

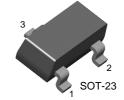
August 2006

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



1. Base 2. Emitter 3. Collector

Absolute Maximum Ratings* $T_a = 25^{\circ}C$ 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
TJ	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.	Тур.	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 I _C = -100mA, I _B = -5mA		-90 -250	-300 -650	mV mV
V _{BE} (sat)	Base-Emitter Saturation Voltage	I _C = -10mA, I _B = -0.5mA I _C = -100mA, I _B = -5mA		-700 -900		mV mV
V _{BE} (on)	Base-Emitter On Voltage	V_{CE} = -5V, I_{C} = -2mA V_{CE} = -5V, I_{C} = -10mA	-600	-660	-750 -800	mV 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 : BC859/860	V_{CE} = -5V, I_{C} = -200μA R_{G} =2K Ω , f=1KHz		2	10 4	dB dB
	: BC859 : BC860	V_{CE} = -5V, I_{C} = -200μA R_{G} =2K Ω , f=30~15000Hz		1.2 1.2	4 2	dB dB

^{*} Pulse Test: Pulse Width \leq 300 μ s, Duty Cycle \leq 2%

h_{FE} Classification

Classification	A	В	С	
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

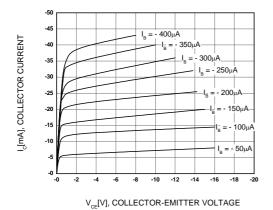


Figure 1. Static Characteristic

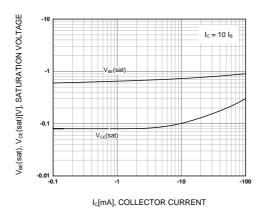


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

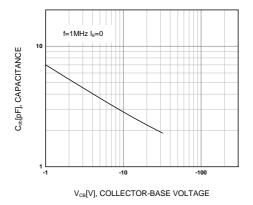


Figure 5. Collector Output Capacitance

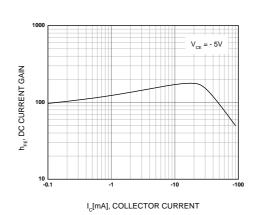


Figure 2. DC current Gain

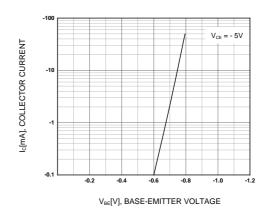


Figure 4. Base-Emitter On Voltage

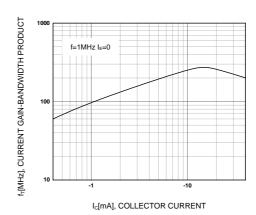
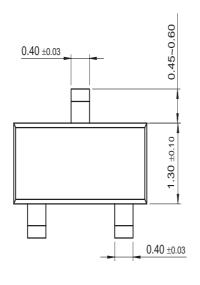
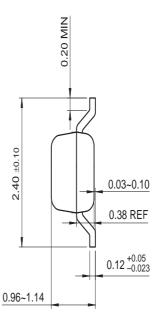


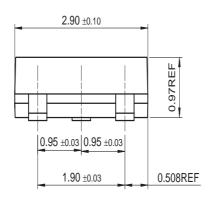
Figure 6. Current Gain Bandwidth Product

Mechanical Dimensions

SOT-23







Dimensions in Millimeters

UltraFET[®]

UniFET™

 VCX^{TM}

 $\mathsf{Wire}^{\scriptscriptstyle\mathsf{TM}}$

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Programmable Active Droop™

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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.			
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