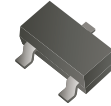


## BC807-16-HF/25-HF/40-HF (PNP)

RoHS Device  
Halogen Free



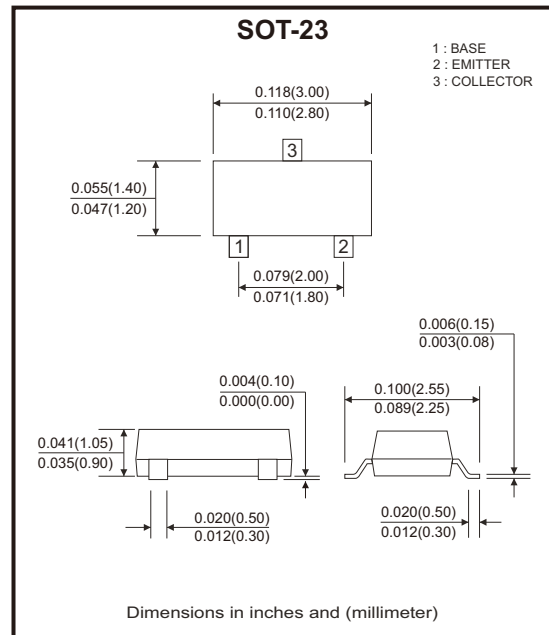
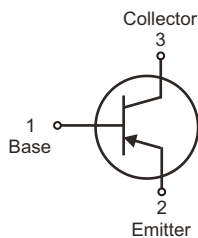
### Features

- Ideally suited for automatic insertion.
- Epitaxial planar die construction.

### Mechanical Data

- Case: SOT-23, molded plastic.
- Mounting position: Any.

### Circuit Diagram



### Maximum Ratings (at $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-base voltage	$V_{CBO}$	-50	V
Collector-emitter voltage	$V_{CEO}$	-45	V
Emitter-base voltage	$V_{EBO}$	-5	V
Collector current	$I_C$	-500	mA
Collector power dissipation	$P_C$	300	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$	417	$^{\circ}\text{C/W}$
Operation junction and storage temperature range	$T_J, T_{STG}$	-55 to +150	$^{\circ}\text{C}$

## Electrical Characteristics (at $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{CBO}$	$I_C = -10\mu\text{A}, I_E = 0$	-50		V
Collector-emitter breakdown voltage	$V_{CEO}$	$I_C = -10\text{mA}, I_B = 0$	-45		V
Emitter-base breakdown voltage	$V_{EBO}$	$I_E = -1\mu\text{A}, I_C = 0$	-5		V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -45\text{V}, I_E = 0$		-0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -4\text{V}, I_C = 0$		-0.1	$\mu\text{A}$
DC current gain	$h_{FE(1)}$	$V_{CE} = -1\text{V}, I_C = -100\text{mA}$	100	600	
	$h_{FE(2)}$	$V_{CE} = -1\text{V}, I_C = -500\text{mA}$	40		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$		-0.7	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$		-1.2	V
Transition frequency	$f_T$	$V_{CE} = -5\text{V}, I_C = -10\text{mA}, f = 100\text{MHz}$	100		MHz

