

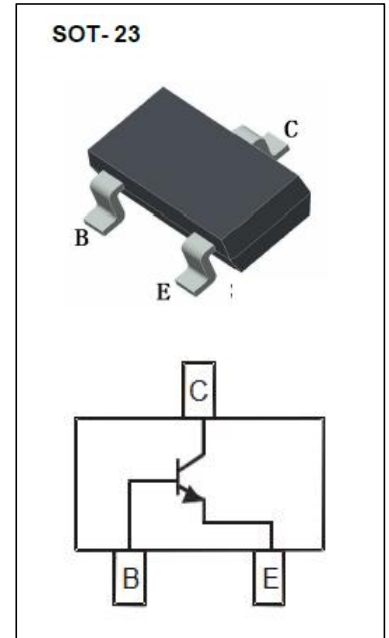


**SOT-23 Plastic-Encapsulate Transistors**

**BC817** TRANSISTOR (NPN)

**FEATURES**

- High collector current
- For general AF applications
- High current gain
- Low collector-emitter saturation voltage
- Complementary types: BC807(PNP)
- AEC Q101 Qualified



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

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	50	V
V <sub>CEO</sub>	Collector-Emitter Voltage	45	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>c</sub>	Collector Current	500	mA
P <sub>C</sub>	Collector Power Dissipation	300	mW
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient	417	°C/W
T <sub>J</sub> , T <sub>stg</sub>	Operation Junction and Storage Temperature Range	-55~+150	°C

