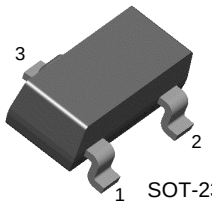
FAIRCHILD
SEMICONDUCTOR®

BC856/857/858/859/860

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

PNP Epitaxial Silicon Transistor

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

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	f=1KHz, R_G=2KΩ		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

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h_{FE} Classification

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

Marking Code

Type	856A	856B	856C	857A	857B	857C	858A	858B	858C
Mark	9AA	9AB	9AC	9BA	9BB	9BC	9CA	9CB	9CC

Type	859A	859B	859C	860A	860B	860C
Mark	9DA	9DB	9DC	9EA	9EB	9EC

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Typical Characteristics

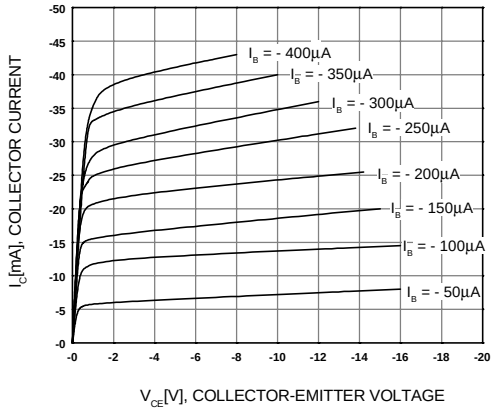

Figure 1. Static Characteristic

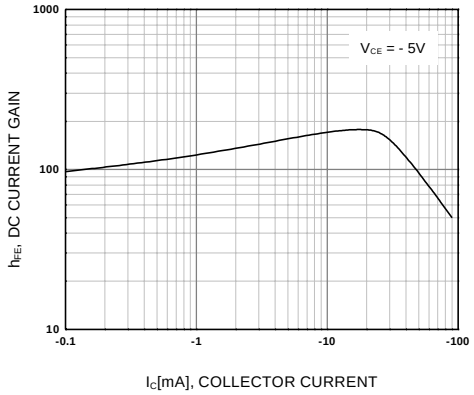

Figure 2. DC current Gain

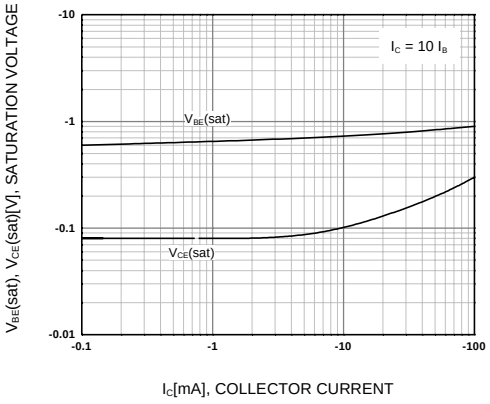

Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

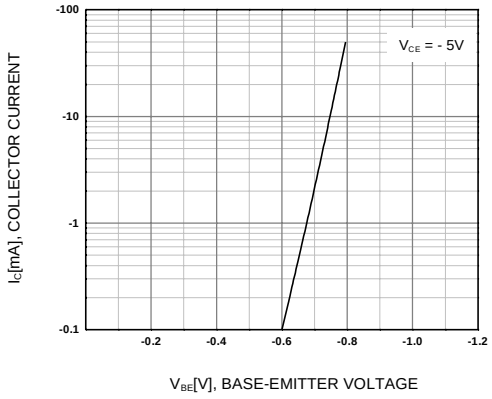

Figure 4. Base-Emitter On Voltage

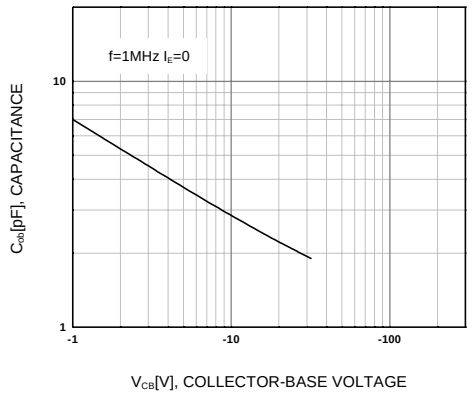

Figure 5. Collector Output Capacitance

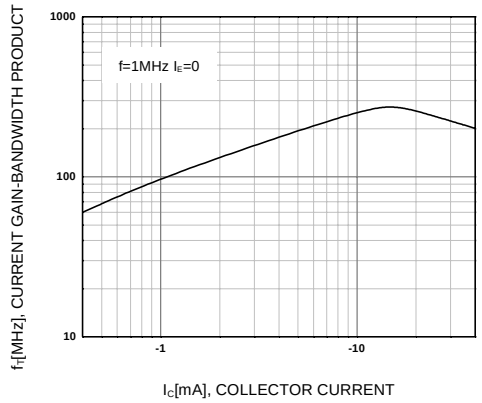

Figure 6. Current Gain Bandwidth Product

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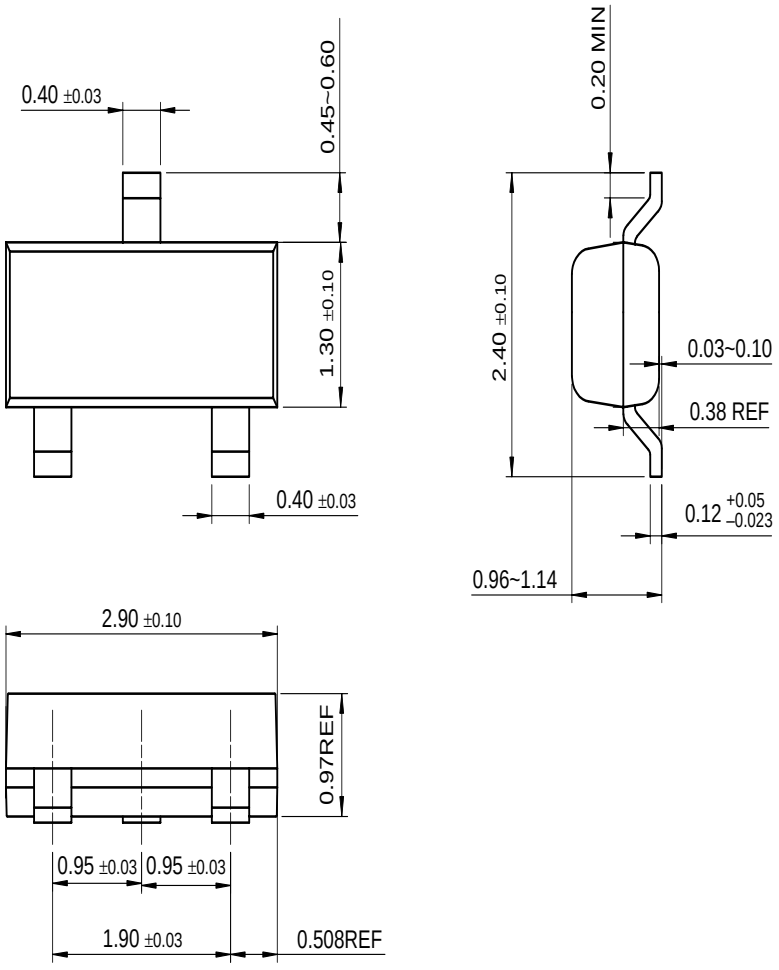
Package Dimensions

SOT-23



Dimensions in Millimeters

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Bottomless™	FAST®	LittleFET™	Power247™	SuperSOT™-3
CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic™
E^2CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	I^2C™	OCX™	RapidConfigure™	UHC™
Across the board. Around the world.™		OCXPro™	RapidConnect™	UltraFET®
The Power Franchise™		OPTOLOGIC®	SILENT SWITCHER®	VCX™
Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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