

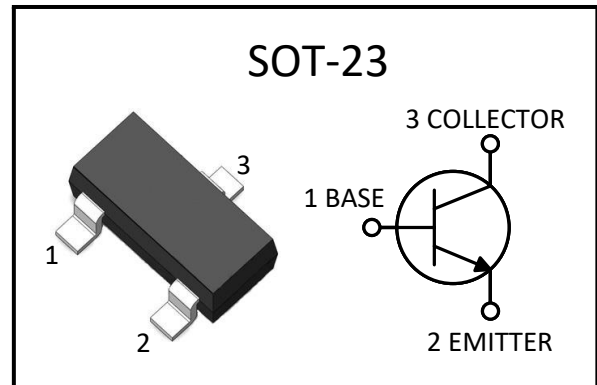
BC817

NPN Plastic-Encapsulate Transistor

Features

- $V_{CE}=45V$
- $I_C=0.5A$
- $f_T=100MHz$ @ $V_{CE}=5V$, $I_C=10mA$, $f=100MHz$

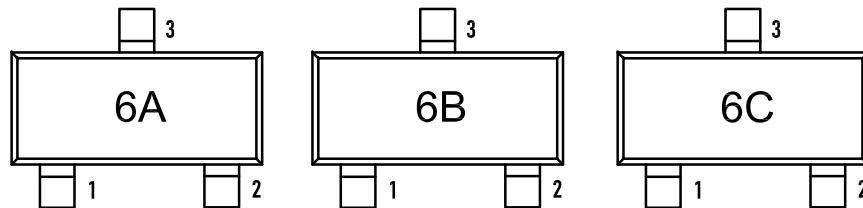
Package



General Description

- Epitaxial planar die constructio
- SOT-23 Plastic Package

Marking



Ordering information

Order code	Package	Marking	H_{FE}	Base qty	Delivery mode
BC817-16	SOT-23	6A	100~250	3K	Tape and reel
BC817-25	SOT-23	6B	160~400	3K	Tape and reel
BC817-40	SOT-23	6C	250~600	3K	Tape and reel

Absolute Maximum Ratings @ $T_A=25^{\circ}C$ unless otherwise noted

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	500	mA
P_C	Collector Power Dissipation	300	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	400	$^{\circ}C/W$
T_J	Junction Temperature Range	-55 to +150	$^{\circ}C$
T_{stg}	Storage Temperature Range	-55 to +150	$^{\circ}C$

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Electrical Characteristics (T_A=25°C, unless otherwise specified)

Symbol	Parameter	Test condition	Min.	Typ.	Max.	Unit
V _{(BR)CBO}	Collector-base breakdown voltage	I _C =10μA, I _E =0	50	—	—	V
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C =10mA, I _B =0	45	—	—	
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E =1μA, I _C =0	5	—	—	
I _{CBO}	Collector cut-off current	V _{CB} =45V, I _E =0	—	—	100	nA
I _{EBO}	Emitter cut-off current	V _{EB} =4V, I _C =0	—	—	100	
h _{FE(1)}	DC current gain(1)	V _{CE} =1V, I _C =100mA	100	—	600	—
h _{FE(2)}	DC current gain(2)	V _{CE} =1V, I _C =500mA	40	—	—	—
V _{CE(sat)}	Collector-emitter saturation voltage	I _C =500mA, I _B =50mA	—	—	0.7	V
V _{BE(sat)}	Base-emitter saturation voltage		—	—	1.2	
C _{ob}	Collector capacitance	V _{CB} =10V, f=1MHz	—	10	—	pF
f _T	Transition frequency	V _{CE} =5V, I _C =10mA, f=100MHz	100	—	—	MHz



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Typical Performance Characteristics ($T_J = 25^\circ\text{C}$, unless otherwise noted)

