

# BC817

## BC817 SOT-23 Plastic-Encapsulate Transistors (NPN)

### General description

SOT-23 Plastic-Encapsulate Transistors (NPN)

### FEATURES

- Complementary to BC807
- Power Dissipation of 300mW
- High Stability and High Reliability
- SOT-23 Small Outline Plastic Package
- Epoxy UL: 94V-0
- Mounting Position: Any



**DEVICE MARKING CODE:**

### Maximum Ratings & Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

Parameters	Symbols	Value	Unit
Collector-Base Voltage	V <sub>CB0</sub>	50	V
Collector-Emitter Voltage	V <sub>CEO</sub>	45	V
Emitter -Base Voltage	V <sub>EBO</sub>	5	V
Collector Current-Continuous	I <sub>c</sub>	500	mA
Collector Power Dissipation	P <sub>c</sub>	300	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55-+150	°C
Thermal resistance From junction to ambient	R <sub>θJA</sub>	417	°C/W

### Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified).

Parameter	Symbols	Test Condition	Limits		Unit
			Min	Max	
Collector-base breakdown voltage	V(BR)CBO	I <sub>C</sub> =10μA, I <sub>E</sub> =0	50		V
Collector-emitter breakdown voltage	V(BR)CEO	I <sub>C</sub> =10mA, I <sub>B</sub> =0	45		V
Emitter-base breakdown voltage	V(BR)EBO	I <sub>E</sub> =1μA, I <sub>C</sub> =0	5		V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =45V, I <sub>E</sub> =0		100	nA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =4V, I <sub>C</sub> =0		100	nA
DC current gain	h <sub>FE</sub> (1)	V <sub>CE</sub> =1V, I <sub>C</sub> =100mA	100	600	
	h <sub>FE</sub> (2)	V <sub>CE</sub> =1V, I <sub>C</sub> =500mA	40		
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA		0.70	V
Base -emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA		1.20	V
Base-emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> =500mA		1.20	
Collector capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz	10(Typ)		
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =10mA, f=100MHz	100		MHz

