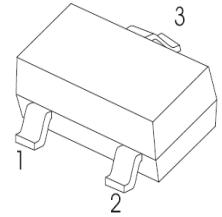




SOT-23 Plastic-Encapsulate Transistor

**BC817- 16** TRANSISTOR (NPN)  
**BC817- 25**  
**BC817- 40**

**SOT-23**



- 1. BASE
- 2. EMITTER
- 3. COLLECTOR

**FEATURES**

- For general AF applications
- High collector current
- High current gain
- Low collector-emitter saturation voltage
- Complementary types: BC807 (PNP)

**PACKAGE SPECIFICATIONS**

Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (pcs)	Box Size (mm)	QTY/Box (pcs)	Carton Size (mm)	Q'TY/Carton (pcs)
SOT-23	7'	330	3000	203×203×195	45000	438×438×220	180000

**MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Value	Unit
Collector Base Voltage	V <sub>CBO</sub>	50	V
Collector Emitter Voltage	V <sub>CEO</sub>	45	V
Emitter Base Voltage	V <sub>EBO</sub>	5	V
Collector Current	I <sub>C</sub>	0.5	A
Power Dissipation	P <sub>tot</sub>	300	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	- 55 to + 150	°C

**ELECTRICAL CHARACTERISTICS (T<sub>amb</sub>=25°C unless otherwise specified)**

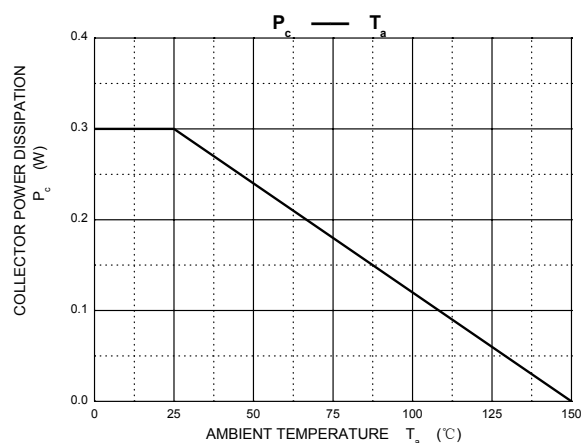
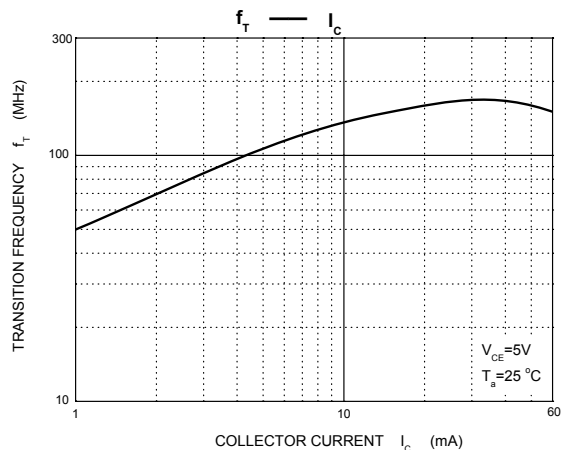
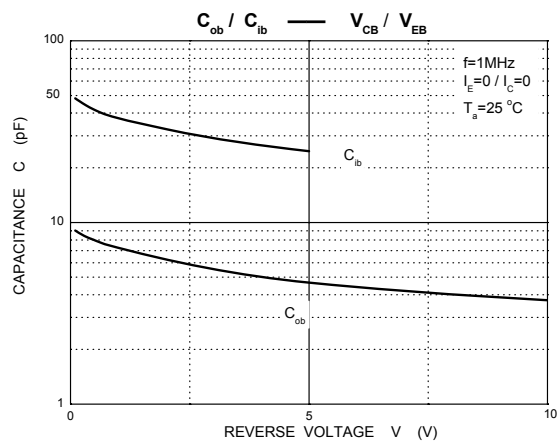
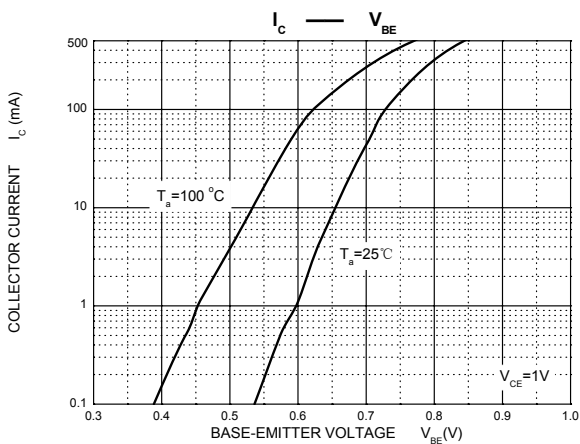
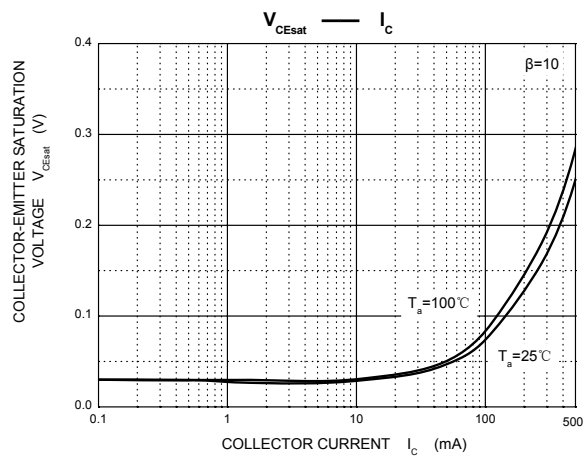
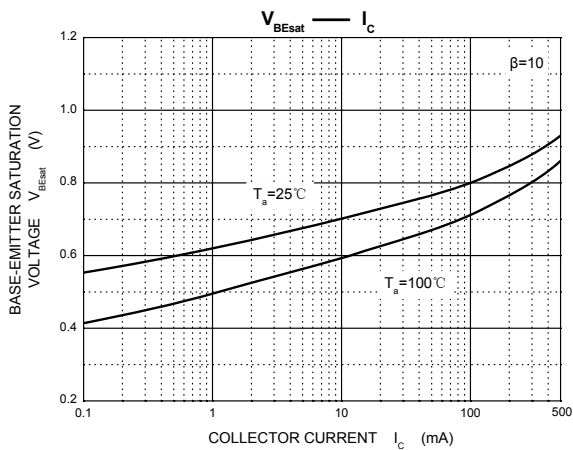
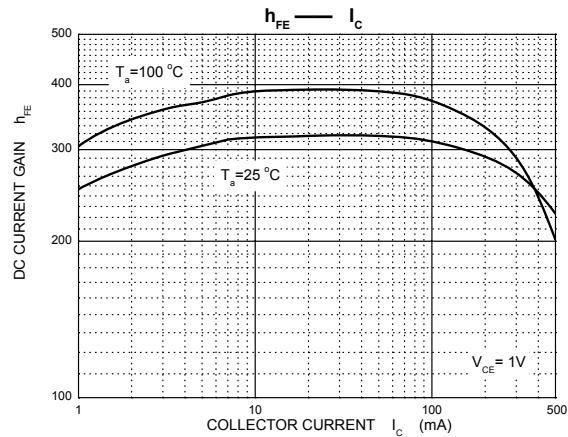
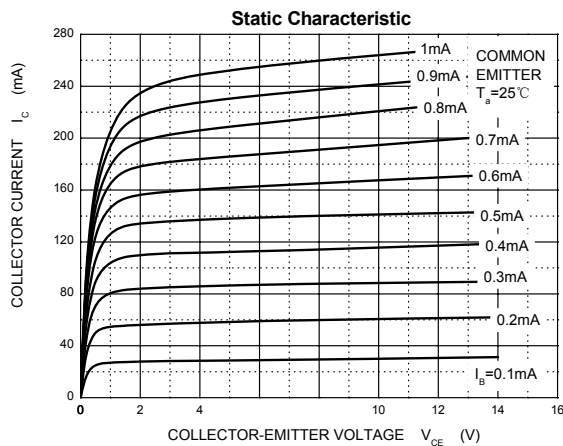
Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	V <sub>CBO</sub>	I <sub>C</sub> = 10μA, I <sub>E</sub> =0	50		V
Collector-emitter breakdown voltage	V <sub>CEO</sub>	I <sub>C</sub> = 10mA, I <sub>B</sub> =0	45		V
Emitter-base breakdown voltage	V <sub>EBO</sub>	I <sub>E</sub> = 1μA, I <sub>C</sub> =0	5		V
Collector cut-off current	I <sub>CB0</sub>	V <sub>CB</sub> = 45 V, I <sub>E</sub> =0		0.1	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = 4V, I <sub>C</sub> =0		0.1	μA
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> = 1V, I <sub>C</sub> = 100mA	100	600	
	h <sub>FE(2)</sub>	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		0.7	
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 500mA, I <sub>B</sub> = 50mA		1.2	
Base-emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> = 1 V, I <sub>C</sub> = 500mA		1.2	
Collector capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz		10	pF
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10mA, f=100MHz	100		MHz

