

FEATURES

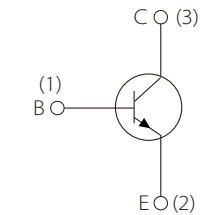
- | For general AF applications

- | 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)

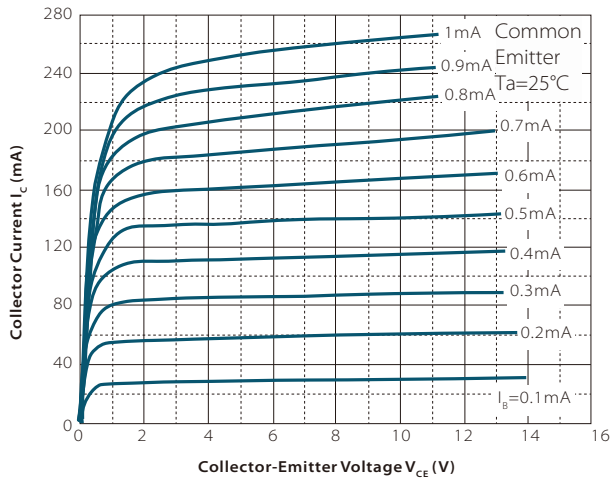
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	V _{CBO}	I _C =10uA, I _E =0	50			V
Collector-emitter breakdown voltage	V _{CEO}	I _C =1mA, I _B =0	45			
Emitter-base breakdown voltage	V _{EBO}	I _E =10uA, I _C =0	5			
Collector cut-off current	I _{CBO}	V _{CB} =45V, I _E =0			0.1	uA
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)}

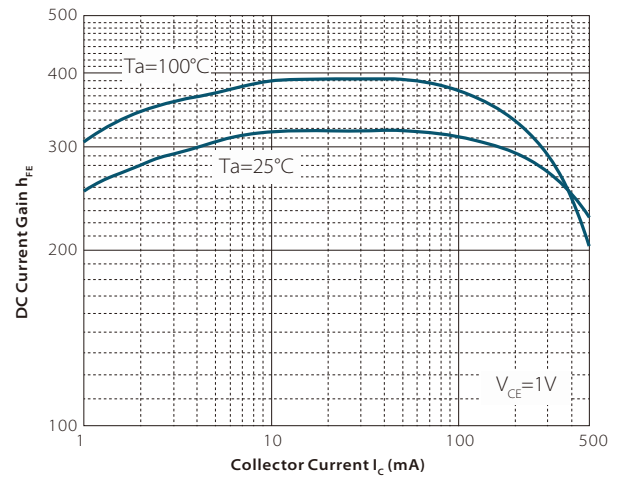
Rank	BC817-16	BC817-25	BC817-40
Range	100-250	160-400	250-600
Marking	6A	6B	6C

