

# 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 $T_a = 25^\circ\text{C}$ unless otherwise noted

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

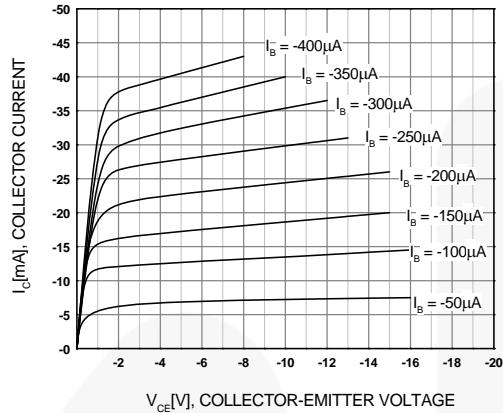
### Electrical Characteristics $T_a = 25^\circ\text{C}$ unless otherwise noted

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	$V_{CE} = -5V, I_C = 2\text{mA}$	110		800	
$V_{CE(\text{sat})}$	Collector-Emitter Saturation Voltage	$I_C = -10\text{mA}, I_B = -0.5\text{mA}$ $I_C = -100\text{mA}, I_B = -5\text{mA}$		-90 -250	-300 -650	mV mV
$V_{BE(\text{sat})}$	Collector-Base Saturation Voltage	$I_C = -10\text{mA}, I_B = -0.5\text{mA}$ $I_C = -100\text{mA}, I_B = -5\text{mA}$		-700 -900		mV mV
$V_{BE(\text{on})}$	Base-Emitter On Voltage	$V_{CE} = -5V, I_C = -2\text{mA}$ $V_{CE} = -5V, I_C = -10\text{mA}$	-600	-660	-750 -800	mV mV
$f_T$	Current Gain Bandwidth Product	$V_{CE} = -5V, I_C = -10\text{mA}, f = 10\text{MHz}$		150		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = -10V, I_E = 0, f = 1\text{MHz}$			6	pF
NF	Noise Figure : BC556/557/558 : BC559/560 : BC559 : BC560	$V_{CE} = -5V, I_C = -200\mu\text{A}$ $f = 1\text{kHz}, R_G = 2\text{K}\Omega$ $V_{CE} = -5V, I_C = -200\mu\text{A}$ $R_G = 2\text{K}\Omega, f = 30\text{~}15000\text{MHz}$		2 1 1.2 1.2	10 4 4 2	dB dB dB dB

