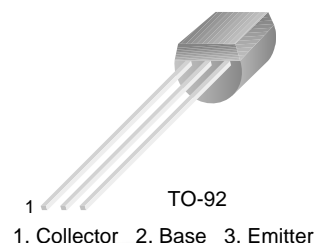


# BC556/557/558/559/560

## 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	-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	$^\circ C$
$T_{STG}$	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	$I_C = -10mA, I_B = -0.5mA$		-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		2	10	dB
		: BC559/560	$V_{CE} = -5V, I_C = -200\mu A, f = 1KHz, R_G = 2K\Omega$	1	4	dB
		: BC559	$V_{CE} = -5V, I_C = -200\mu A$	1.2	4	dB
		: BC560	$R_G = 2K\Omega, f = 30 \sim 15000MHz$	1.2	2	dB

### $h_{FE}$ Classification

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

## Typical Performance Characteristics

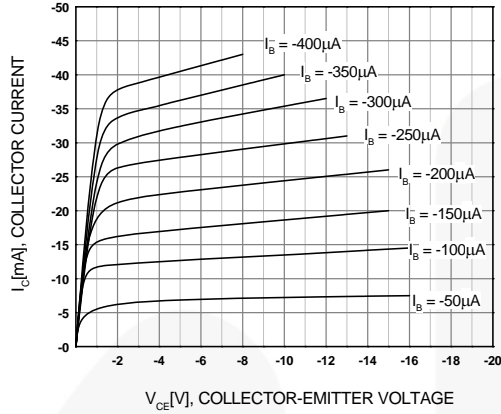


Figure 1. Static Characteristic

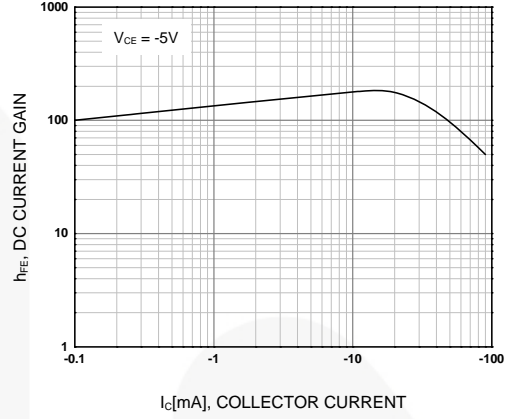


Figure 2. DC current Gain

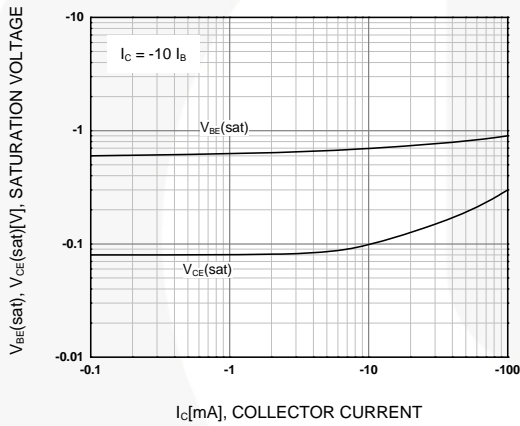


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emmitter Saturation Voltage

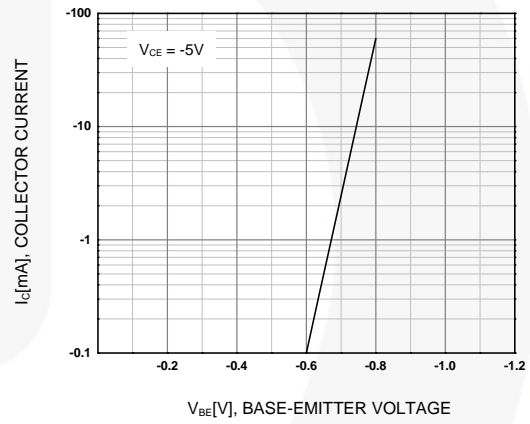


Figure 4. Base-Emitter On Voltage

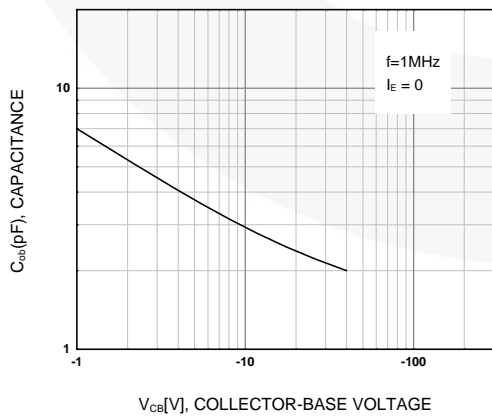


Figure 5. Collector Output Capacitance

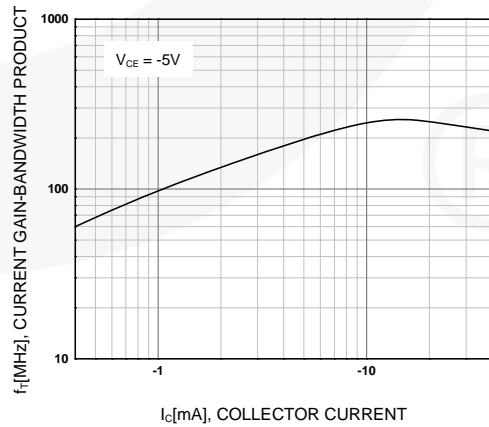
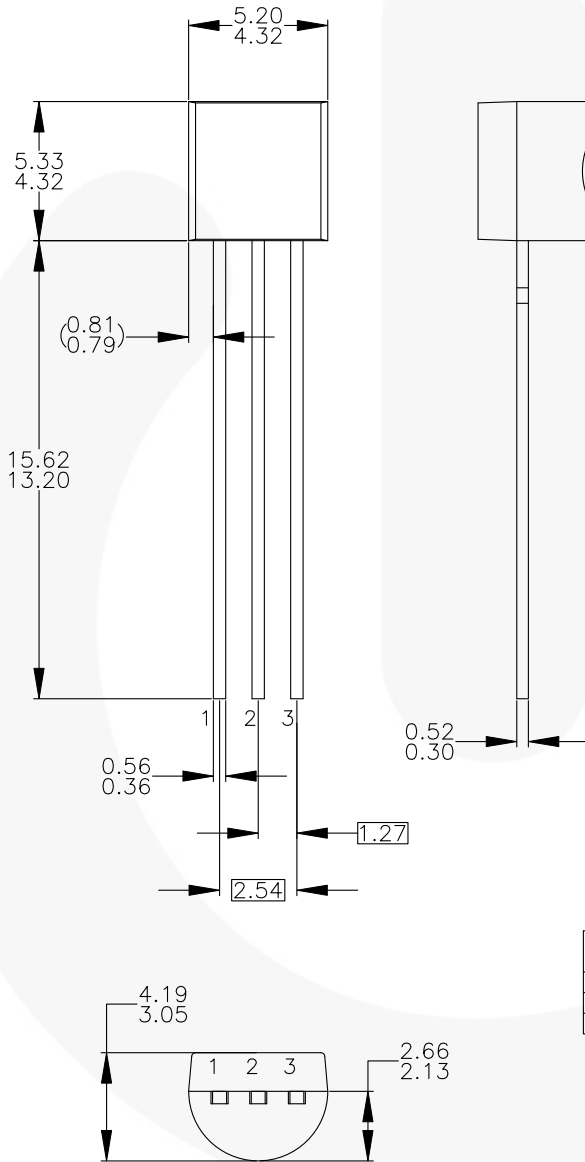


Figure 6. Current Gain Bandwidth Product

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 INTERCHANGEABLE AT JFET "F" OPTION.
- F) DRAWING FILENAME: MKT-ZA03DREV3.

Dimensions in Millimeters



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| BitSiC™  | GreenBridge™                                   | QFET®  | TinyBuck™   |
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| ESBC™  | MicroPak™                                      | STEALTH™   |  SerDes™ |
|  Fairchild® | MicroPak2™                                     | SuperFET®  | UHC®  |
| Fairchild Semiconductor®   | MillerDrive™                                   | SuperSOT™-3  | Ultra FRFET™  |
| FACT Quiet Series™   | MotionMax™                                     | SuperSOT™-6  | UniFET™   |
| FACT®  | mWSaver™                                       | SuperSOT™-8  | VCX™  |
| FAST®  | OptoHiT™                                       | SupreMOS®  | VisualMax™  |
| FastvCore™   | OPTOLOGIC®                                     | SyncFET™   | VoltagePlus™  |
| FETBench™  | OPTOPLANAR®                                    | Sync-Lock™   | XS™   |
| FlashWriter®*  |  |  SYSTEM GENERAL®* |   |
| FPS™   |  |  |   |

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Rev. 162



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