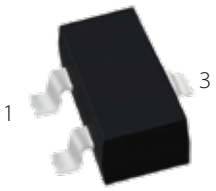
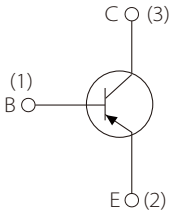
FEATURES

- Ldeally suited for automatic insertion
- Epitaxial planar die construction
- Complementary NPN type available(BC817)



SOT-23



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	BC807	V_{CBO}	-50	V
	BC808		-30	
Collector-Emitter Voltage	BC807	V_{CEO}	-45	V
	BC808		-25	
Emitter-Base Voltage		V_{EBO}	-5	V
Collector Current		I_C	-0.5	A
Collector Power Dissipation		P_C	0.3	W
Junction Temperature		T_J	150	℃
Storage Temperature		T_{STG}	-55~+150	℃

ELECTRICAL CHARACTERISTICS (T_A=25°C)

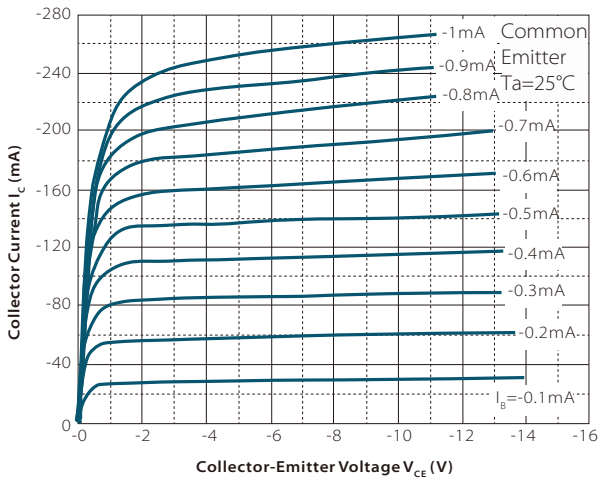
Parameter		Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	BC807	V_{CBO}	I_C=-10uA,I_E=0	-50			V
	BC808			-30			
Collector-emitter breakdown voltage	BC807	V_{CEO}	I_C=-10mA,I_B=0	-45			V
	BC808			-25			
Emitter-base breakdown voltage		V_{EBO}	I_E=-1uA,I_C=0	-5			V
Collector cut-off current		I_{CBO}	V_{CB}= -45V, I_E=0			-0.1	uA
Collector cut-off current		I_{CEO}	V_{CE}=-40V, I_B=0			-0.2	uA
Emitter cut-off current		I_{EBO}	V_{EB}=-4V, I_C=0			-0.1	uA
DC current gain	BC807-16,BC808-16	$h_{FE(1)}$	V_{CE}=-1V, I_C=-100mA	100		250	
	BC808-25,BC808-25			160		400	
	BC807-40,BC808-40			250		600	
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	V
Transition frequency		f_T	V_{CE}=-5V, I_C=-10mA ,f=100MHz	100			MHz

MARKING

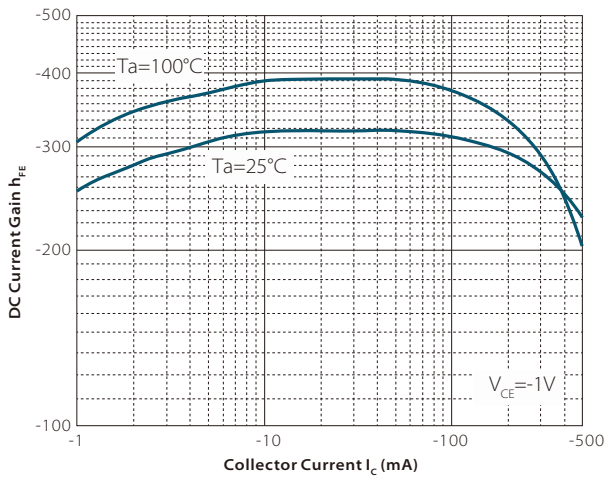
Part Number	BC807-16	BC807-25	BC807-40	BC808-16	BC808-25	BC808-40
Marking	5A	5B	5C	9GA	9GB	9GC