Figure 1 : Static Characteristics

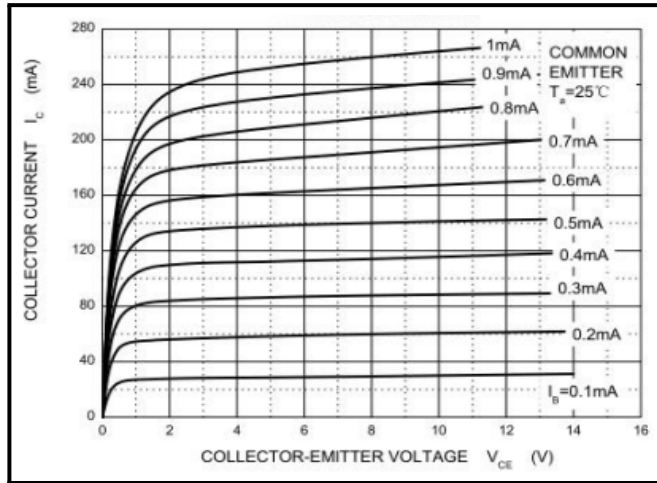


Figure 2 : $h_{FE} \sim I_C$

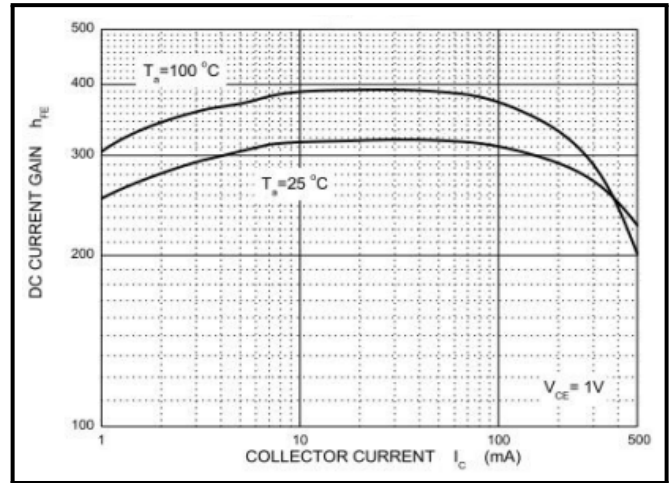


Figure 3 : $V_{BE(sat)} \sim I_C$

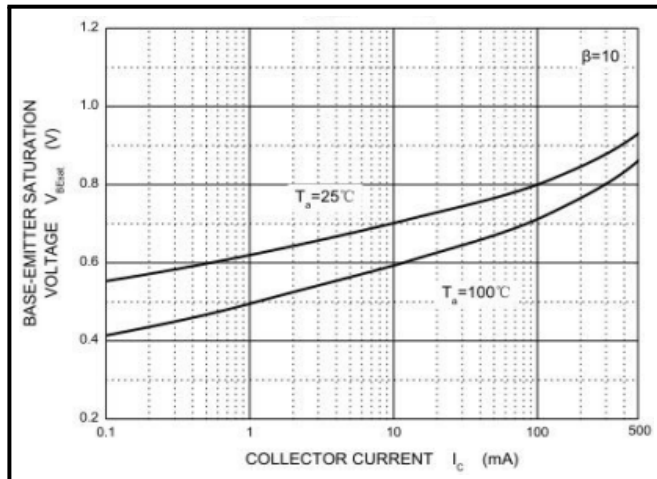
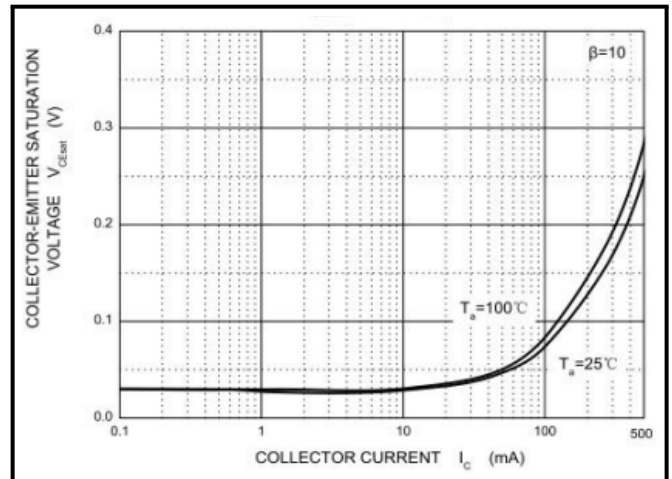


Figure 4 : $V_{CE(sat)} \sim I_C$



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Typical Performance Characteristics($T_J = 25^\circ\text{C}$, unless otherwise noted)

