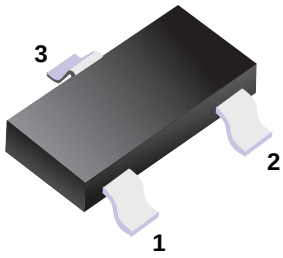
NPN Transistors



1.Base
2.Emitter
3.Collector

Simplified outline(SOT-23)

Features

- Ideally suited for automatic insertion
- For switching and AF amplifier applications

Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	BC846	BC847	BC848	Unit
Collector - Base Voltage	V_{CBO}	80	50	30	V
Collector - Emitter Voltage	V_{CEO}	65	45	30	
Emitter - Base Voltage	V_{EBO}	6	6	6	
Collector Current - Continuous	I_C	100			mA
Collector Power Dissipation	P_C	200			mW
Junction Temperature	T_J	150			℃
Storage Temperature Range	T_{stg}	-55 to 150			

Electrical Characteristics Ta = 25℃

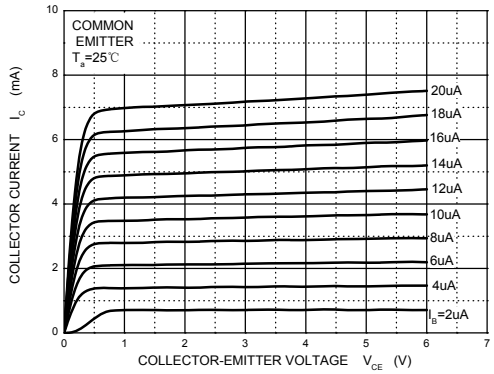
Parameter		Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	BC846	V_{CBO}	I_C= 100 μA, I_E= 0	80			V
	BC847			50			
	BC848			30			
Collector- emitter breakdown voltage	BC846	V_{CEO}	I_C= 1 mA, I_B= 0	65			
	BC847			45			
	BC848			30			
Emitter - base breakdown voltage		V_{EBO}	I_E= 100 μA, I_C= 0	6			
Collector-base cut-off current	BC846	I_{CBO}	V_{CB}= 70 V , I_E= 0			100	nA
	BC847		V_{CB}= 50 V , I_E= 0				
	BC848		V_{CB}= 30 V, I_E= 0				
Collector- emitter cut-off current	BC846	I_{CEO}	V_{CE}= 60 V , I_E= 0			1	uA
	BC847		V_{CE}= 45 V , I_E= 0				
	BC848		V_{CE}= 30 V , I_E= 0				
Emitter cut-off current		I_{EBO}	V_{EB}= 5V , I_C=0			100	nA
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C=100 mA, I_B=5mA			0.4	V
Base - emitter saturation voltage		$V_{BE(sat)}$	I_C=100 mA, I_B=5mA			1.1	
DC current gain	BC846A,847A,848A	h_{FE}	V_{CE}= 5V, I_C= 2mA	110		220	
	BC846B,847B,848B			200		450	
	BC846C,847C,848C			420		800	
Collector output capacitance		C_{ob}	V_{CB}= 10V,f= 1 MHz			4.5	pF
Transition frequency		f_T	V_{CE}= 5V, I_C= 10mA,f=100MHz	100			MHz

Classification of h_{fe}

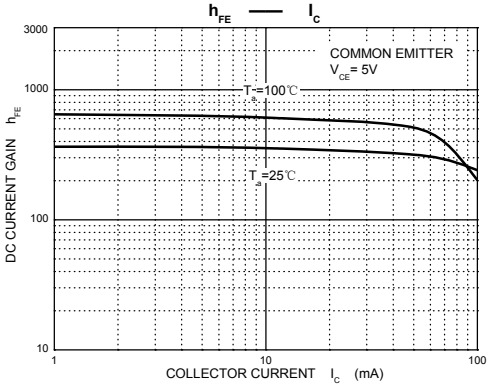
Type	BC846A	BC846B	BC846C	BC847A	BC847B	BC847C	BC848A	BC848B	BC848C
Range	110-220	220-450	420-800	110-220	220-450	420-800	110-220	220-450	420-800
Marking	1A	1B	1C	1E	1F	1G	1J	1K	1L