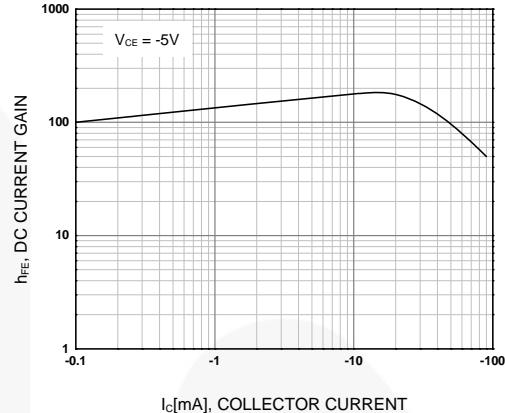
### $h_{FE}$ Classification

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

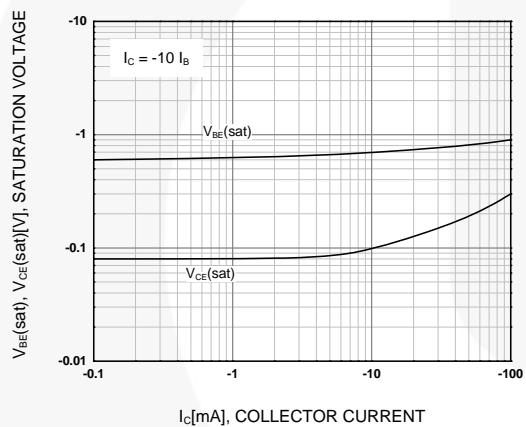
## Typical Performance Characteristics



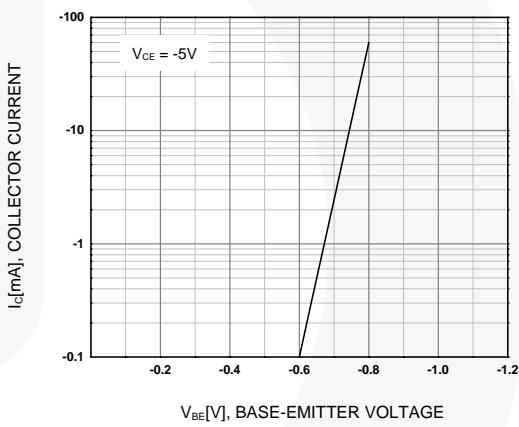
**Figure 1. Static Characteristic**



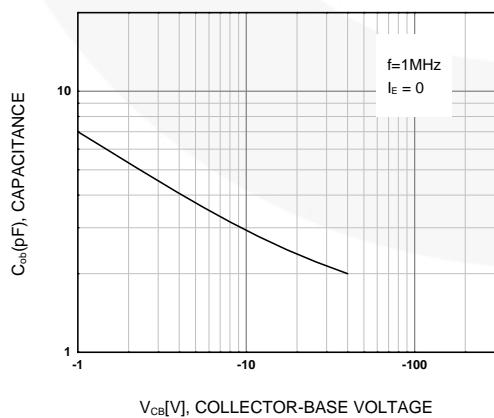
**Figure 2. DC current Gain**



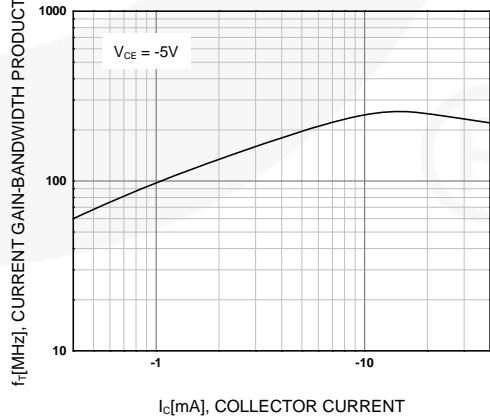
**Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage**



**Figure 4. Base-Emitter On Voltage**



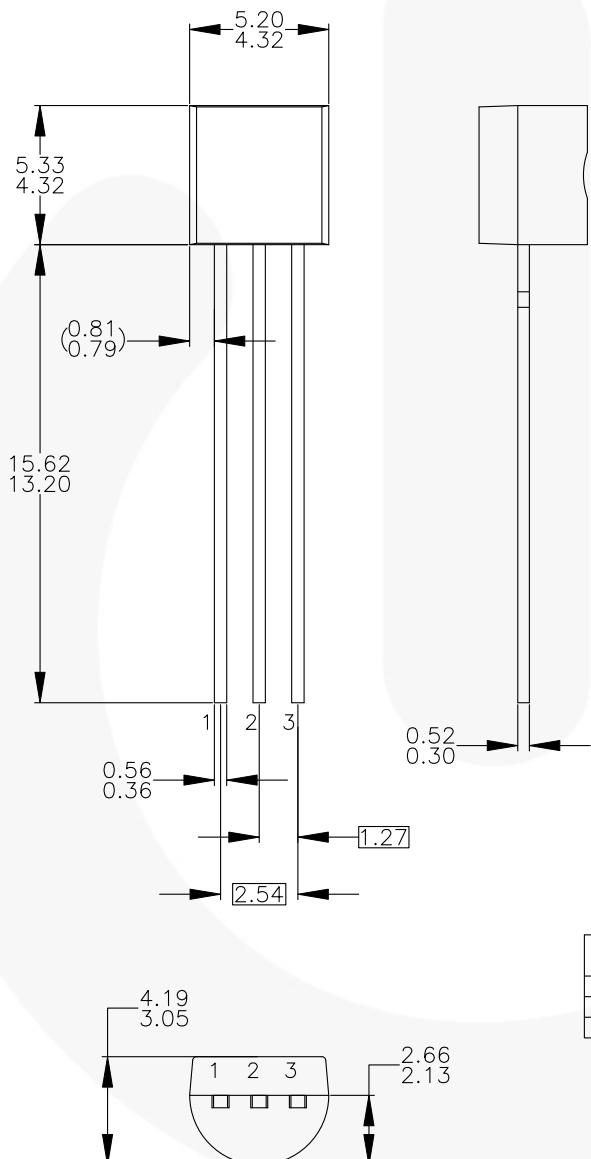
**Figure 5. Collector Output Capacitance**



**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:

NP	92				94				96				97				98			
	P	F	M	P	F	M	B	F	M	P	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      E — Emitter      D — Drain  
 F — JFET      B — Base      S — Source  
 M — DMOS      C — Collector      G — Gate

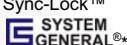
- E) FOR PACKAGE 92, 94, 96, 97 AND 98: PIN CONFIGURATION DRAIN "D" AND SOURCE "S" ARE INTERCHANGEABLE AT JFET "F" OPTION.
- F) DRAWING FILENAME: MKT-ZA03DREV3.

Dimensions in Millimeters



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Rev. I62

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