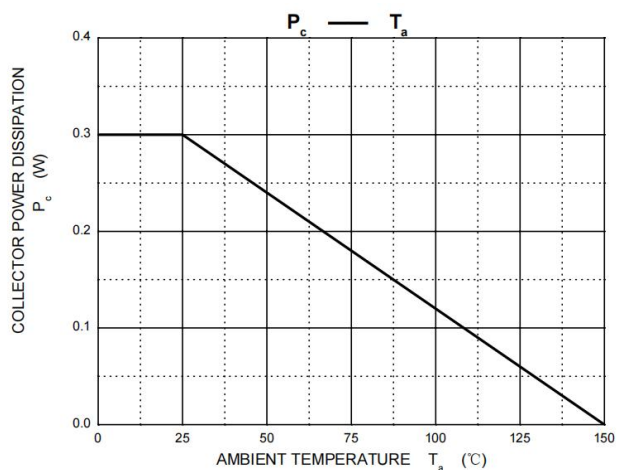
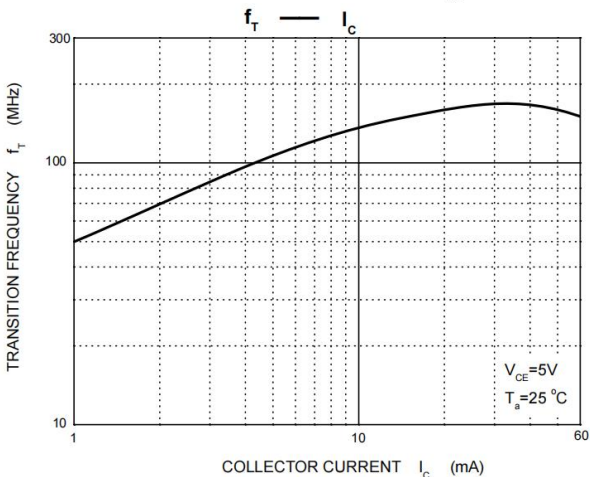
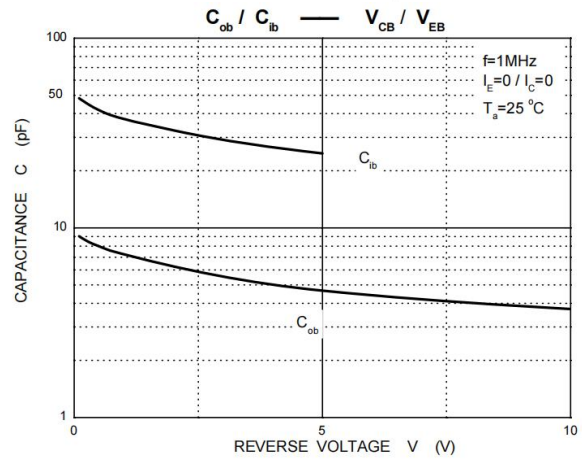
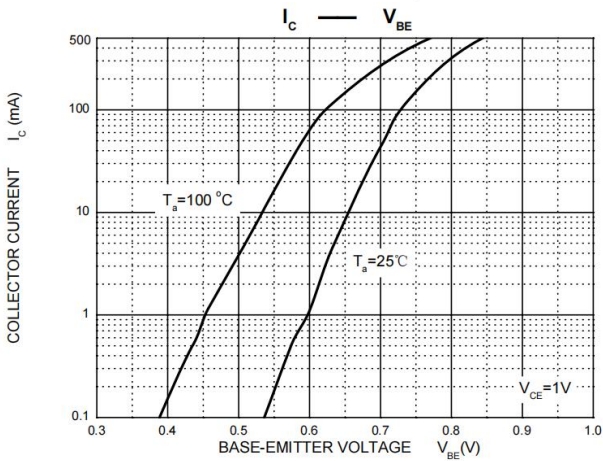
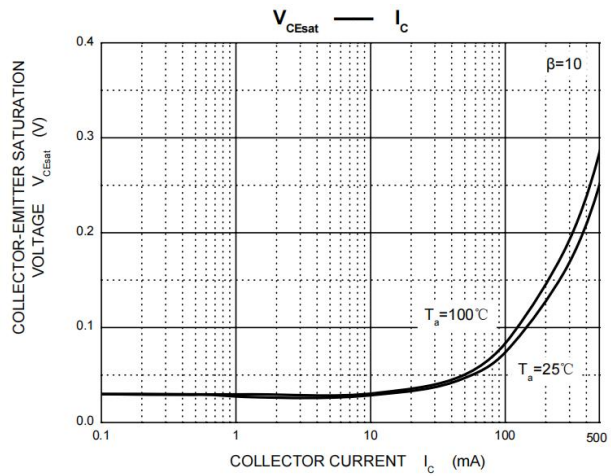
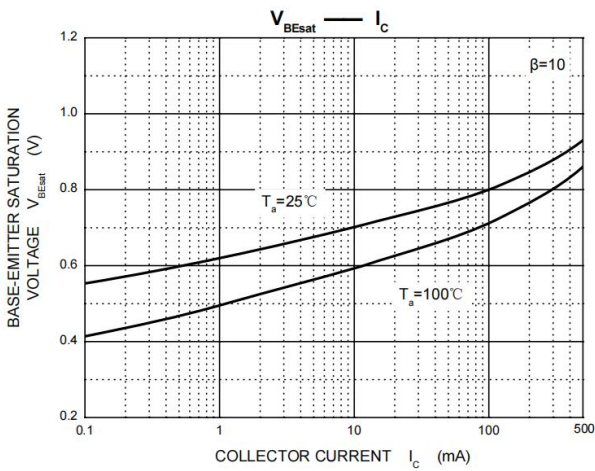
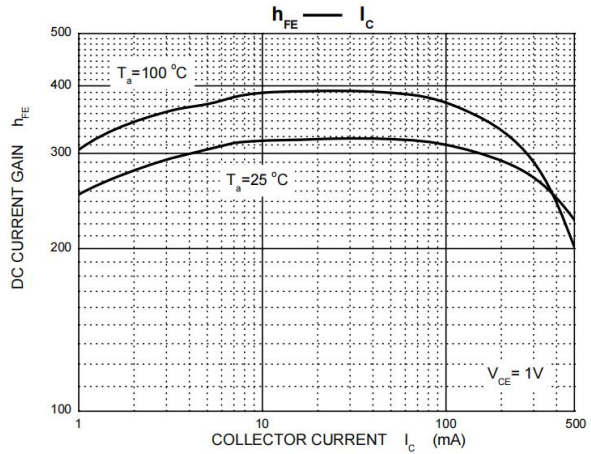
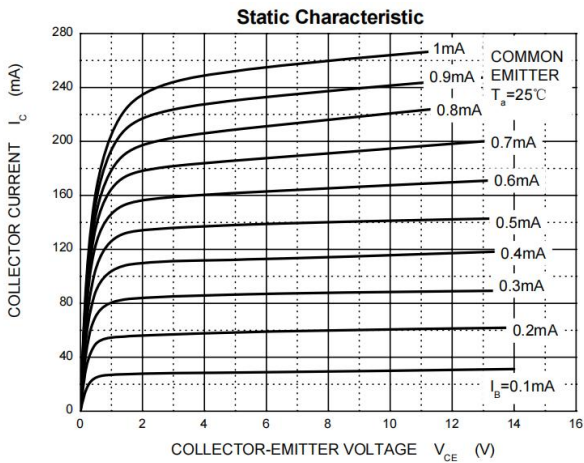
**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Test conditions	Min	Typ	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>CBO</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	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA			1.2	V
Base-emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> = 1 V, I <sub>C</sub> = 500mA			1.2	V
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