## Classification of $h_{FE(1)}$

Rank	BC807-16-HF	BC807-25-HF	BC807-40-HF
Range	100-250	160-400	250-600

## Rating and Characteristic Curves (BC807-16-HF/25-HF/40-HF)

Fig.1 - Static Characteristic

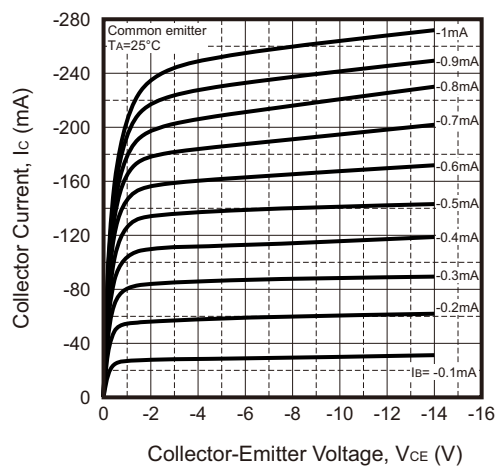
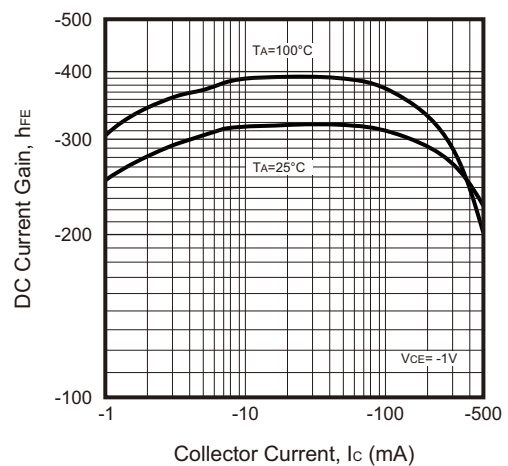


