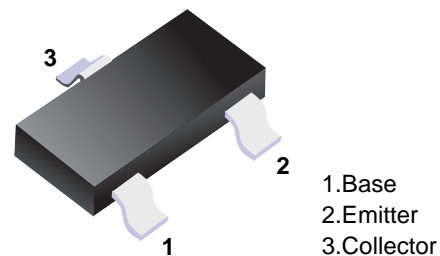


■ NPN Transistors

■ Features

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



■ Simplified outline(SOT-23)

■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	BC846	BC847	BC848	Unit
Collector - Base Voltage	V <sub>CB0</sub>	80	50	30	V
Collector - Emitter Voltage	V <sub>CEO</sub>	65	45	30	
Emitter - Base Voltage	V <sub>EB0</sub>	6	6	6	
Collector Current - Continuous	I <sub>C</sub>	100			mA
Collector Power Dissipation	P <sub>C</sub>	200			mW
Junction Temperature	T <sub>J</sub>	150			°C
Storage Temperature Range	T <sub>stg</sub>	-55 to 150			

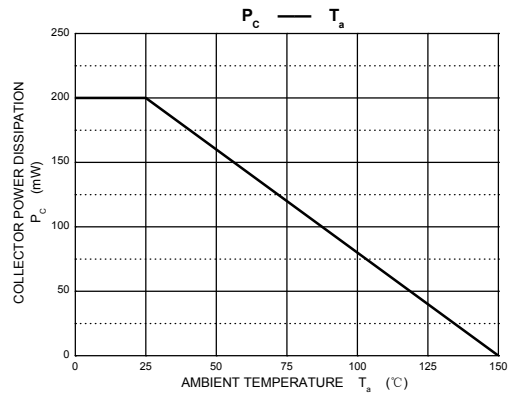
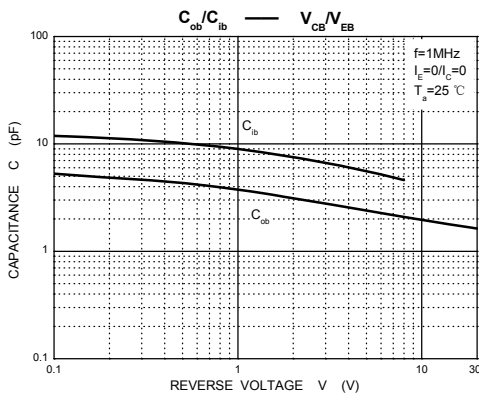
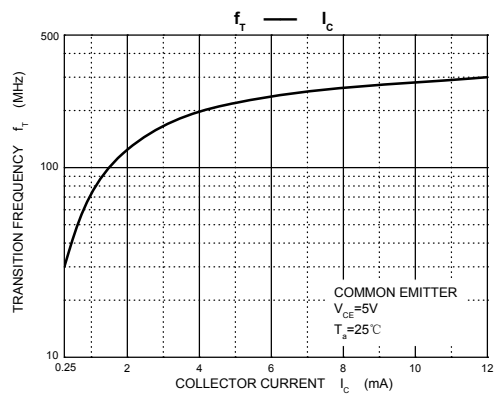
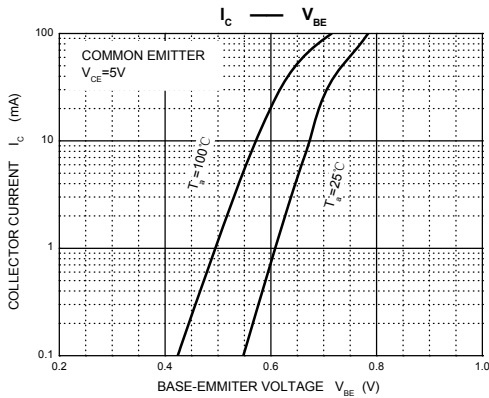
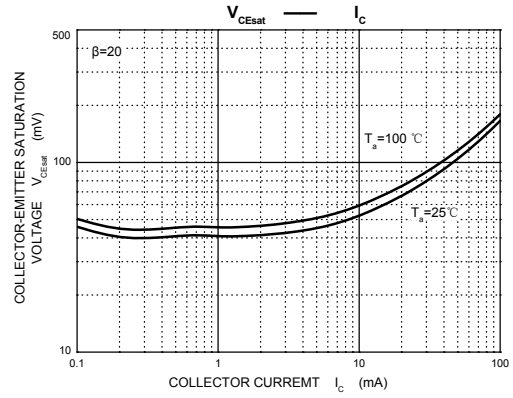
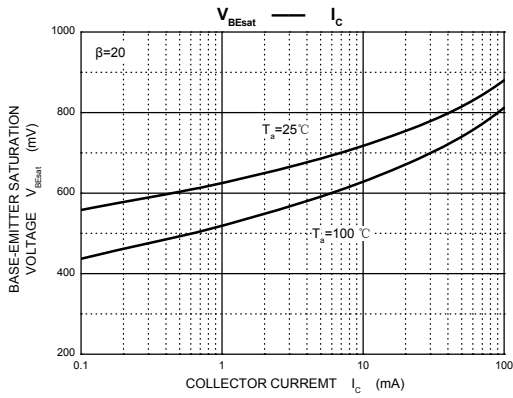
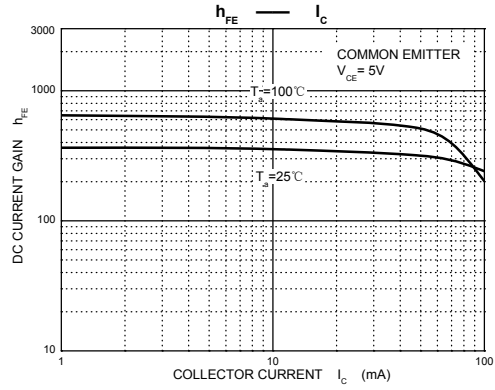
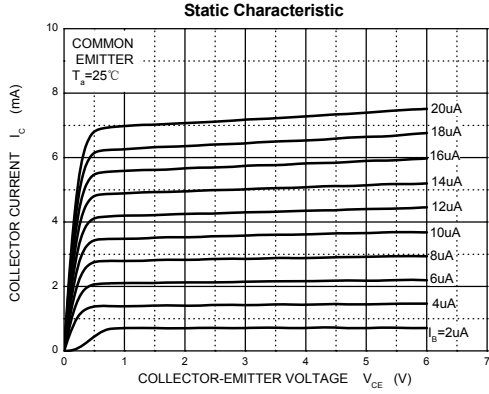
■ Electrical Characteristics Ta = 25°C

