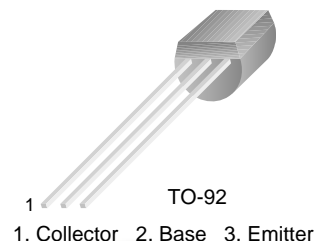


BC556/557/558/559/560

PNP Epitaxial Silicon Transistor

Features

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



Absolute Maximum Ratings $T_a = 25^\circ C$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage : BC556 : BC557/560 : BC558/559	-80 -50 -30	V V V
V_{CEO}	Collector-Emitter Voltage : BC556 : BC557/560 : BC558/559	-65 -45 -30	V V 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	$^\circ C$
T_{STG}	Storage Temperature	-65 ~ 150	$^\circ C$

Electrical Characteristics $T_a = 25^\circ C$ 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
$V_{BE(sat)}$	Collector-Base 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	$V_{CE} = -5V, I_C = -10mA, f = 10MHz$		150		MHz
C_{ob}	Output Capacitance	$V_{CB} = -10V, I_E = 0, f = 1MHz$			6	pF
NF	Noise Figure : BC556/557/558 : BC559/560 : BC559 : BC560	$V_{CE} = -5V, I_C = -200\mu A$ $f = 1KHz, R_G = 2K\Omega$ $V_{CE} = -5V, I_C = -200\mu A$ $R_G = 2K\Omega, f = 30 \sim 15000MHz$		2 1 1.2 1.2	10 4 4 2	dB dB dB dB