Fig.2 -  $h_{FE} - I_C$



## Rating and Characteristic Curves (BC807-16-HF/25-HF/40-HF)

Fig.3 -  $V_{BEsat} - I_c$

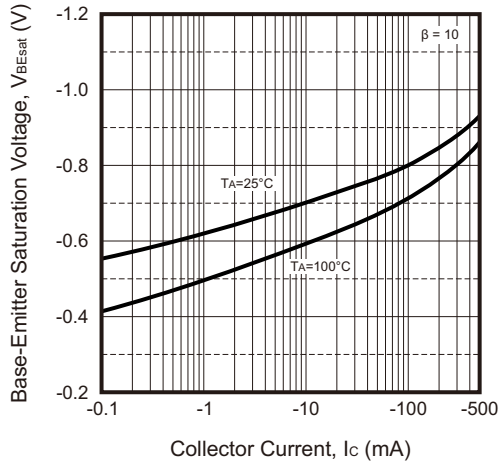


Fig.4 -  $V_{CEsat} - I_c$

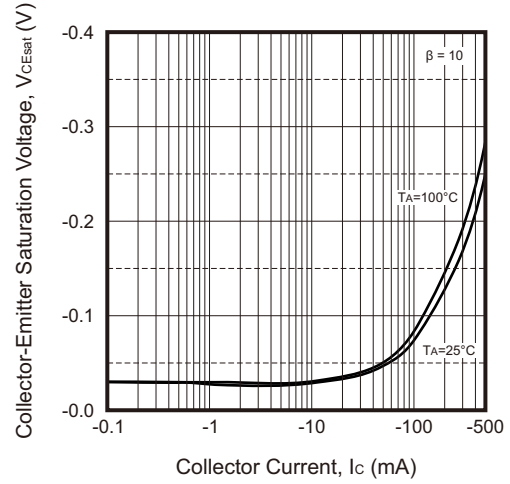


Fig.5 -  $I_c - V_{BE}$

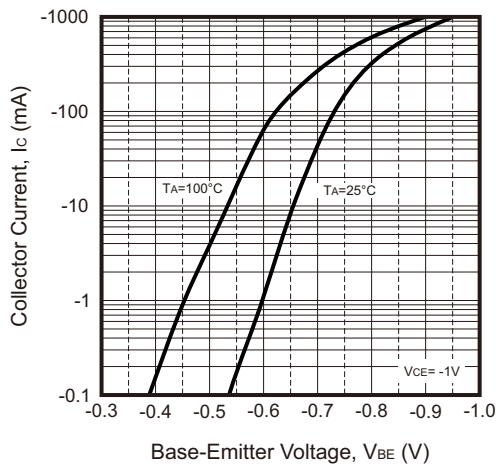


Fig.6 -  $C_{ob}/C_{ib} - V_{CE}/V_{EB}$

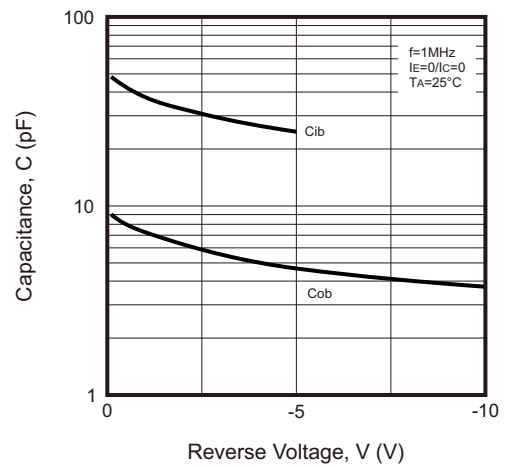


Fig.7 -  $f_r - I_c$

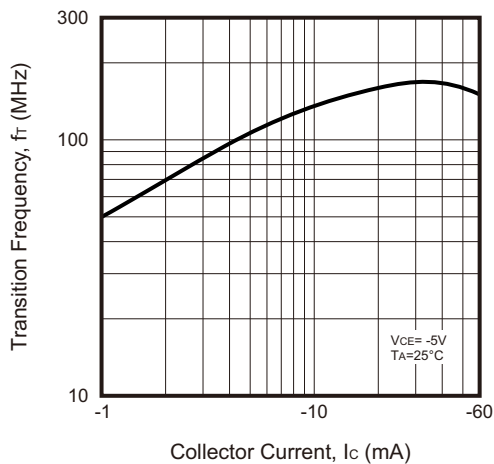
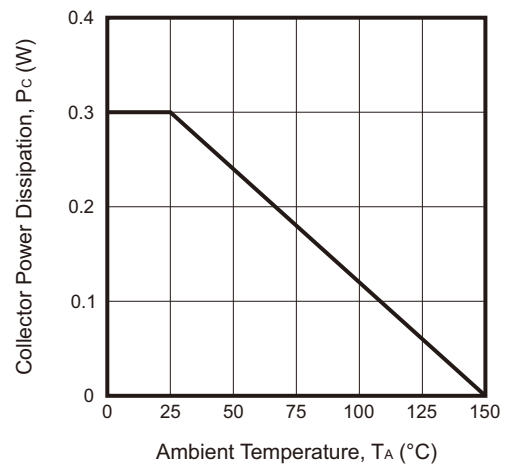
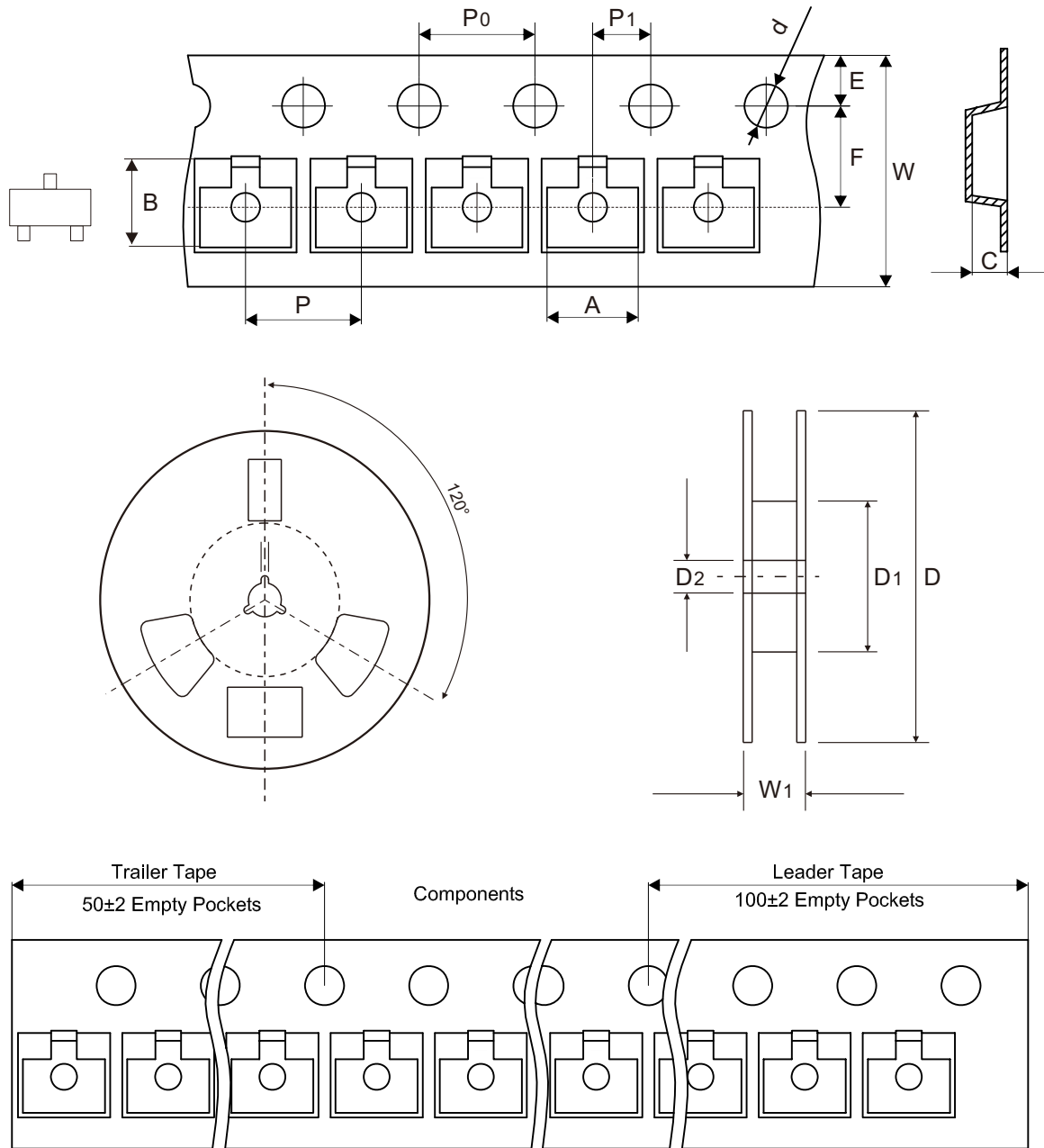


