FAIRCHILD SEMICONDUCTOR®

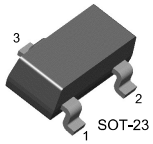
August 2006

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 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=2KΩ, f=1KHz		2 1	10 4	dB dB
	: BC859 : BC860	V_{CE}= -5V, I_C= -200μA R_G=2KΩ, f=30~15000Hz		1.2 1.2	4 2	dB dB

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

Typical Performance Characteristics

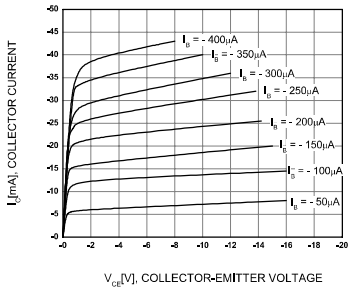


Figure 1. Static Characteristic

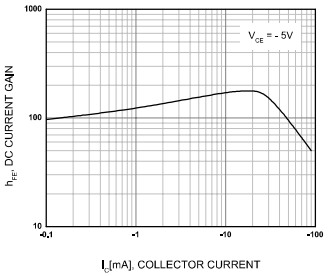


Figure 2. DC current Gain

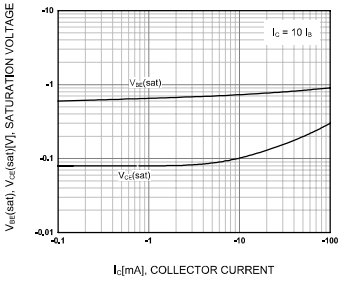


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

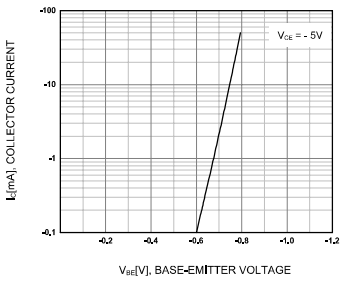


Figure 4. Base-Emitter On Voltage

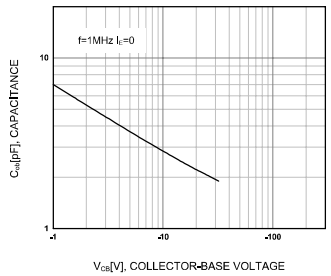


Figure 5. Collector Output Capacitance

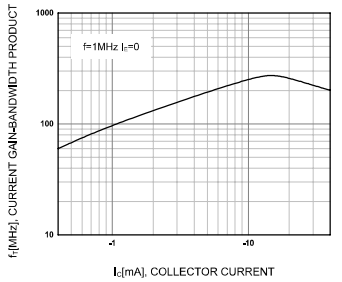


Figure 6. Current Gain Bandwidth Product