TYPICAL CHARACTERISTICS

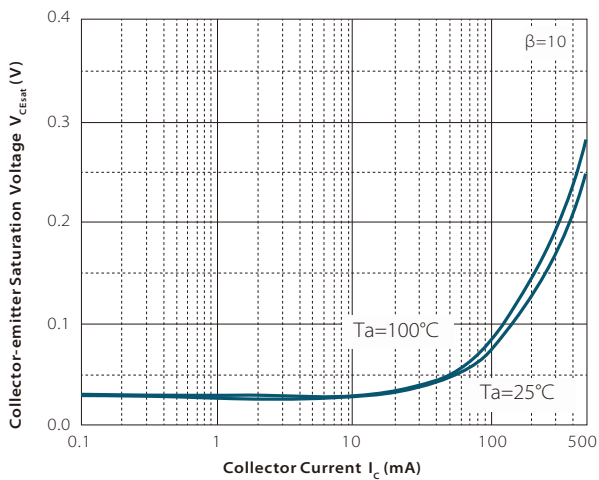
Static Characteristic



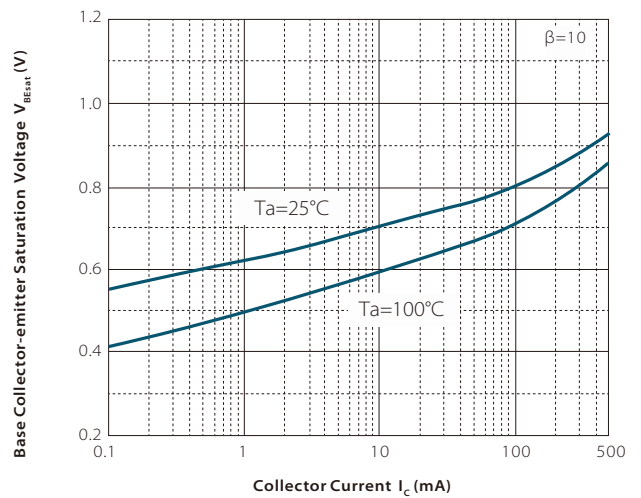
h_{FE} — I_C

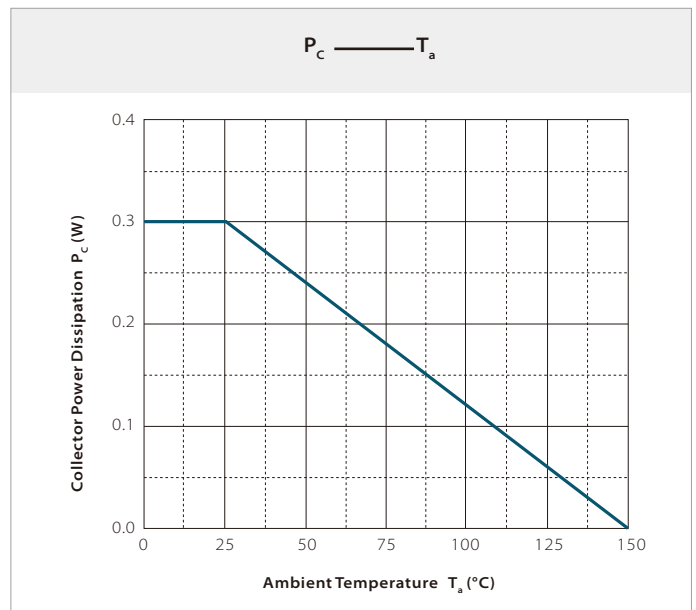
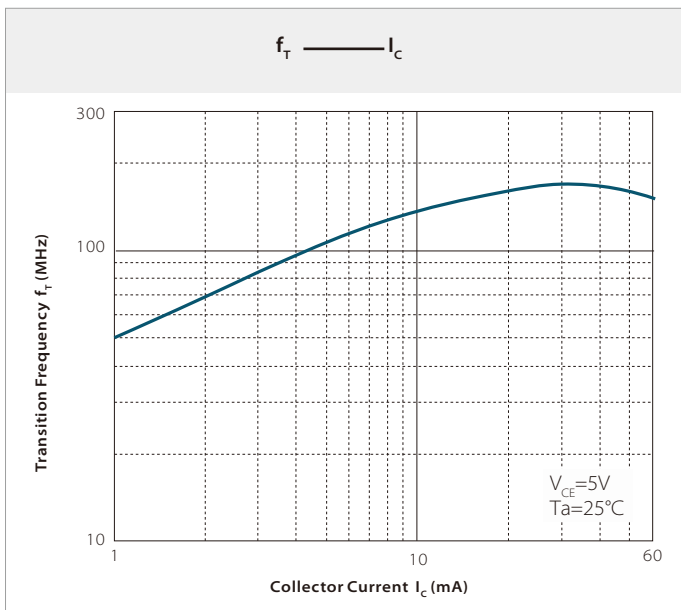
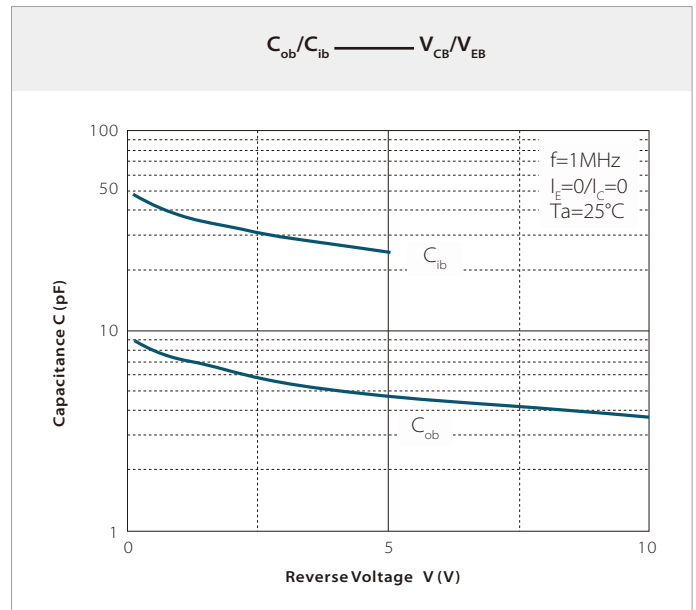
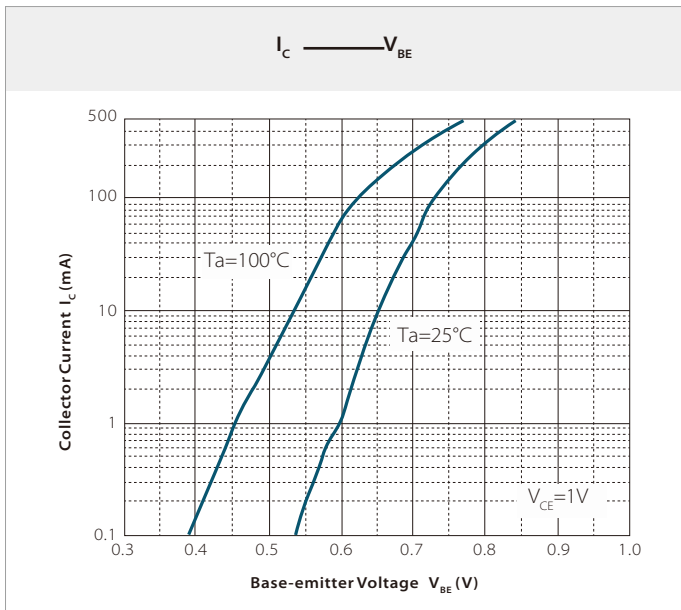