Fig.8 -  $P_c - T_A$



## Reel Taping Specification

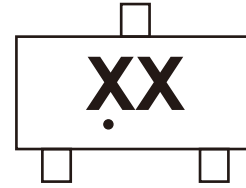


SOT-23	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	1.50 ± 0.10	178.00 ± 2.00	54.40 ± 1.00	13.00 ± 1.00
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	0.059 ± 0.004	7.008 ± 0.079	2.142 ± 0.039	0.512 ± 0.039

SOT-23	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	8.00 + 0.30 - 0.10	12.30 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.315 + 0.012 - 0.004	0.484 ± 0.039

## Marking Code

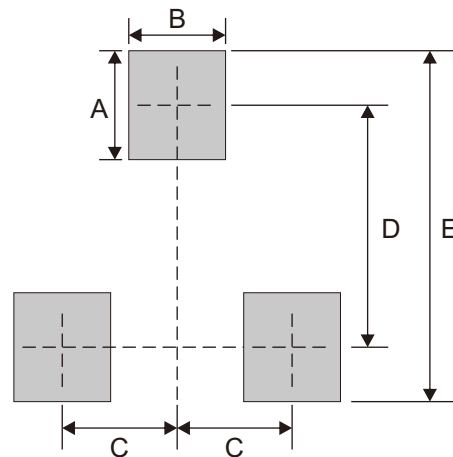
Part Number	Marking Code
BC807-16-HF	5A
BC807-25-HF	5B
BC807-40-HF	5C



Solid dot = Control code  
xx = Product type marking code

## Suggested P.C.B. PAD Layout

SIZE	SOT-23	
	(mm)	(inch)
A	0.90	0.035
B	0.80	0.031
C	0.95	0.037
D	2.00	0.079
E	2.90	0.114



## Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-23	3,000	7