h_{FE} Classification

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

Typical Performance Characteristics

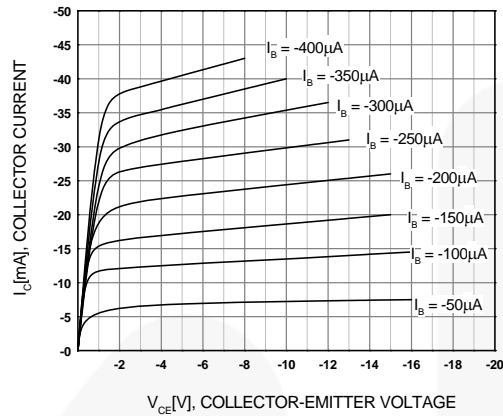


Figure 1. Static Characteristic

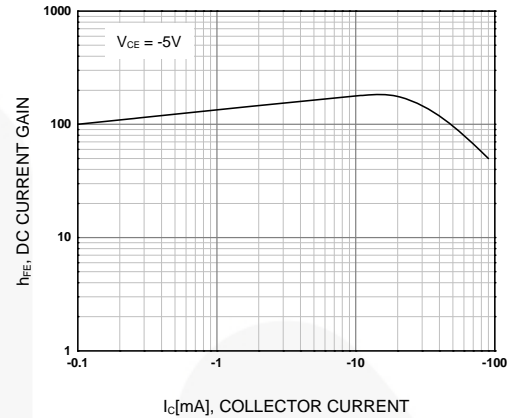


Figure 2. DC current Gain

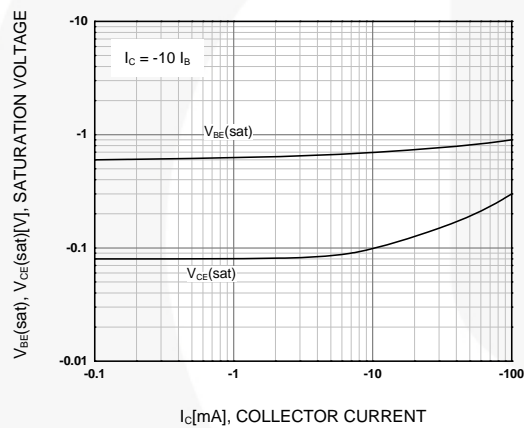


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

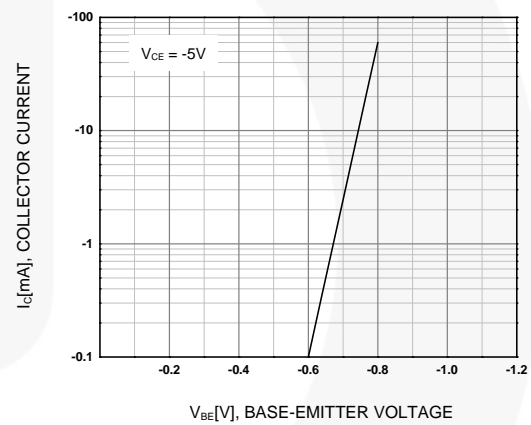


Figure 4. Base-Emitter On Voltage

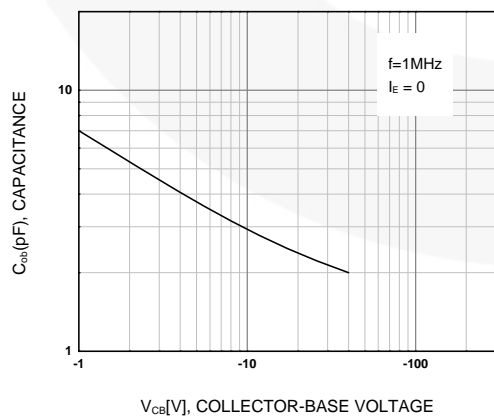


Figure 5. Collector Output Capacitance

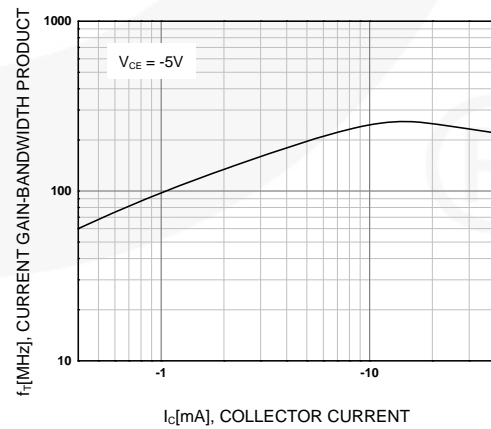
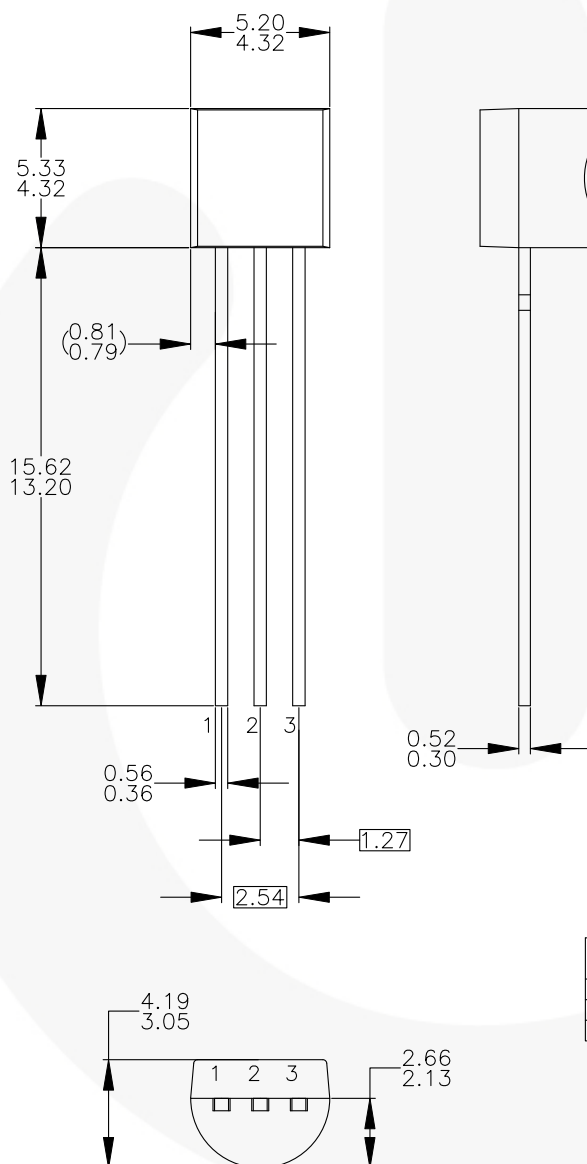


Figure 6. Current Gain Bandwidth Product

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
1	E	S	S	E	S
2	B	D	G	C	G
3	C	G	D	B	D

LEGEND:

P - BIPOLAR
 F - JFET
 M - DMOS

E - EMITTER
 B - BASE
 C - COLLECTOR

D - DRAIN
 S - SOURCE
 G - GATE




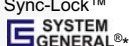
- E) FOR PACKAGE 92, 94, 96, 97 AND 98:
 PIN CONFIGURATION DRAIN "D" AND SOURCE "S"
 ARE INTERCHANGEABLE AT JFET "F" OPTION.
 F) DRAWING FILENAME: MKT-ZA03DREV3.