■ Typical Characterisitics

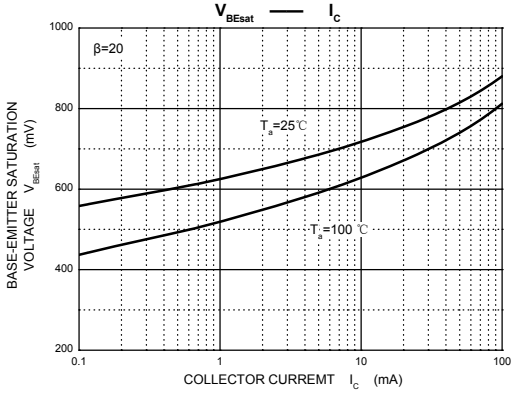
Static Characteristic



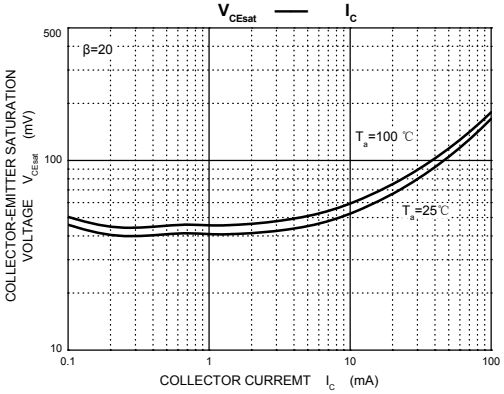
h_{FE} — I_C



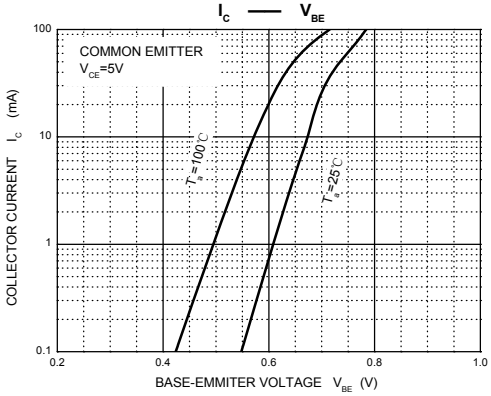
V_{BEsat} — I_C



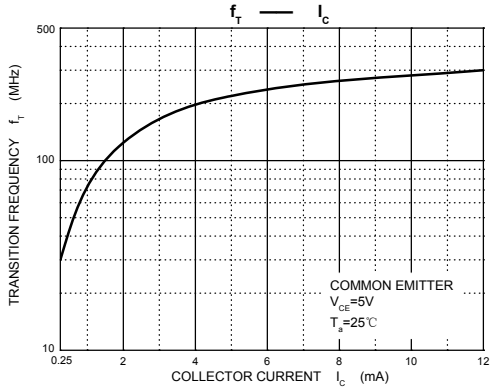
