

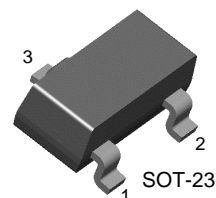


BC856- BC860

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* $T_a = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CB0}	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	$^\circ\text{C}$
T_{STG}	Storage Temperature	-65 ~ 150	$^\circ\text{C}$

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

Electrical Characteristics* $T_a = 25^\circ\text{C}$ unless otherwise noted

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

* Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

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 h_{FE} classification.

Affix "-M" means the matte type package.

Affix "-TF" means the tape & reel type packing.

Typical Performance Characteristics

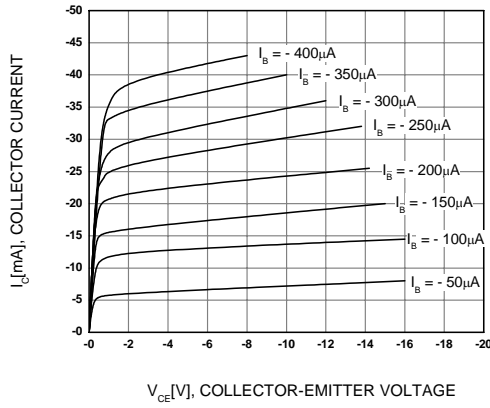


Figure 1. Static Characteristic

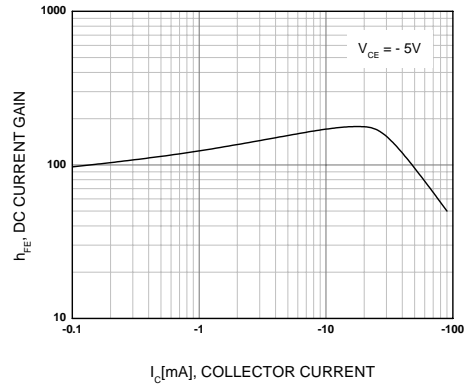


Figure 2. DC current Gain

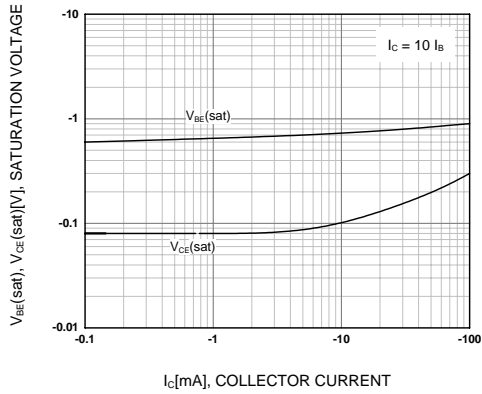


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

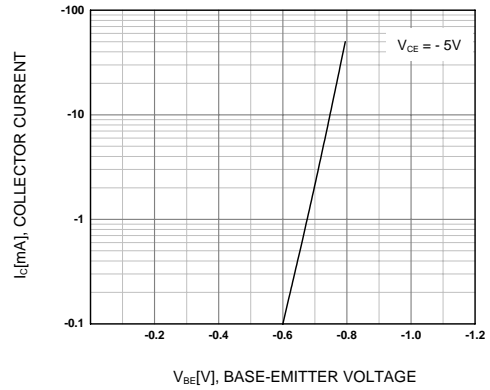


Figure 4. Base-Emitter On Voltage

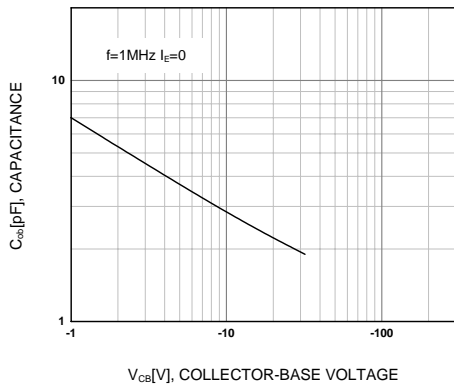


Figure 5. Collector Output Capacitance

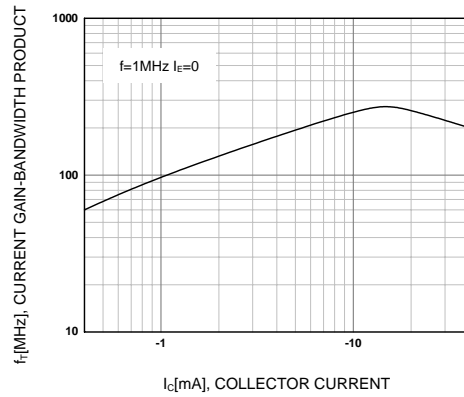
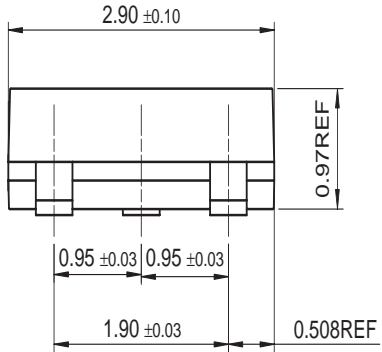
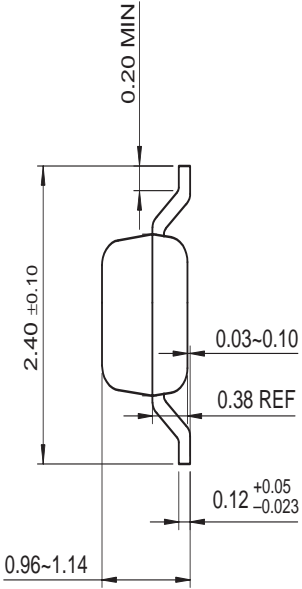
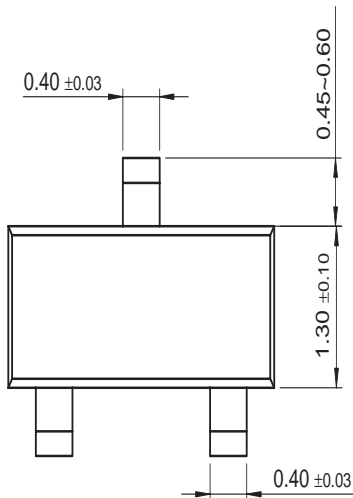


Figure 6. Current Gain Bandwidth Product

Mechanical Dimensions

SOT-23



Dimensions in Millimeters

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DOME TM	ImpliedDisconnect TM	Power247 TM	SuperSOT TM -6	
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E ² CMOS TM	ISOPLANAR TM	PowerSaver TM	SyncFET TM	
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Rev. I20