

# BC846/847/848/849/850

# NPN EPITAXIAL SILICON TRANSISTOR

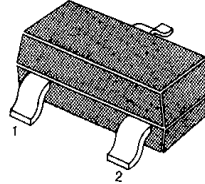
## SWITCHING AND AMPLIFIER APPLICATIONS

- Suitable for automatic insertion in thick and thin-film circuits
- LOW NOISE: BC849, BC850
- Complement to BC856 ... BC860

## ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C)

Characteristic	Symbol	Rating	Unit
Collector Base Voltage	V <sub>CBO</sub>	80	V
: BC846		50	V
: BC847/850		30	V
Collector Emitter Voltage	V <sub>CEO</sub>	65	V
: BC846		45	V
: BC848/849		30	V
Emitter-Base Voltage	V <sub>EBO</sub>	6	V
: BC846/847		5	V
: BC848/849/850			
Collector Current (DC)	I <sub>C</sub>	100	mA
Collector Dissipation	P <sub>C</sub>	310	mW
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-65 ~ 150	°C

SOT-23



1. Base 2. Emitter 3. Collector

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-off Current	I <sub>CBO</sub>	V <sub>CB</sub> =30V, I <sub>E</sub> =0			15	nA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =2mA	110		800	
Collector Emitter Saturation Voltage	V <sub>CE</sub> (sat)	I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA		90	250	mV
Collector Base Saturation Voltage	V <sub>BE</sub> (sat)	I <sub>C</sub> =100mA, I <sub>B</sub> =5mA		200	600	mV
		I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA		700		mV
Base Emitter On Voltage	V <sub>BE</sub> (on)	I <sub>C</sub> =100mA, I <sub>B</sub> =5mA		900		mV
		V <sub>CE</sub> =5V, I <sub>C</sub> =2mA	580	660	700	mV
Current Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =10mA		300	720	MHz
		f=100MHz				
Collector Base Capacitance	C <sub>CBO</sub>	V <sub>CB</sub> =10V, f=1MHz		3.5	6	pF
Emitter Base Capacitance	C <sub>EBO</sub>	V <sub>EB</sub> =0.5V, f=1MHz		9		pF
Noise Figure	NF	V <sub>CE</sub> =5V, I <sub>C</sub> =200μA		2	10	dB
		f=1KHz, R <sub>G</sub> =2KΩ		1.2	4	dB
		V <sub>CE</sub> =5V, I <sub>C</sub> =200μA		1.4	4	dB
		R <sub>G</sub> =2KΩ		1.4	3	dB
		f=30~15000Hz				

## h<sub>FE</sub> CLASSIFICATION

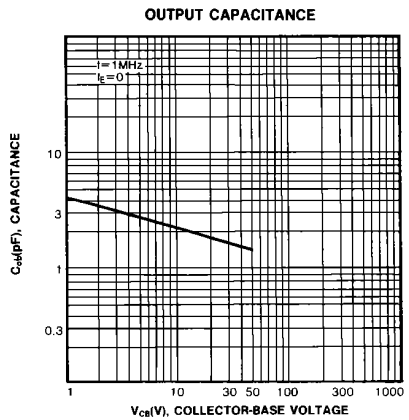
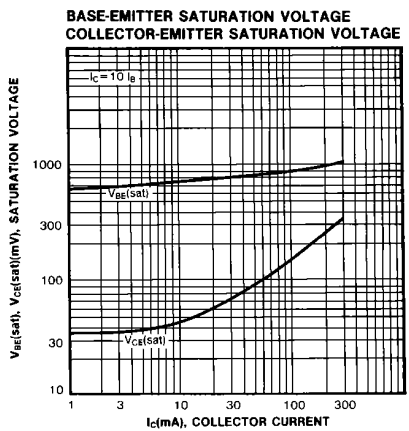
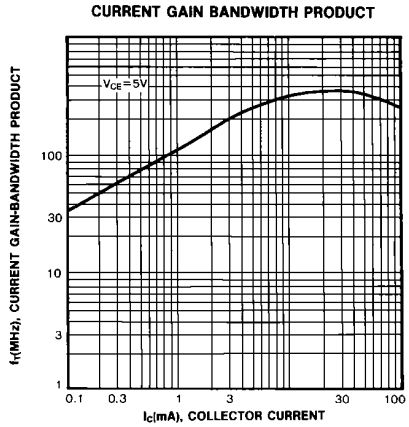
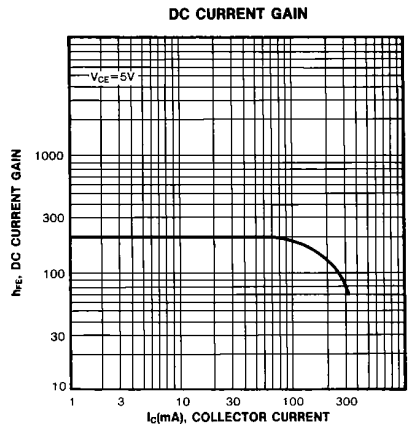
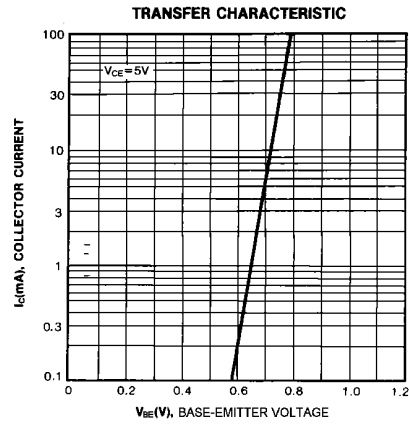
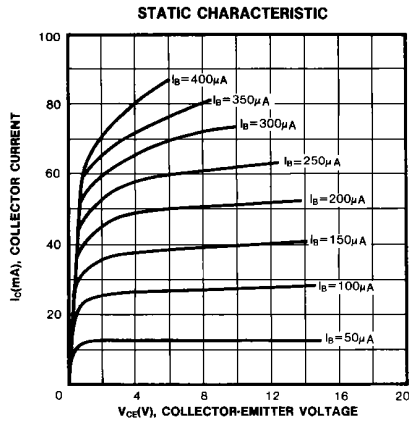
Classification	A	B	C
h <sub>FE</sub>	110-220	200-450	420-800

## MARKING CODE

TYPE	846A	846B	846C	847A	847B	847C	848A	848B	848C	849A	849B	849C	850A	850B	850C
MARK	8AA	8AB	8AC	8BA	8BB	8BC	8CA	8CB	8CC	8DA	8DB	8DC	8EA	8EB	8EC

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