V_{CEsat} — I_C



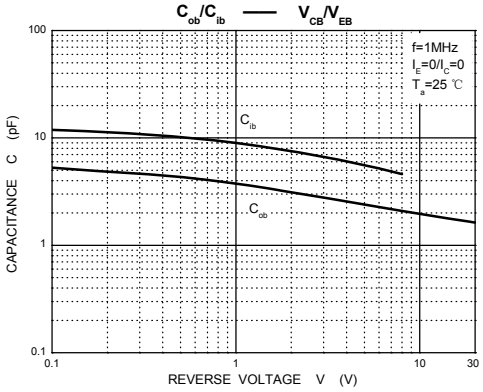
I_C — V_{BE}



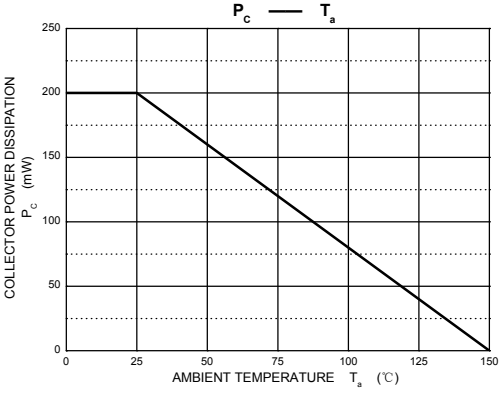
f_T — I_C



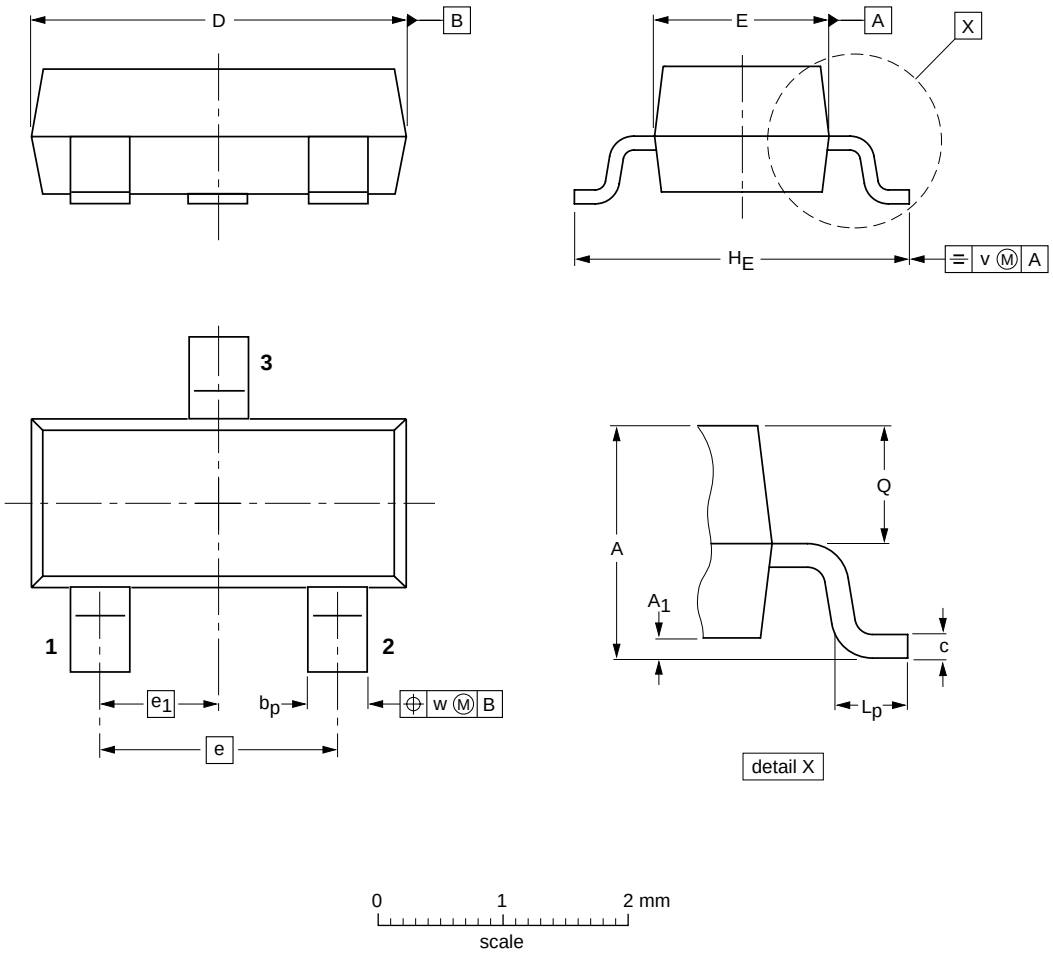
C_{ob}/C_{ib} — V_{CB}/V_{EB}



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