FAIRCHILD SEMICONDUCTOR®

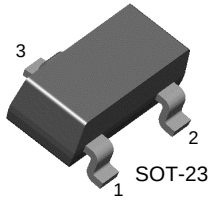
August 2006

BC856- BC860

PNP Epitaxial Silicon Transistor

Features

- Switching and Amplifier Applications
- Suitable for automatic insertion in thick and thin-film circuits
- Low Noise: BC859, BC860
- Complement to BC846 ... BC850



SOT-23

1. Base 2. Emitter 3. Collector

Absolute Maximum Ratings*

T_a = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage		
	: BC856	-80	V
	: BC857/860	-50	V
	: BC858/859	-30	V
V_{CEO}	Collector-Emitter Voltage		
	: BC856	-65	V
	: BC857/860	-45	V
	: BC858/859	-30	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current (DC)	-100	mA
P_C	Collector Power Dissipation	310	mW
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	-65 ~ 150	°C

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Electrical Characteristics*

T_a=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
I_{CBO}	Collector Cut-off Current	V_{CB}= -30V, I_E=0			-15	nA
h_{FE}	DC Current Gain	V_{CE}= -5V, I_C= -2mA	110		800	
V_{CE} (sat)	Collector-Emitter Saturation Voltage	I_C= -10mA, I_B= -0.5mA		-90	-300	mV
		I_C= -100mA, I_B= -5mA		-250	-650	mV
V_{BE} (sat)	Base-Emitter Saturation Voltage	I_C= -10mA, I_B= -0.5mA		-700		mV
		I_C= -100mA, I_B= -5mA		-900		mV
V_{BE} (on)	Base-Emitter On Voltage	V_{CE}= -5V, I_C= -2mA	-600	-660	-750	mV
		V_{CE}= -5V, I_C= -10mA			-800	mV
f_T	Current Gain Bandwidth Product	V_{CE}= -5V, I_C= -10mA f=100MHz		150		MHz
C_{ob}	Output Capacitance	V_{CB}= -10V, I_E=0, f=1MHz			6	pF
NF	Noise Figure					
	: BC856/857/858	V_{CE}= -5V, I_C= -200μA		2	10	dB
	: BC859/860	R_G=2KΩ, f=1KHz		1	4	dB
	: BC859	V_{CE}= -5V, I_C= -200μA		1.2	4	dB
	: BC860	R_G=2KΩ, f=30~15000Hz		1.2	2	dB

* Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%

h_{FE} Classification

Classification	A	B	C
h_{FE}	110 ~ 220	200 ~ 450	420 ~ 800

Ordering Information

Device(note1)	Device Marking	Package	Packing Method	Qty(pcs)	Pin Difinitions
BC856AMTF	9AA	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC856BMTF	9AB	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC856CMTF	9AC	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC857AMTF	9BA	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC857BMTF	9BB	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC857CMTF	9BC	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC858AMTF	9CA	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC858BMTF	9CB	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC858CMTF	9CC	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC859AMTF	9DA	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC859BMTF	9DB	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC859CMTF	9DC	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC860AMTF	9EA	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC860BMTF	9EB	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC860CMTF	9EC	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector

Note1 : Affix “-A,-B,-C” means hFE classification.
Affix “-M” means the matte type package.
Affix “-TF” means the tape & reel type packing.

