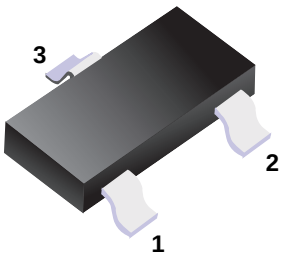
NPN Transistors

■ Features

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



1.Base
2.Emitter
3.Collector

■ Simplified outline(SOT-23)

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	50	V
Collector - Emitter Voltage	V_{CEO}	45	
Emitter - Base Voltage	V_{EBO}	5	
Collector Current - Continuous	I_C	0.5	A
Collector Power Dissipation	P_C	0.3	W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

■ Electrical Characteristics Ta = 25℃

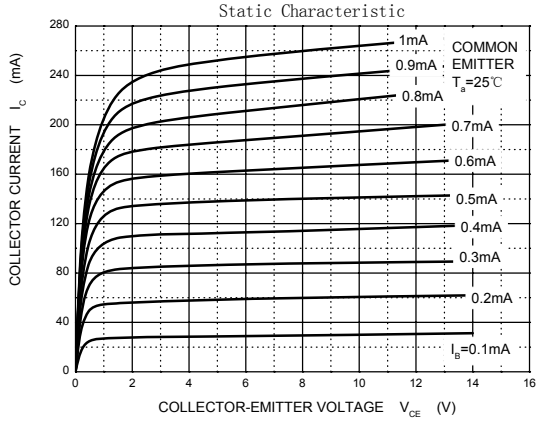
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= 100 μA， I_E= 0	50			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 10 mA， I_B= 0	45			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μ A， I_C= 0	5			
Collector-base cut-off current	I_{CBO}	V_{CB}= 45 V , I_E= 0			0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB}= 4V , I_C=0			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=500 mA, I_B=50mA			0.7	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C= 500 mA, I_B= 50mA			1.2	
Base - emitter voltage	V_{BE}	V_{CE}= 1V, I_C= 500mA			1.2	
DC current gain	$h_{FE(1)}$	V_{CE}= 1V, I_C= 100mA	100		630	
	$h_{FE(2)}$	V_{CE}= 1V, I_C= 500mA	40			
Collector output capacitance	C_{ob}	V_{CB}= 10V, f=1MHz		10		pF
Transition frequency	f_T	V_{CE}= 5V, I_C= 10mA,f=100MHz	100			MHz

■ Classification of $h_{fe(1)}$

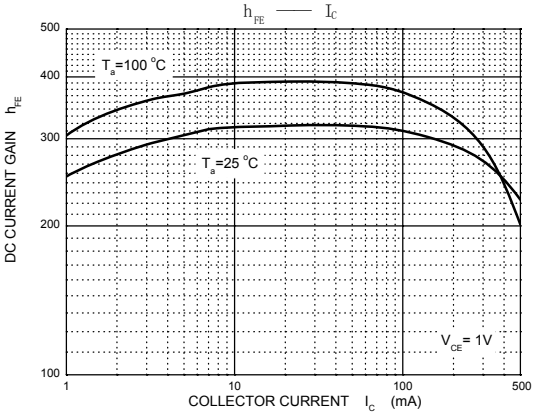
Type	BC817-16	BC817-25	BC817-40
Range	100-250	160-400	250-630
Marking	6A	6B	6C

