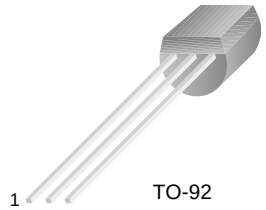
FAIRCHILD SEMICONDUCTOR®

October 2012

BC556/557/558/559/560
PNP Epitaxial Silicon Transistor

Features

- Switching and Amplifier
- High Voltage: BC556, V_{CEO} = -65V
- Low Noise: BC559, BC560
- Complement to BC546 ... BC 550



TO-92

1. Collector 2. Base 3. Emitter

Absolute Maximum Ratings T_a = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage		
	: BC556	-80	V
	: BC557/560	-50	V
	: BC558/559	-30	V
V_{CEO}	Collector-Emitter Voltage		
	: BC556	-65	V
	: BC557/560	-45	V
	: BC558/559	-30	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current (DC)	-100	mA
P_C	Collector Power Dissipation	500	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)	Collector-Base 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=10MHz		150		MHz
C_{ob}	Output Capacitance	V_{CB}= -10V, I_E=0, f=1MHz			6	pF
NF	Noise Figure : BC556/557/558	V_{CE}= -5V, I_C= -200μA		2	10	dB
	: BC559/560	f=1KHz, R_G=2KΩ		1	4	dB
	: BC559	V_{CE}= -5V, I_C= -200μA		1.2	4	dB
	: BC560	R_G=2KΩ, f=30~15000MHz		1.2	2	dB

