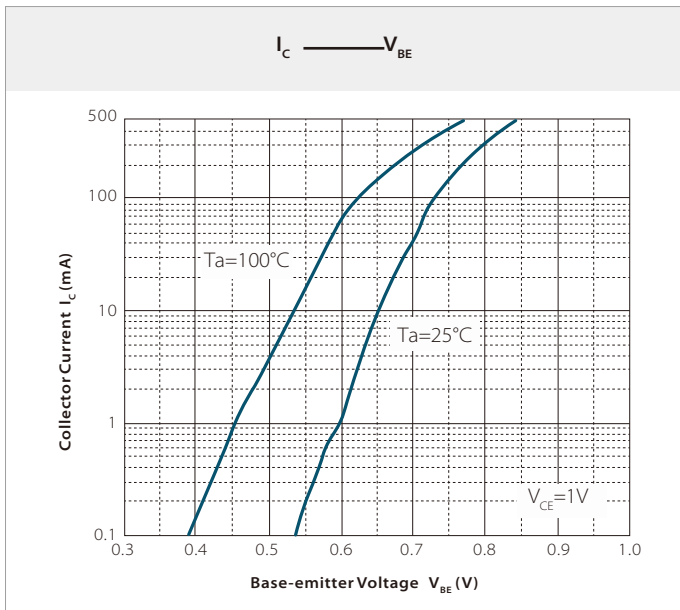


$V_{CE\text{sat}}$ — I_C



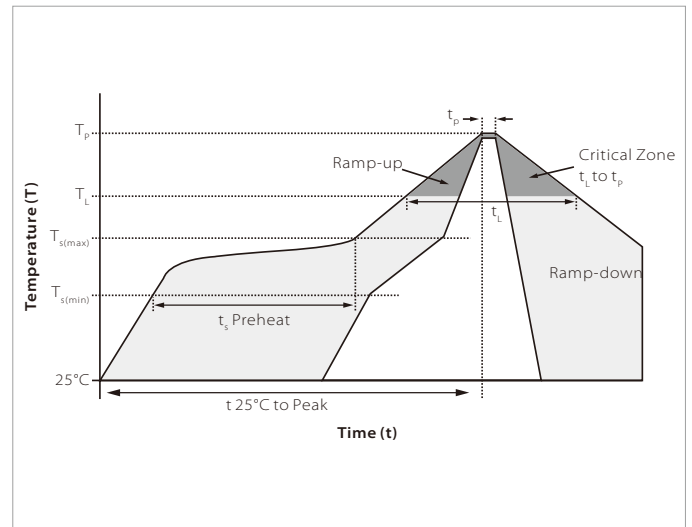
$V_{BE\text{sat}}$ — I_C



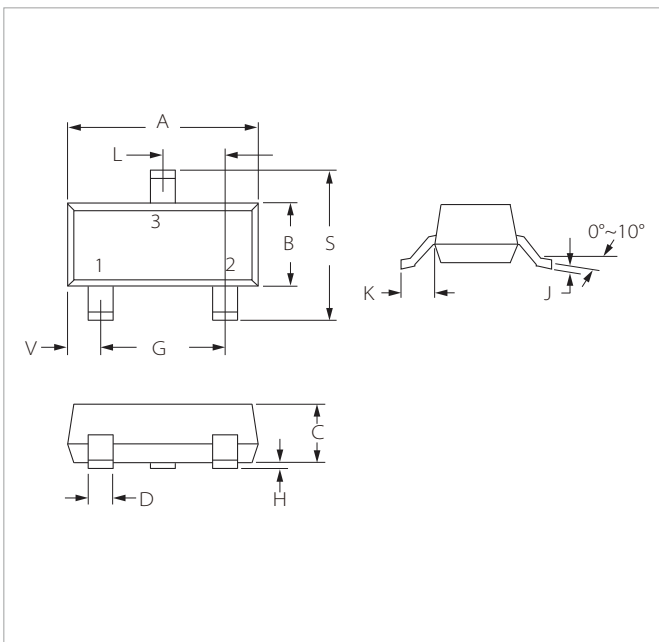


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C

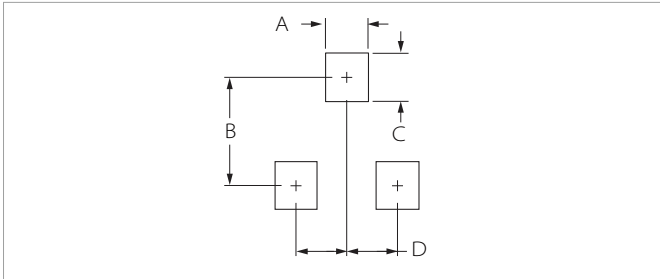


SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.04	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.89	1.11	0.035	0.044
D	0.37	0.50	0.015	0.020
G	1.78	2.04	0.070	0.081
H	0.01	0.100	0.001	0.004
J	0.085	0.180	0.003	0.007
K	0.35	0.69	0.014	0.029
L	0.89	1.02	0.035	0.040
S	2.10	2.64	0.083	0.104
V	0.45	0.60	0.018	0.024

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
BC817	SOT-23	3000PCS	7"

To find your local partner within Semiwell's website : www.semiwell.com

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