TYPICAL CHARACTERISTICS

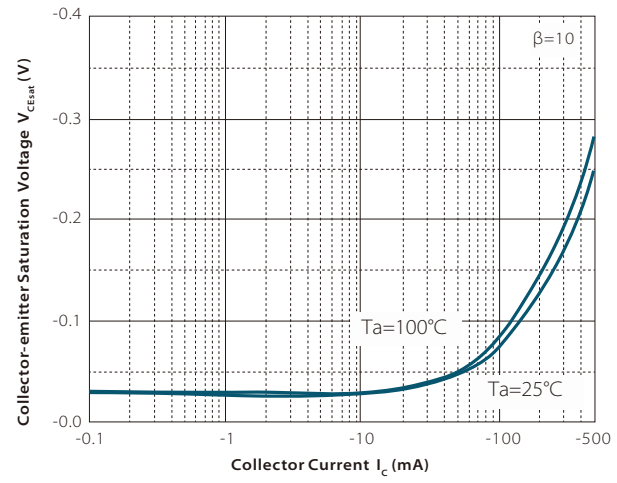
Static Characteristic



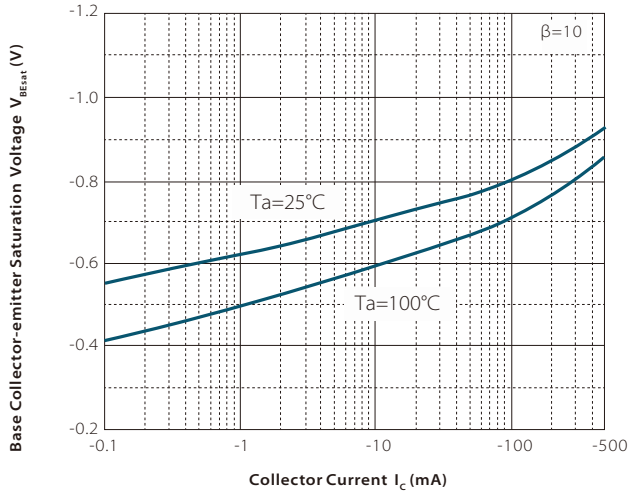
h_{FE} ——— I_C



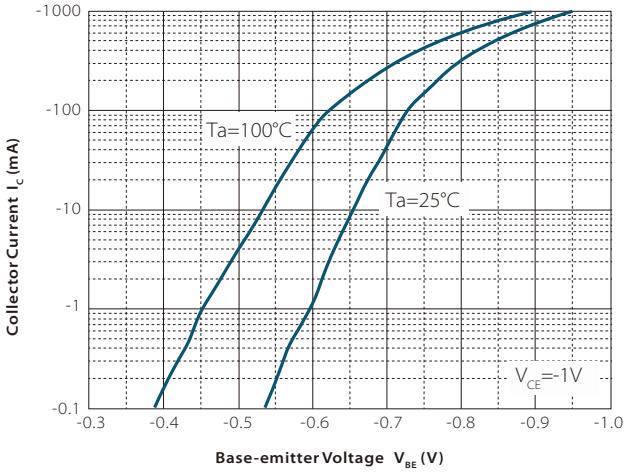
$V_{CE\,sat}$ ——— I_C



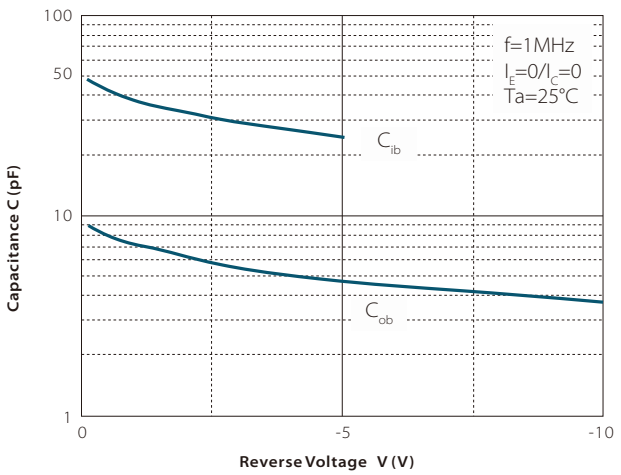
$V_{BE\,sat}$ ——— I_C



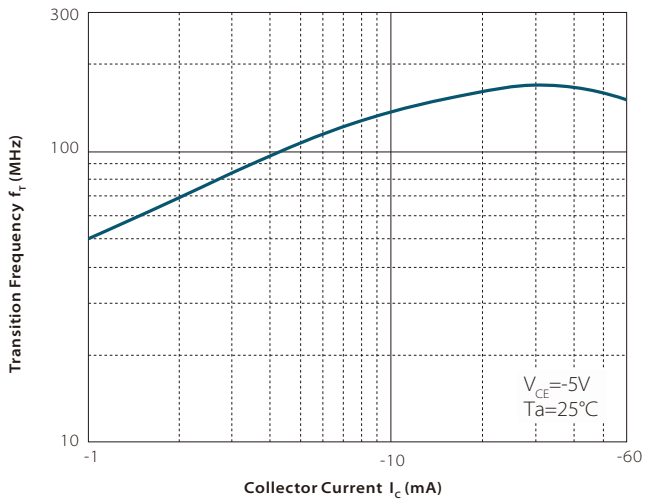
I_C ——— V_{BE}



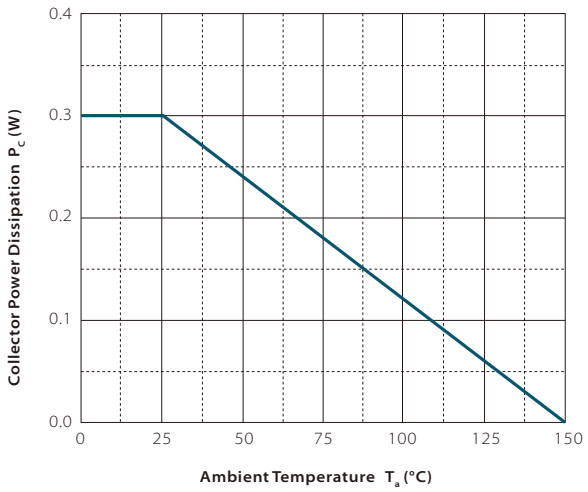