$V_{CE\text{sat}}$ — I_C



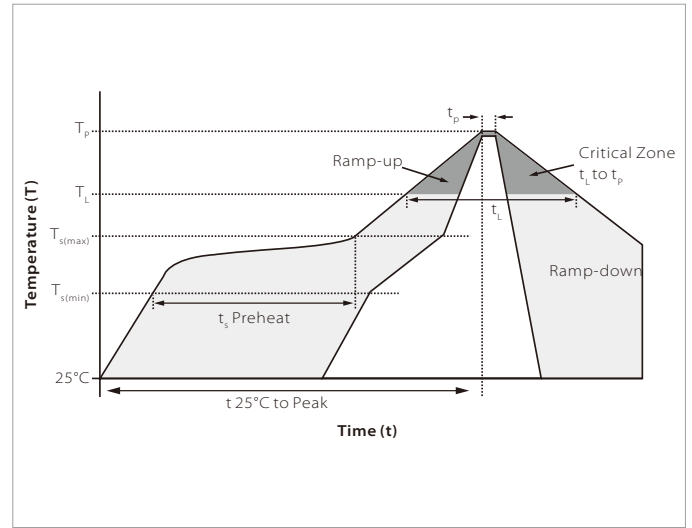
$V_{BE\text{sat}}$ — I_C



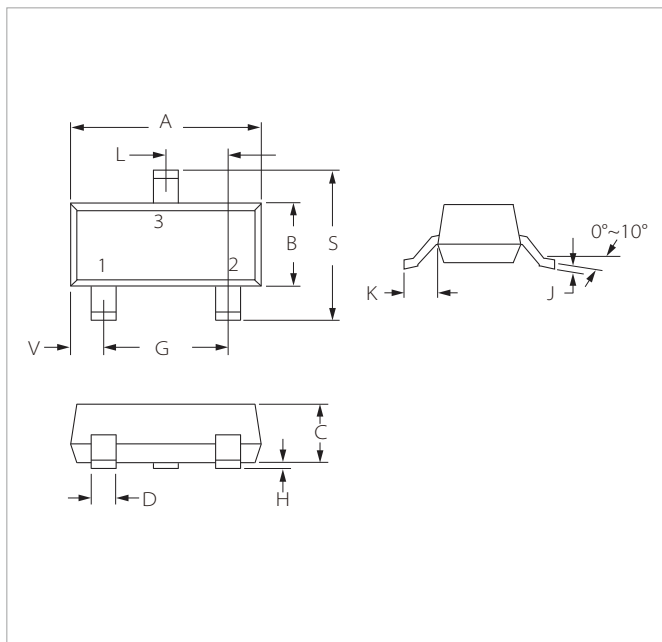


SOLDERING PARAMETERS

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

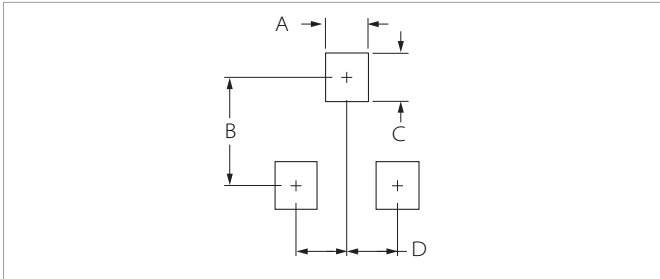


SOT-23 PACKAGE INFORMATION



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.cn

© 2023 Semiwell Microelectronics Co.,Ltd.

The content of this document has been carefully checked and understood. However, neither Semiwell nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiwell does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiwell. Latest publications and a complete disclaimer can be downloaded from the Semiwell website. All trademarks recognized.