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

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



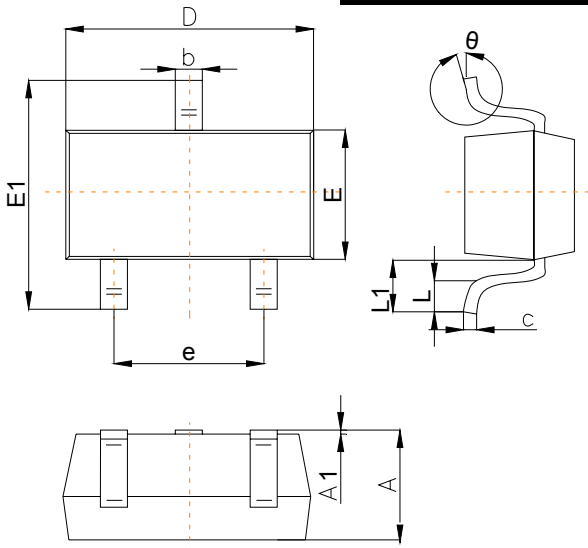
Typical Characteristics



The curve above is for reference only.

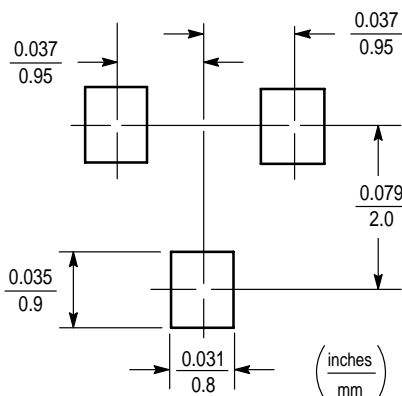
## Outline Drawing

### SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		
	Min	Typ	Max
A	1.00		1.40
A1			0.10
b	0.35		0.50
c	0.10		0.20
D	2.70	2.90	3.10
E	1.40		1.60
E1	2.4		2.80
e		1.90	
L	0.10		0.30
L1	0.4		
$\theta$	0°		10°

### Suggested Pad Layout



**Note:**

1. Controlling dimension: in/millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

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