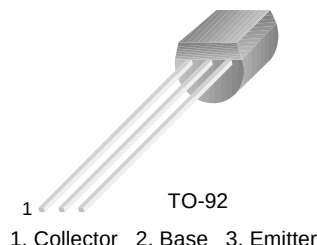


## BC556/557/558/559/560

### Switching and Amplifier

- High Voltage: BC556,  $V_{CE0} = -65V$
- Low Noise: BC559, BC560
- Complement to BC546 ... BC 550



### PNP Epitaxial Silicon Transistor

#### 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 | $I_C = -10mA, I_B = -0.5mA$<br>$I_C = -100mA, I_B = -5mA$                                                                                                                                          |      | -90<br>-250          | -300<br>-650      | mV<br>mV             |
| $V_{BE(sat)}$ | Collector-Base Saturation Voltage    | $I_C = -10mA, I_B = -0.5mA$<br>$I_C = -100mA, I_B = -5mA$                                                                                                                                          |      | -700<br>-900         |                   | mV<br>mV             |
| $V_{BE(on)}$  | Base-Emitter On Voltage              | $V_{CE} = -5V, I_C = -2mA$<br>$V_{CE} = -5V, I_C = -10mA$                                                                                                                                          | -600 | -660                 | -750<br>-800      | mV<br>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<br>: BC559/560<br>: BC559<br>: BC560<br>$V_{CE} = -5V, I_C = -200\mu A$<br>$f = 1KHz, R_G = 2K\Omega$<br>$V_{CE} = -5V, I_C = -200\mu A$<br>$R_G = 2K\Omega, f = 30 \sim 15000MHz$ |      | 2<br>1<br>1.2<br>1.2 | 10<br>4<br>4<br>2 | dB<br>dB<br>dB<br>dB |