Figure 5 : I_C — V_{BE}

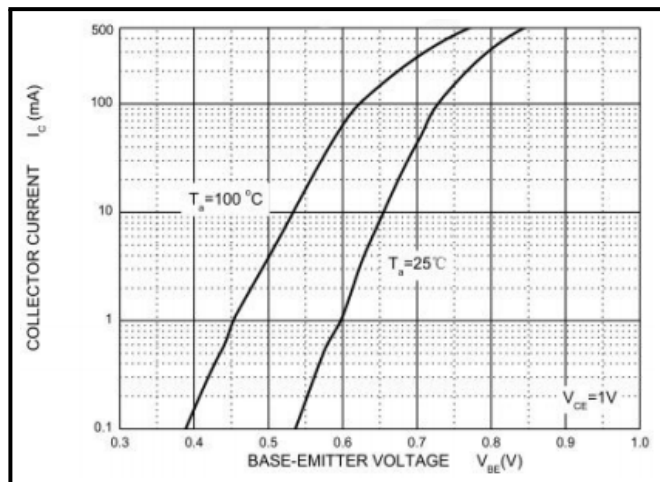


Figure 6 : C_{ob}/C_{ib} — V_{CB}/V_{EB}

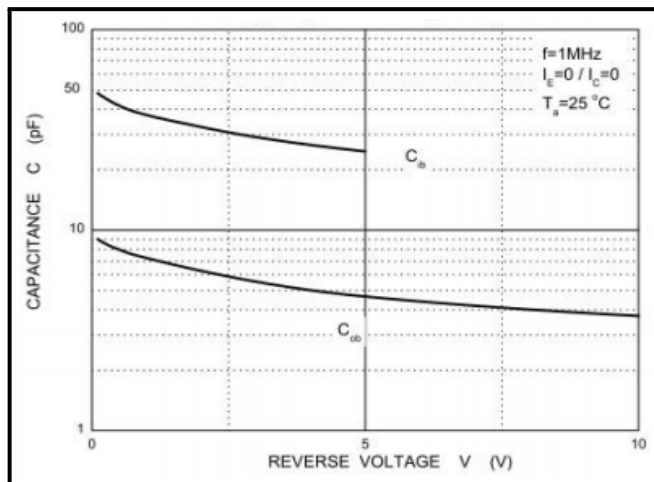


Figure 7: f_T — I_C

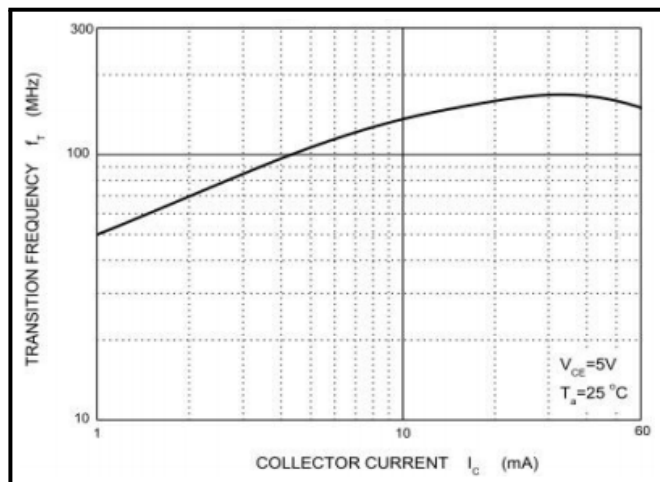
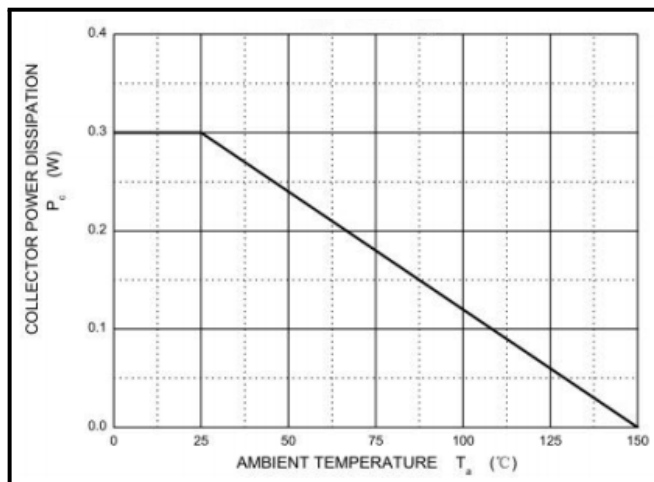