C_{ob}/C_{ib} ——— V_{CB}/V_{EB}



f_T ——— I_C

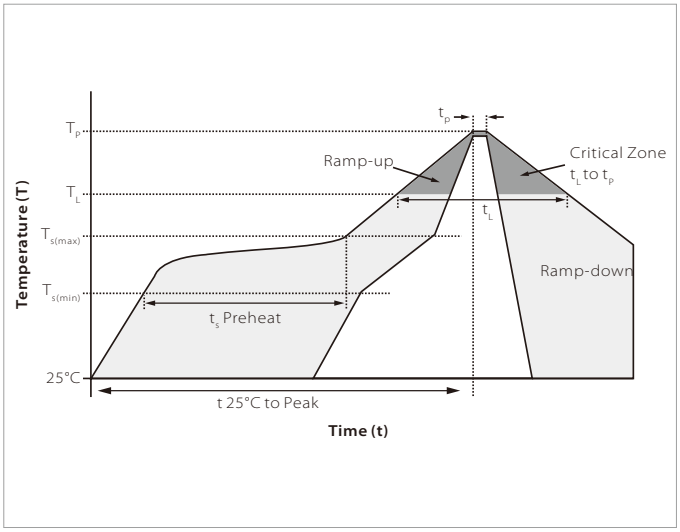


P_C ——— T_a

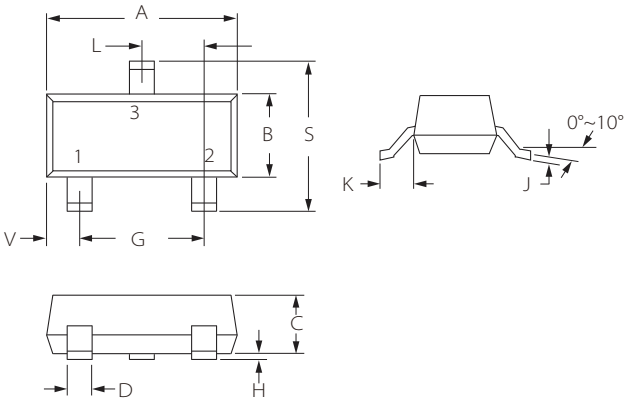


SOLDERING PARAMETERS

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

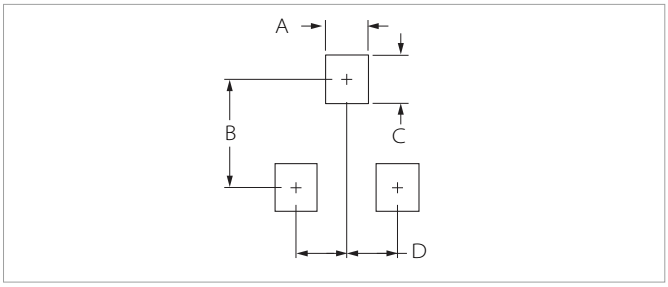


SOT-23 PACKAGE INFORMATION



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