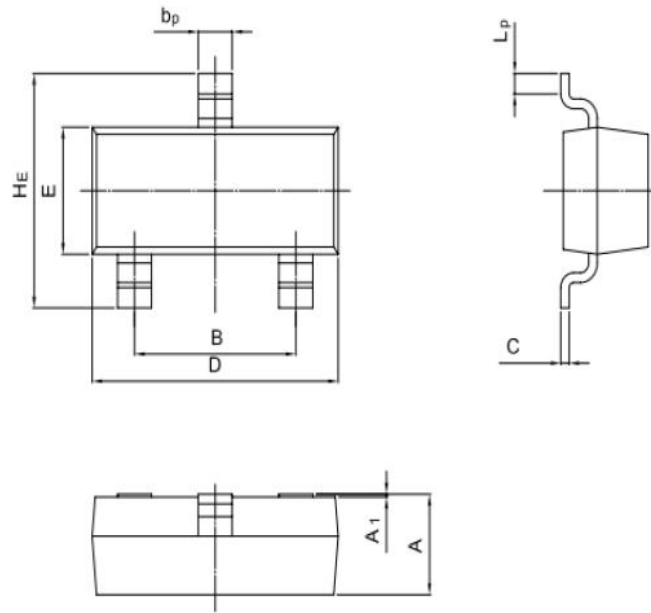
**CLASSIFICATION OF h<sub>FE</sub>**

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

# Typical Characteristics

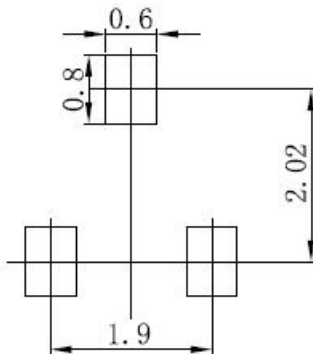


## SOT-23 Package Outline Dimensions



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20

## SOT-23 Suggested Pad Layout



### Note:

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

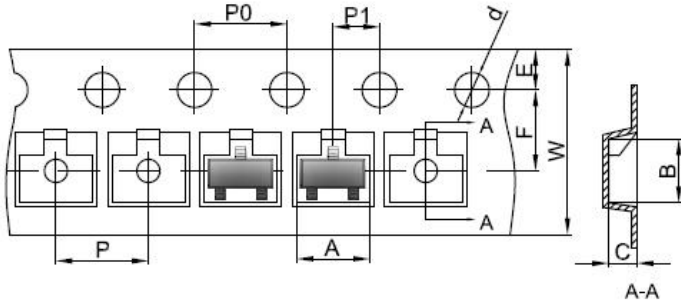
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# Reel Taping Specifications For Surface Mount Devices-SOT-23

## SOT-23 Embossed Carrier Tape



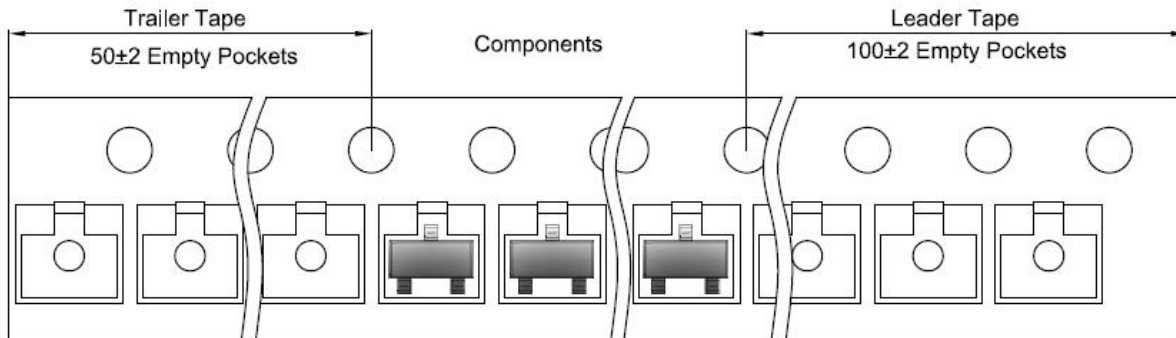
### Packaging Description:

SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

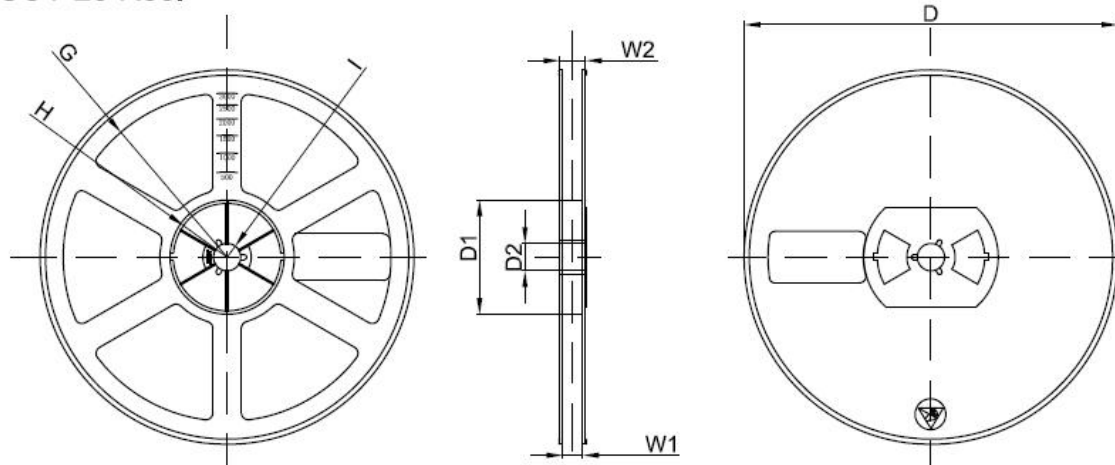
Dimensions are in millimeter

Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

## SOT-23 Tape Leader and Trailer



## SOT-23 Reel



Dimensions are in millimeter

Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 Inch	45,000 pcs	203×203×195	180,000 pcs	438×438×230	

Date of change	Rev #	revise content
2023/09/18	A/0	/