

BC846/847/848/849/850

NPN EPITAXIAL SILICON TRANSISTOR

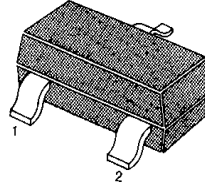
SWITCHING AND AMPLIFIER APPLICATIONS

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

ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

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

SOT-23



1. Base 2. Emitter 3. Collector

ELECTRICAL CHARACTERISTICS (T_A=25°C)

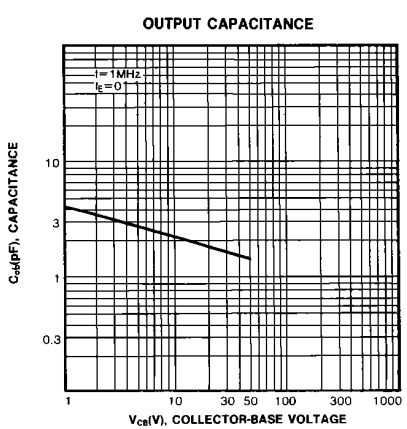
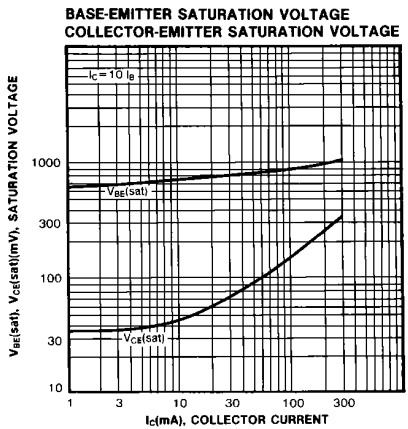
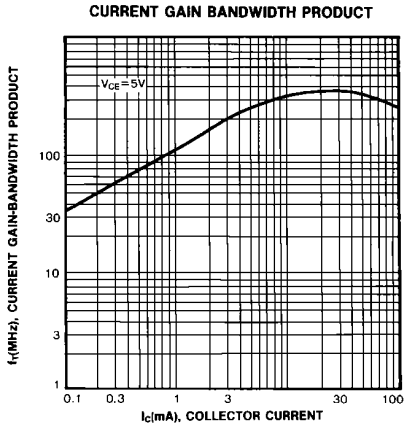
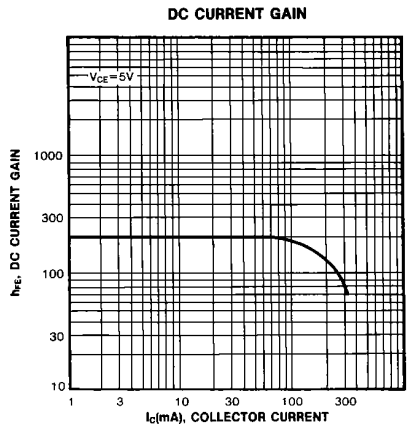
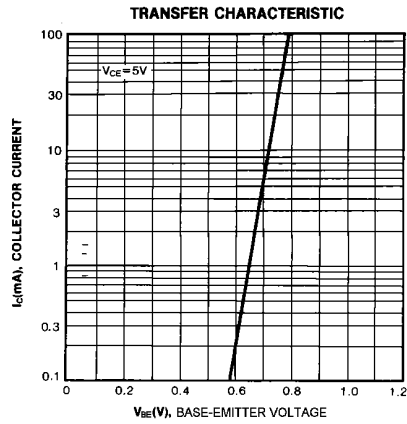
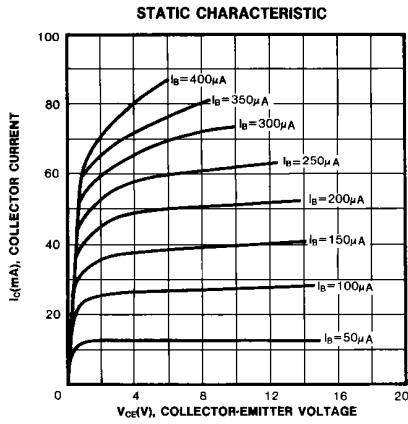
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-off Current	I _{CBO}	V _{CB} =30V, I _E =0			15	nA
DC Current Gain	h _{FE}	V _{CE} =5V, I _C =2mA	110		800	
Collector Emitter Saturation Voltage	V _{CE} (sat)	I _C =10mA, I _B =0.5mA		90	250	mV
Collector Base Saturation Voltage	V _{BE}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

h_{FE} CLASSIFICATION

Classification	A	B	C
h _{FE}	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



TRADEMARKS

The following are registered and unregistered trademarks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

ACEx™	ISOPLANAR™
CoolFET™	MICROWIRE™
CROSSVOLT™	POP™
E ² CMOS™	PowerTrench™
FACT™	QS™
FACT Quiet Series™	Quiet Series™
FAST®	SuperSOT™-3
FASTr™	SuperSOT™-6
GTO™	SuperSOT™-8
HiSeC™	TinyLogic™

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.