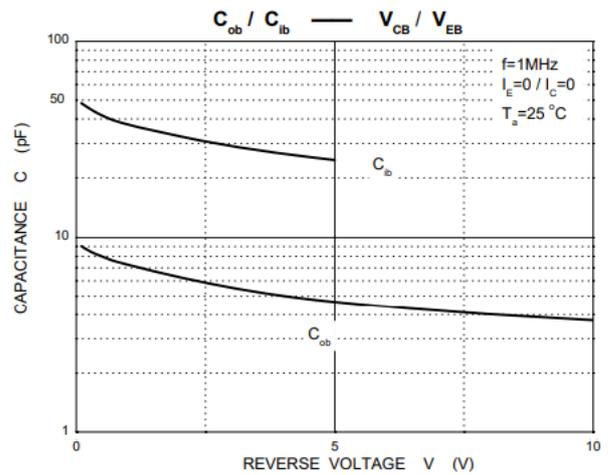
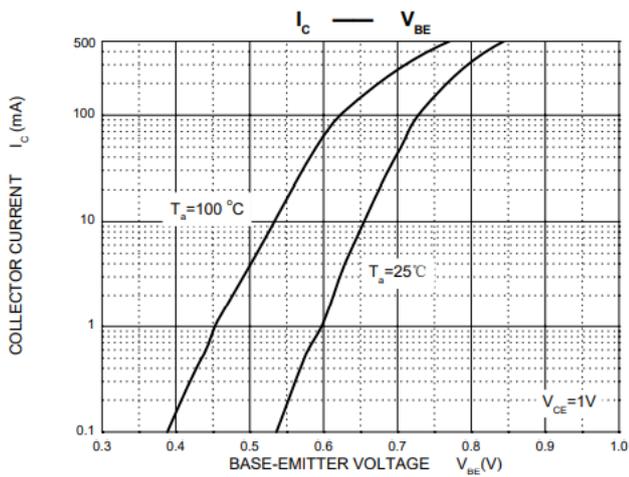
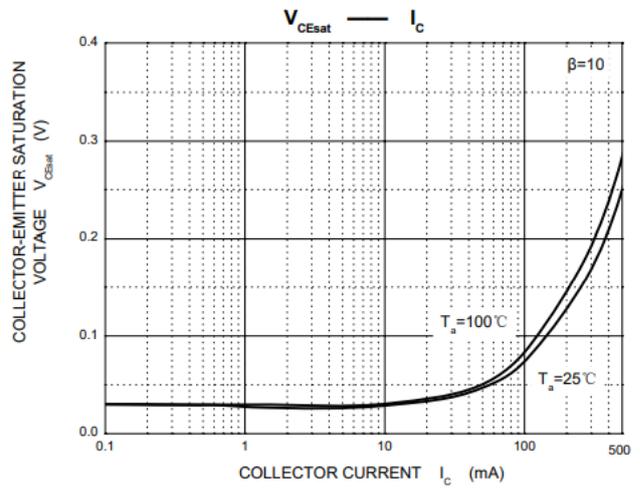
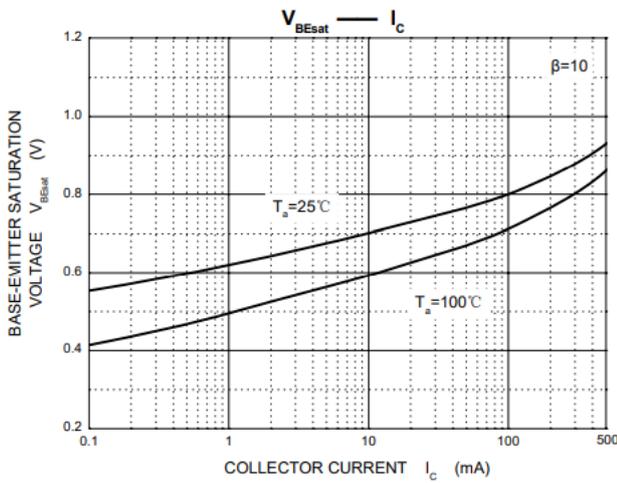
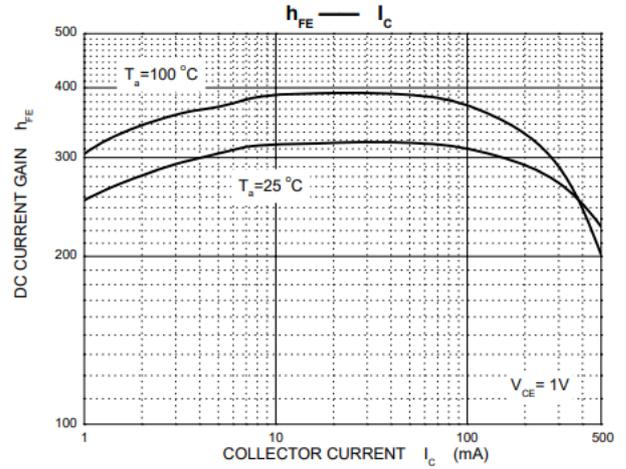
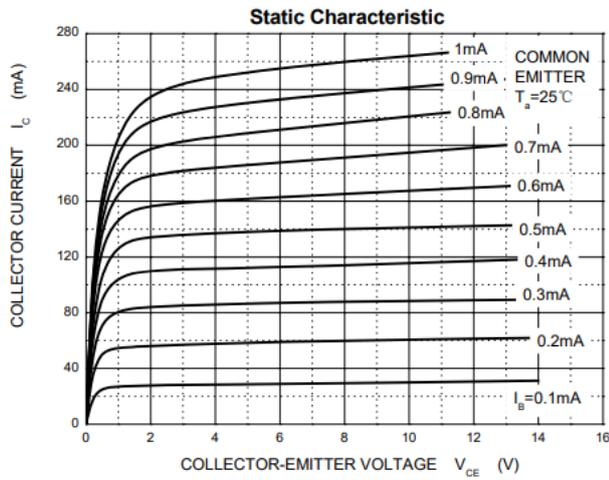
### CLASSIFICATION OF h<sub>FE</sub>(1)