### $h_{FE}$ Classification

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

## Typical Characteristics

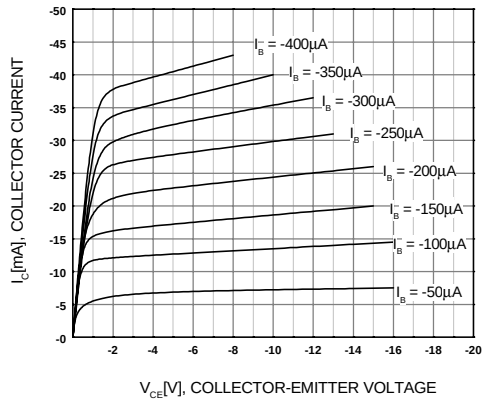


Figure 1. Static Characteristic

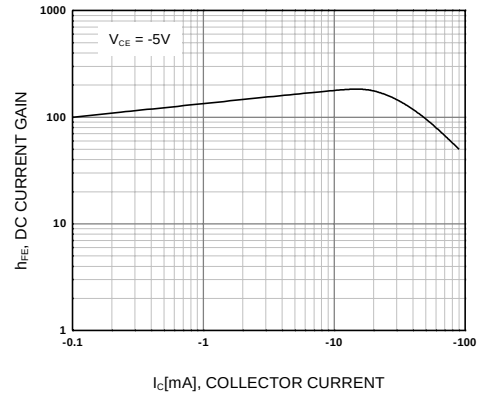


Figure 2. DC current Gain

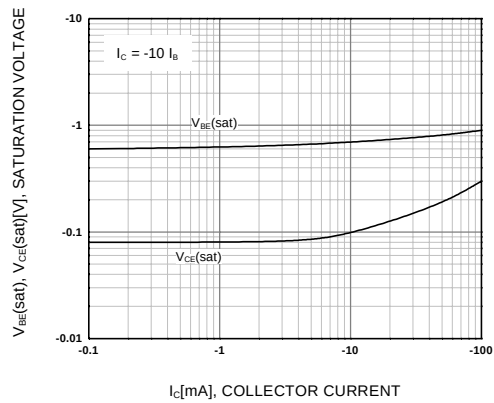


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

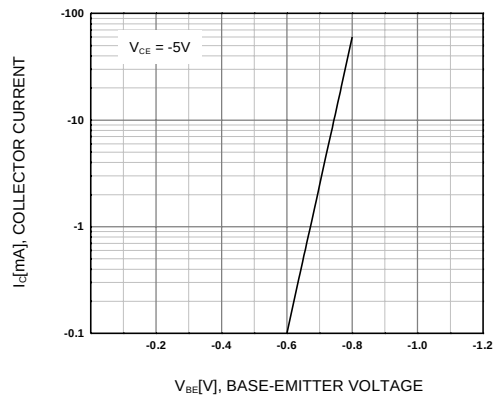


Figure 4. Base-Emitter On Voltage

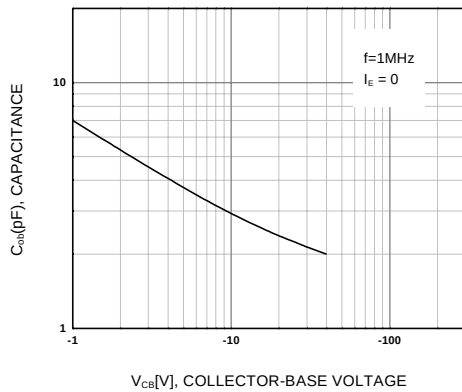


Figure 5. Collector Output Capacitance

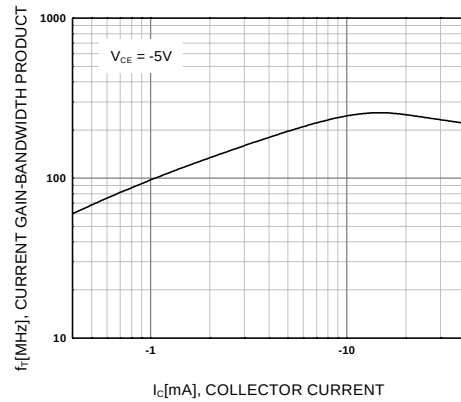
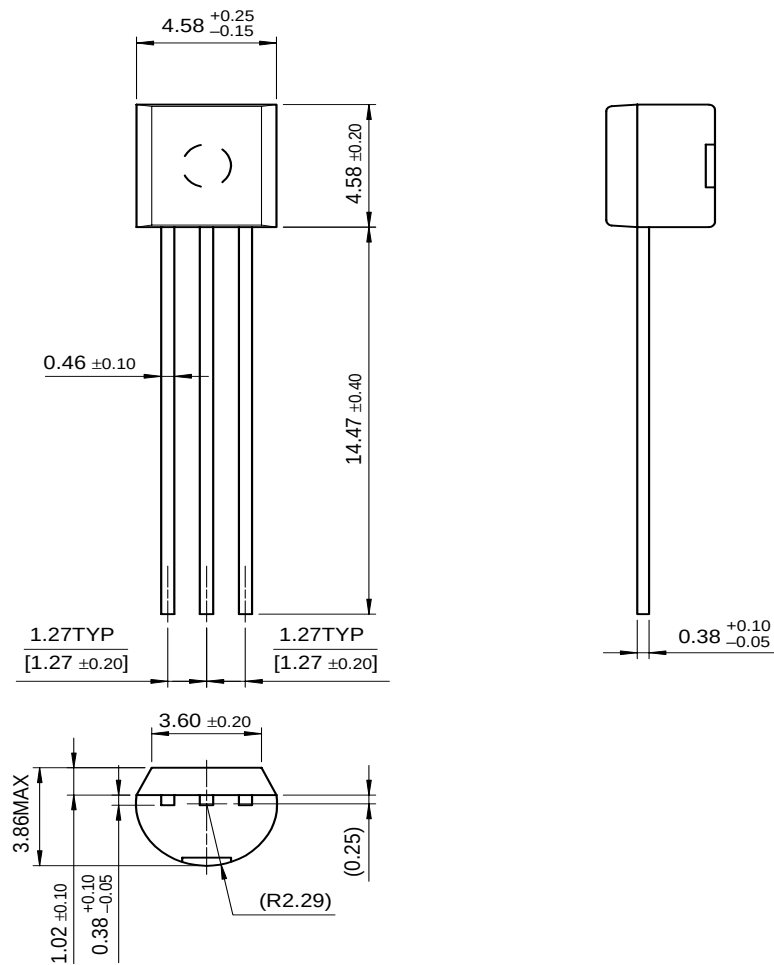


Figure 6. Current Gain Bandwidth Product

## Package Dimensions

TO-92



Dimensions in Millimeters

BC556/557/558/559/560

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| Bottomless <sup>™</sup>                          | FAST <sup>®</sup>               | LittleFET <sup>™</sup>         | Power247 <sup>™</sup>           | SuperSOT <sup>™</sup> -3    |
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