h_{FE} Classification

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

Typical Performance Characteristics

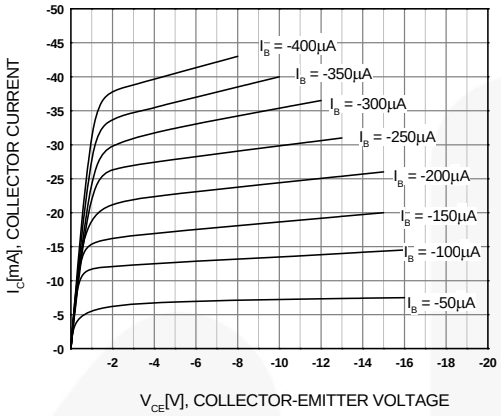


Figure 1. Static Characteristic

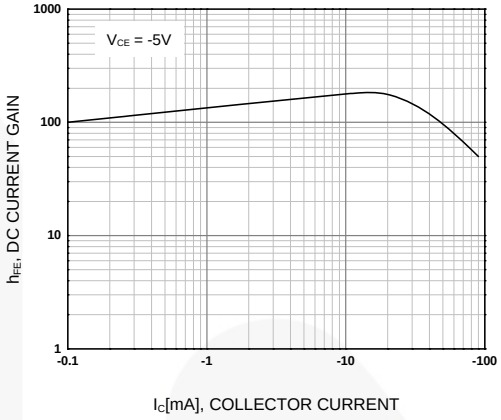


Figure 2. DC current Gain

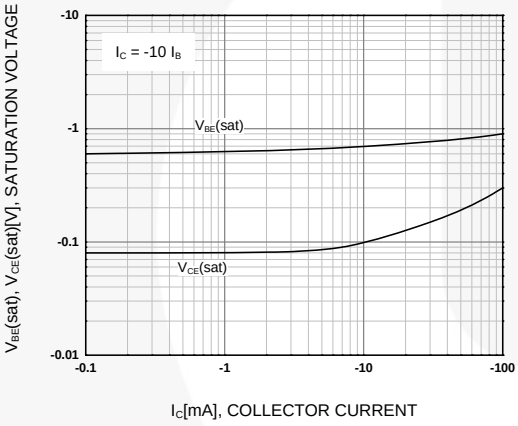


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

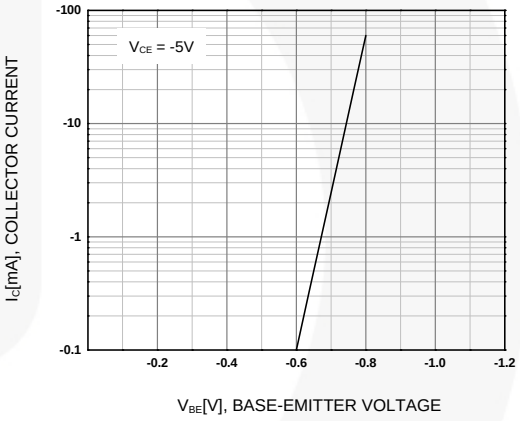


Figure 4. Base-Emitter On Voltage

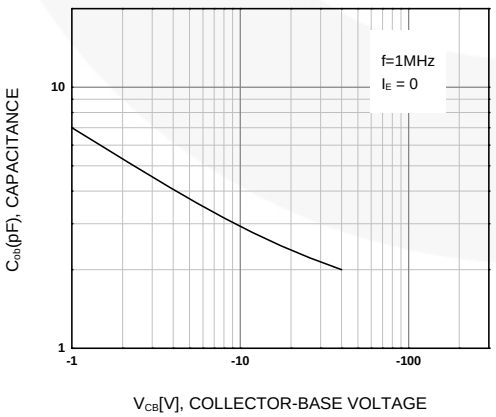


Figure 5. Collector Output Capacitance

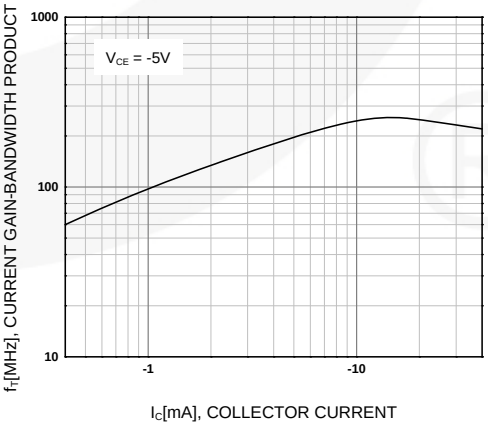
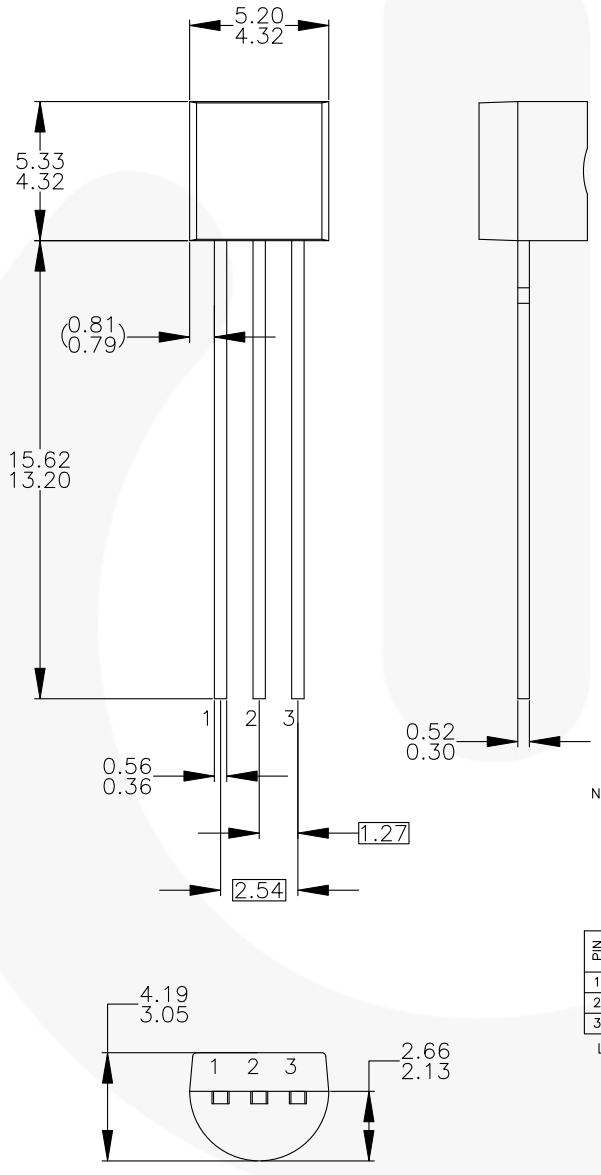


Figure 6. Current Gain Bandwidth Product

Physical Dimensions

TO-92



NOTES: UNLESS OTHERWISE SPECIFIED

A) DRAWING WITH REFERENCE TO JEDEC TO-92 RECOMMENDATIONS.
B) ALL DIMENSIONS ARE IN MILLIMETERS.
C) DRAWING CONFORMS TO ASME Y14.5M-1994.
D) TO-92 (92,94,96,97,98) PIN CONFIGURATION:

PIN	92			94			96			97			98		
	P	F	M	P	F	M	B	F	M	P	F	M	P	F	M
1	E	S	S	E	S	S	B	D	G	C	G	D	C	G	D
2	B	D	G	C	G	D	E	S	S	B	D	G	E	S	S
3	C	G	D	B	D	G	C	G	D	E	S	S	B	D	G

LEGEND:
P – BIPOLAR
F – JFET
M – DMOS
E – EMITTER
B – BASE
C – COLLECTOR
D – DRAIN
S – SOURCE
G – GATE

E) FOR PACKAGE 92, 94, 96, 97 AND 98: PIN CONFIGURATION DRAIN "D" AND SOURCE "S" ARE INTERCHANGEAGLE AT JFET "F" OPTION.
F) DRAWING FILENAME: MKT-ZA03DREV3.

Dimensions in Millimeters

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Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
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