Dimensions in Millimeters



TRADEMARKS

The following includes registered and unregistered trademarks and service marks, owned by Fairchild Semiconductor and/or its global subsidiaries, and is not intended to be an exhaustive list of all such trademarks.

2Cool™	F-PFS™	PowerTrench®	The Power Franchise®
AccuPower™	FRFET®	PowerXS™	the power franchise
AX-CAP™*	Global Power Resource™	Programmable Active Droop™	TinyBoost™
BitSiC™	GreenBridge™	QFET®	TinyBuck™
Build it Now™	Green FPS™	QS™	TinyCalc™
CorePLUS™	Green FPS™ e-Series™	Quiet Series™	TinyLogic®
CorePOWER™	Gmax™	RapidConfigure™	TINYOPTO™
CROSSVOL™	GTO™		TinyPower™
CTL™	IntelliMAX™	Saving our world, 1mW/W/kW at a time™	TinyPWM™
Current Transfer Logic™	ISOPLANAR™	SignalWise™	TinyWire™
DEUXPEED®	Making Small Speakers Sound Louder and Better™	SmartMax™	TranSiC™
Dual Cool™	MegaBuck™	SMART START™	TriFault Detect™
EcoSPARK®	MICROCOUPLER™	Solutions for Your Success™	TRUECURRENT®*
EfficientMax™	MicroFET™	SPM®	µSerDes™
ESBC™	MicroPak™	STEALTH™	
	MicroPak2™	SuperFET®	UHC®
Fairchild®	MillerDrive™	SuperSOT™-3	Ultra FRFET™
Fairchild Semiconductor®	MotionMax™	SuperSOT™-6	UniFET™
FACT Quiet Series™	mWSaver™	SuperSOT™-8	VCX™
FACT®	OptoHiT™	SupreMOS®	VisualMax™
FAST®	OPTOLOGIC®	SyncFET™	VoltagePlus™
FastvCore™	OPTOPLANAR®	Sync-Lock™	XS™
FETBench™			
FlashWriter®*			
FPS™			

* Trademarks of System General Corporation, used under license by Fairchild Semiconductor.

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION, OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS. THESE SPECIFICATIONS DO NOT EXPAND THE TERMS OF FAIRCHILD'S WORLDWIDE TERMS AND CONDITIONS, SPECIFICALLY THE WARRANTY THEREIN, WHICH COVERS THESE PRODUCTS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support, device, or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

ANTI-COUNTERFEITING POLICY

Fairchild Semiconductor Corporation's Anti-Counterfeiting Policy. Fairchild's Anti-Counterfeiting Policy is also stated on our external website, www.fairchildsemi.com, under Sales Support.

Counterfeiting of semiconductor parts is a growing problem in the industry. All manufacturers of semiconductor products are experiencing counterfeiting of their parts. Customers who inadvertently purchase counterfeit parts experience many problems such as loss of brand reputation, substandard performance, failed applications, and increased cost of production and manufacturing delays. Fairchild is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. Fairchild strongly encourages customers to purchase Fairchild parts either directly from Fairchild or from Authorized Fairchild Distributors who are listed by country on our web page cited above. Products customers buy either from Fairchild directly or from Authorized Fairchild Distributors are genuine parts, have full traceability, meet Fairchild's quality standards for handling and storage and provide access to Fairchild's full range of up-to-date technical and product information. Fairchild and our Authorized Distributors will stand behind all warranties and will appropriately address any warranty issues that may arise. Fairchild will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources. Fairchild is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative / In Design	Datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
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.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

Rev. 162

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Fairchild Semiconductor:

[BC558_D81Z](#) [BC558TFR](#) [BC558BTFR](#) [BC558TAR](#) [BC558B_D74Z](#) [BC558C_J35Z](#) [BC558C_Q](#) [BC558B_Q](#)
[BC558CTA_Q](#) [BC558_Q](#)