■ Typical Characterisitics

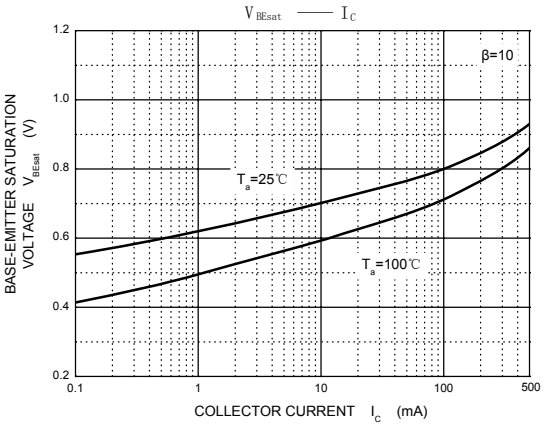
Static Characteristic



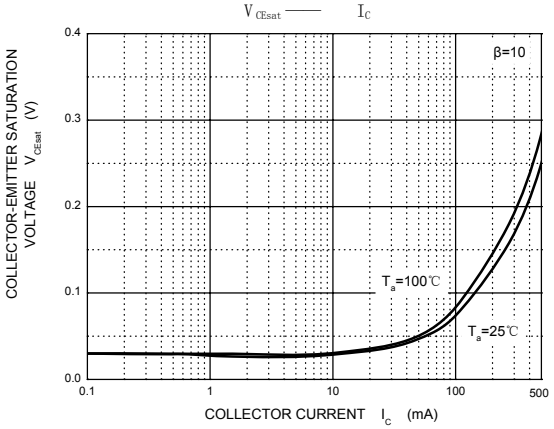
h_{FE} —— I_C



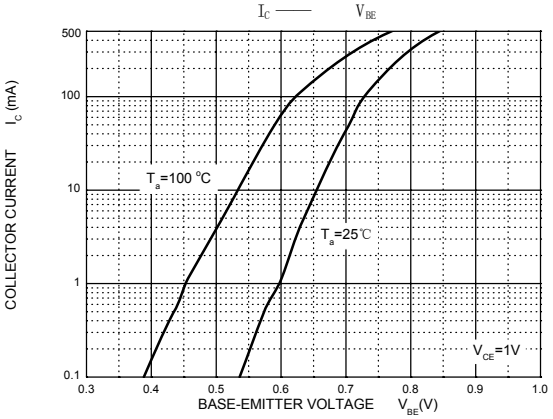
V_{BEsat} —— I_C



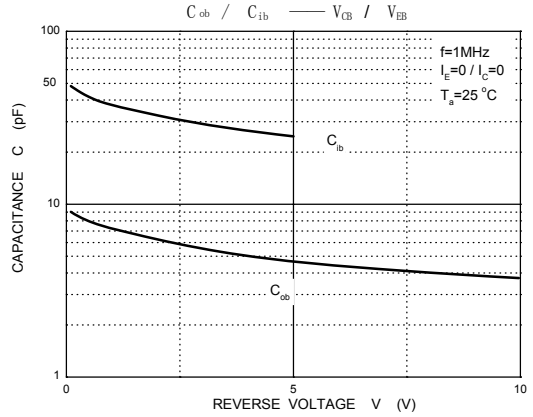
V_{CEsat} —— I_C



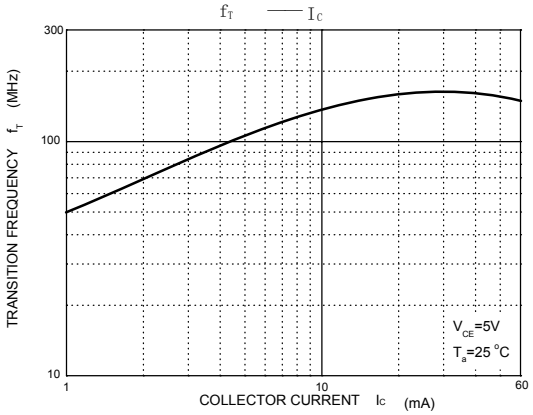