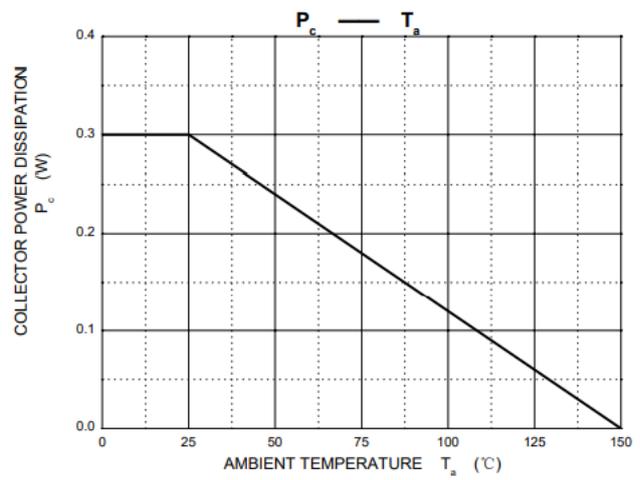
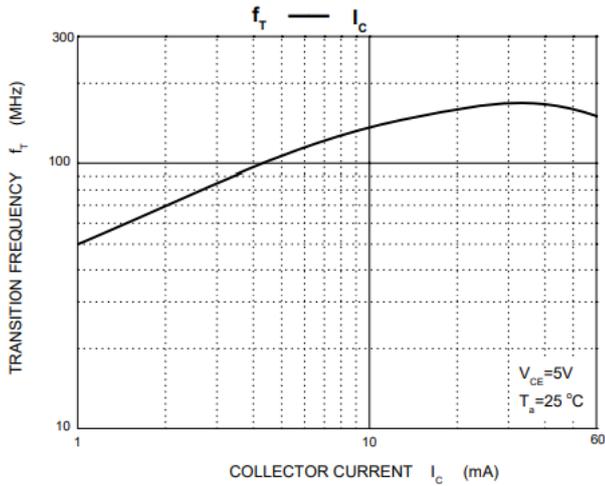
RANK	BC817-16	BC817-25	BC817-40
RANGE	100-250	160-400	250-600
Marking	6A	6B	6C



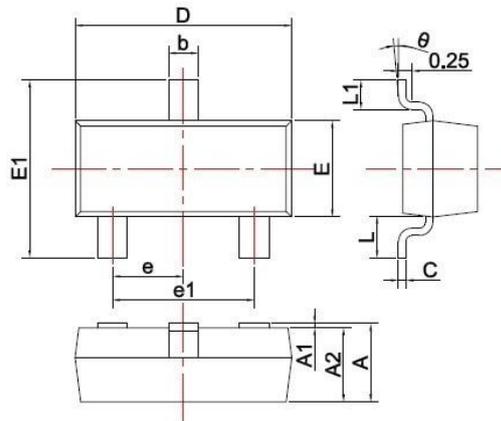
# BC817

## RATING AND CHARACTERISTIC CURVES





## SOT-23 PACKAGE OUTLINE Plastic surface mounted package

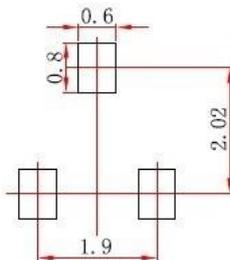


SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
$\theta$	0 $^\circ$	8 $^\circ$

Unit: mm

Precautions: PCB Design

Recommended land dimensions for SOT-23 diode. Electrode patterns for PCBs



Note:

1. Controlling dimension: In millimeters.
2. General tolerance:  $\pm 0.05mm$ .
3. The pad layout is for reference purposes only.

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