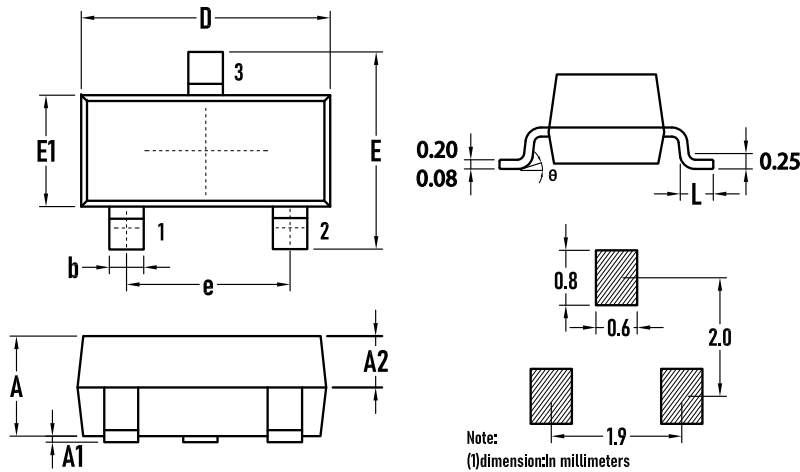
Figure 8: P_C — T_A



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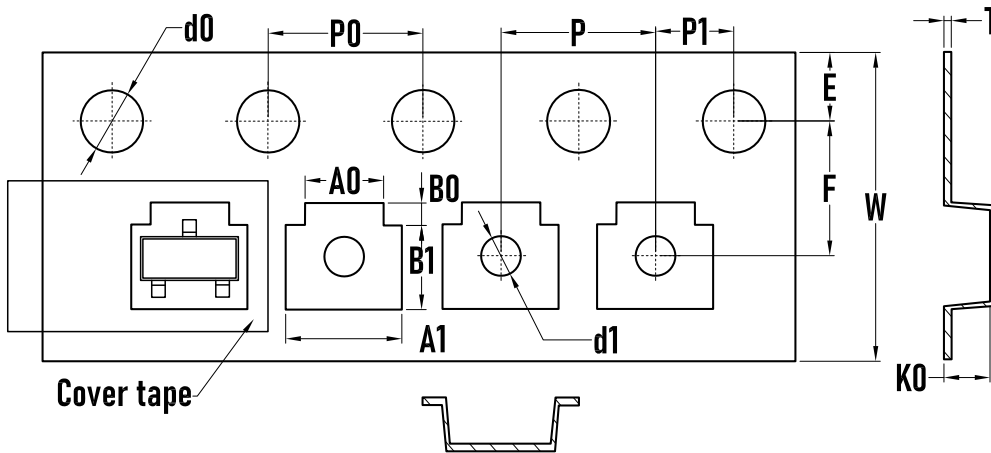
**NPN Plastic-
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Outline Drawing - SOT-23



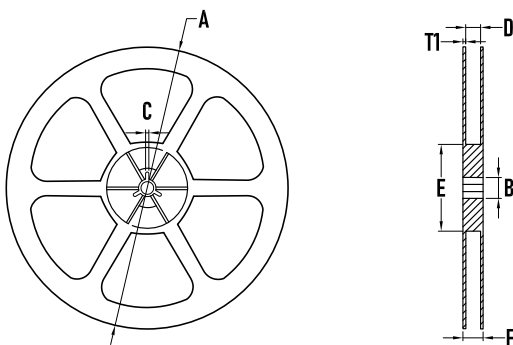
SYMBOL	MILLIMETER		
	MIN.	Typ.	MAX.
A	0.90	1.00	1.10
A1	0.01	—	0.10
A2	0.50	0.60	0.70
D	2.80	2.90	3.00
b	0.25	0.35	0.45
E	2.10	2.30	2.50
E1	1.20	1.30	1.40
e	1.80	1.90	2.00
L	0.25	0.35	0.45
θ	0	—	8°

Packaging Tape - SOT-23



SYMBOL	MILLIMETER
A0	2.10±0.10
A1	3.10±0.10
B0	0.65±0.10
B1	2.75±0.10
d0	1.55±0.10
d1	1.00±0.05
E	1.75±0.10
F	3.50±0.10
K0	1.10±0.10
P	4.00±0.10
P0	4.00±0.10
P1	2.00±0.10
W	8.00±0.30
T	0.20 ±0.05

Packaging Reel



SYMBOL	MILLIMETER
A	177.8±0.2
B	3.1
C	13.50
D	9.6±0.3
E	75±0.2
F	12.3±0.3
T1	1.0±0.2
Quantity	3000PCS

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