I_C —— V_{BE}



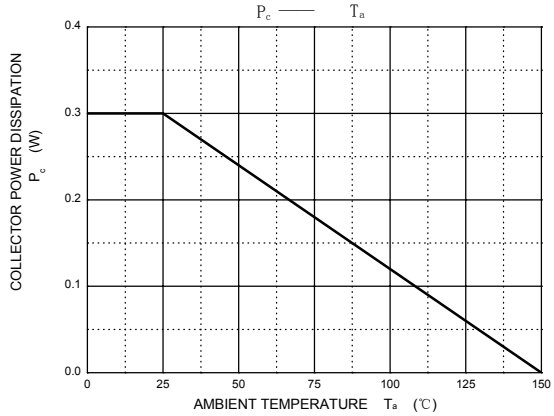
C_{ob} / C_{ib} —— V_{CB} / V_{EB}



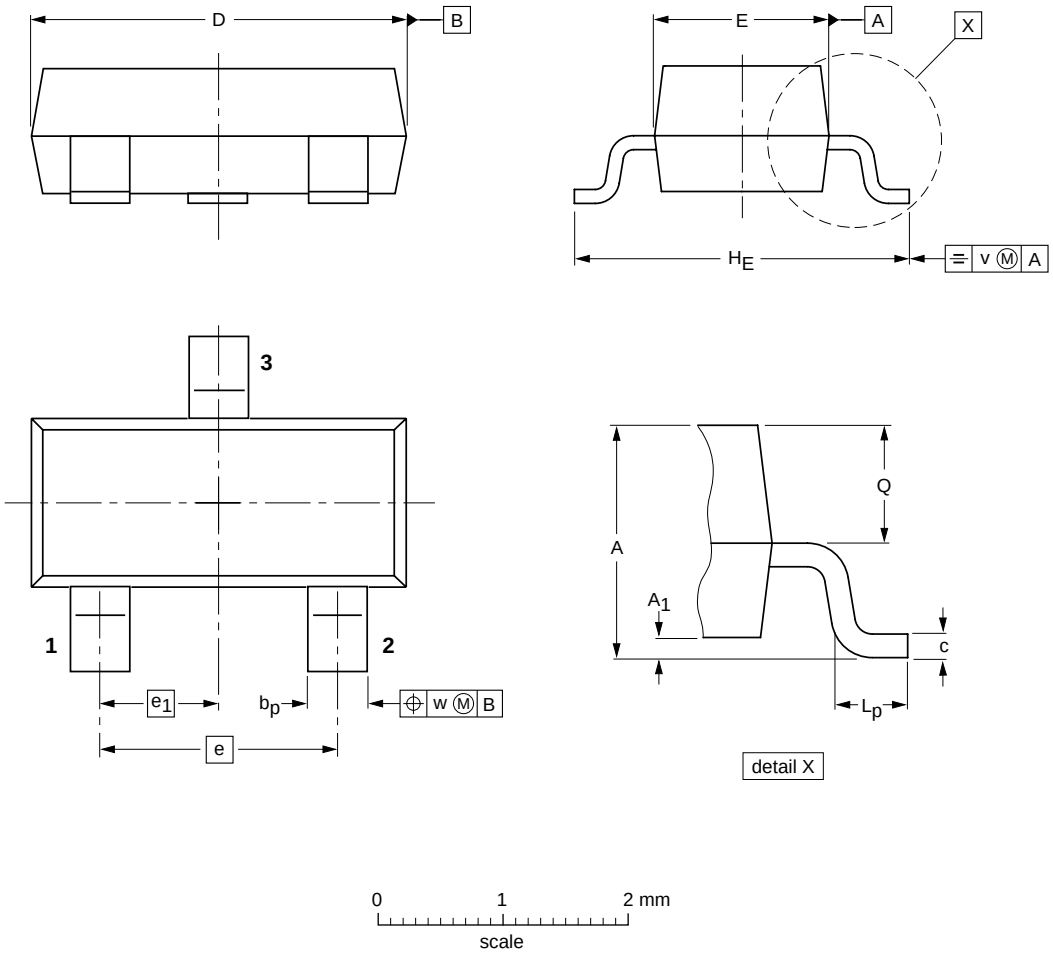
f_T —— I_C



P_c —— T_a



■ SOT-23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1 max.	b_p	c	D	E	e	e_1	H_E	L_p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1