Typical Performance Characteristics

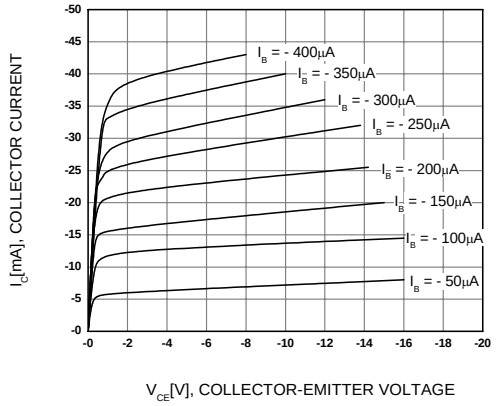


Figure 1. Static Characteristic

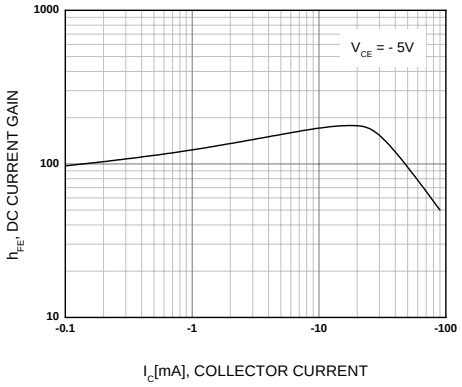


Figure 2. DC current Gain

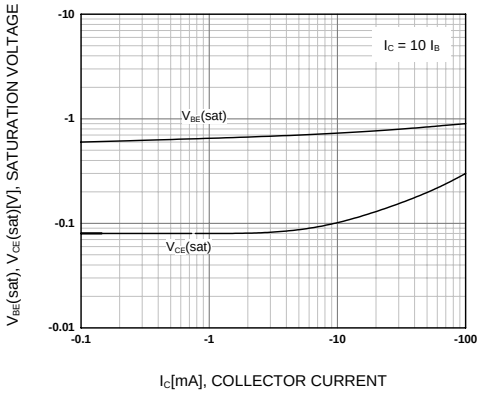


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

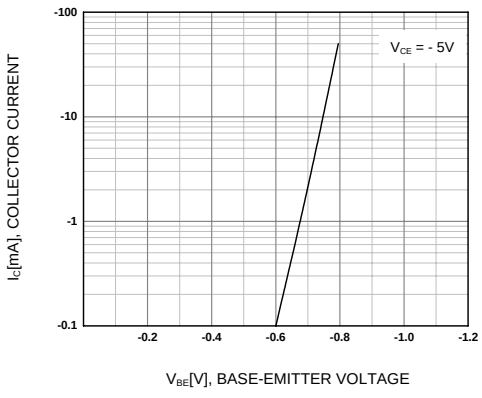


Figure 4. Base-Emitter On Voltage

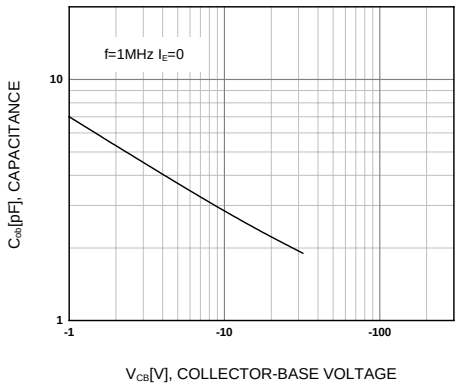


Figure 5. Collector Output Capacitance

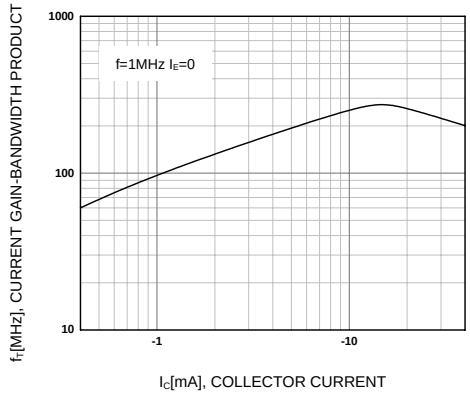
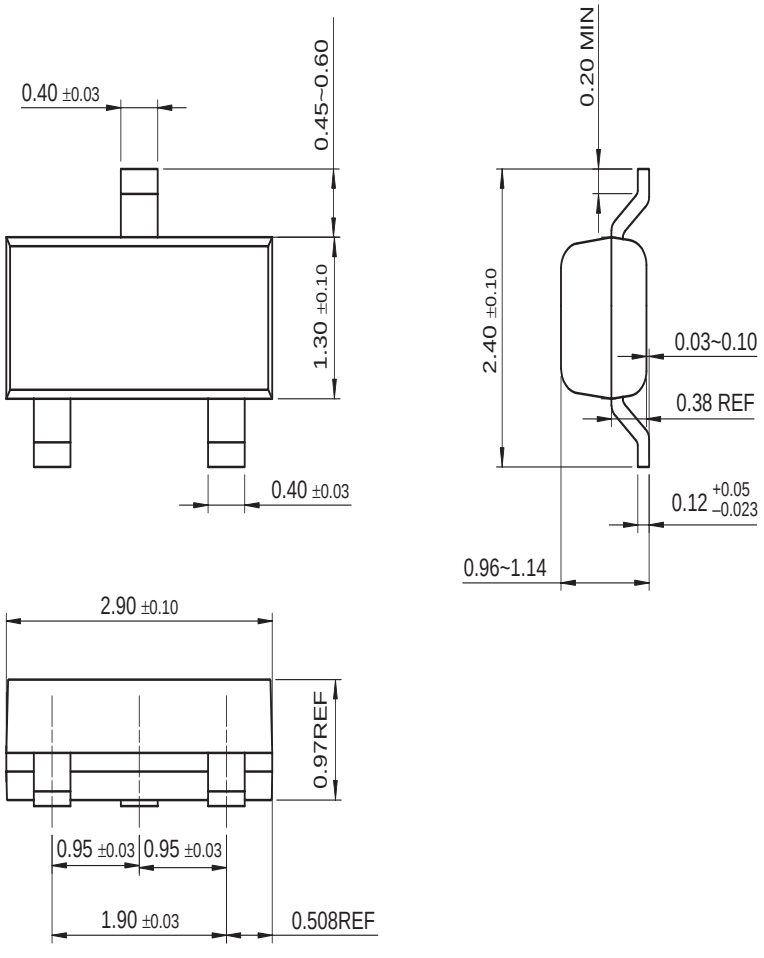


Figure 6. Current Gain Bandwidth Product

Mechanical Dimensions

SOT-23



Dimensions in Millimeters

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