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

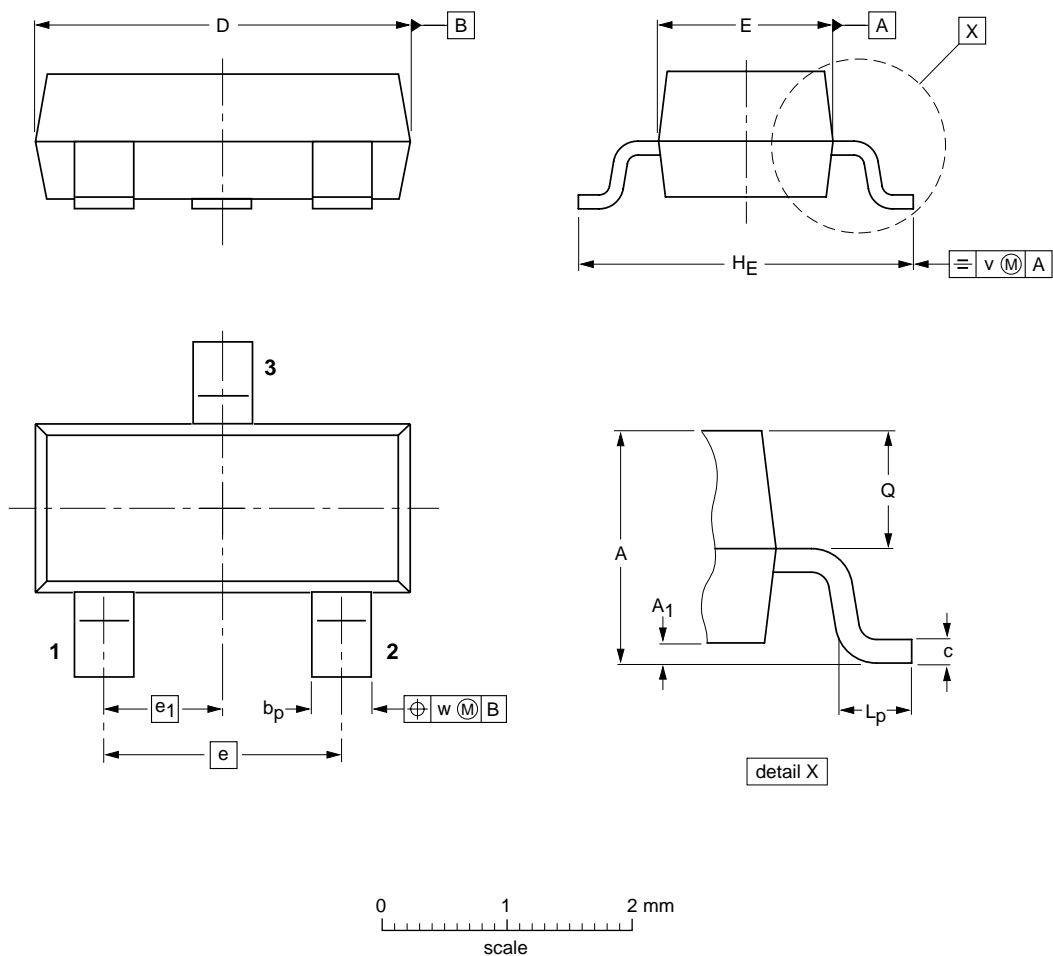
■ Classification of hfe

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 Characteristics



■ SOT-23



**DIMENSIONS (mm are the original dimensions)**

UNIT	A	A <sub>1</sub> max.	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	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