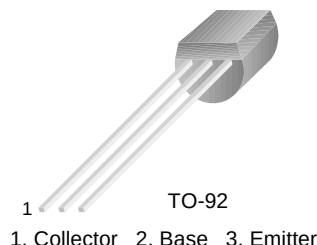


## BC556/557/558/559/560

### 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 | $I_C = -10mA, I_B = -0.5mA$                                  |      | -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<br>: BC559/560<br>$f = 1KHz, R_G = 2K\Omega$ |      | 2    | 10   | dB    |
|               |                                      |                                                              |      | 1    | 4    | dB    |
|               |                                      | : BC559<br>: BC560<br>$R_G = 2K\Omega, f = 30 \sim 15000MHz$ |      | 1.2  | 4    | dB    |
|               |                                      |                                                              |      | 1.2  | 2    | dB    |

### $h_{FE}$ Classification

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

## Typical Characteristics

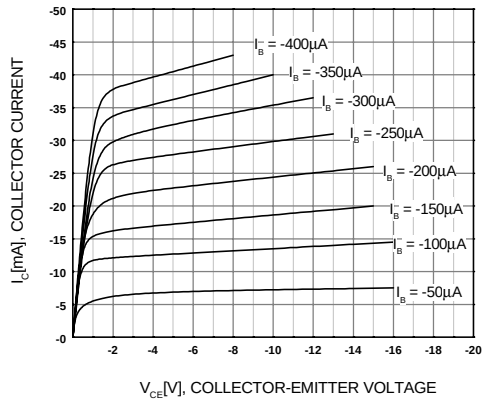


Figure 1. Static Characteristic

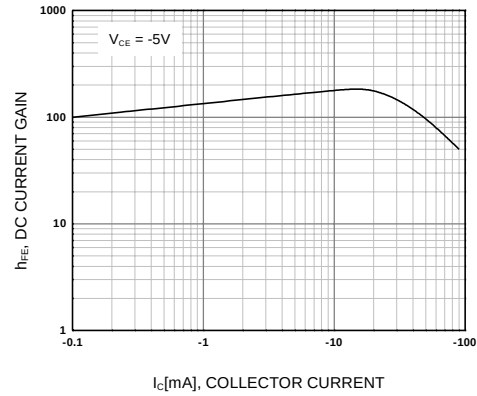


Figure 2. DC current Gain

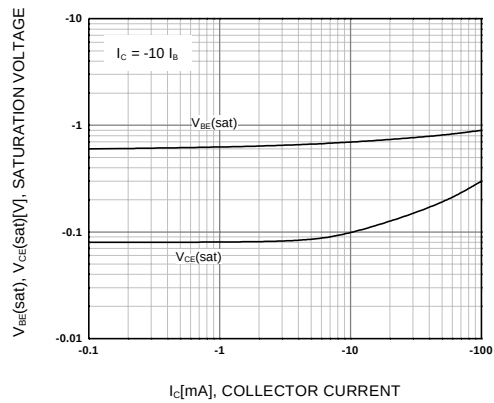


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

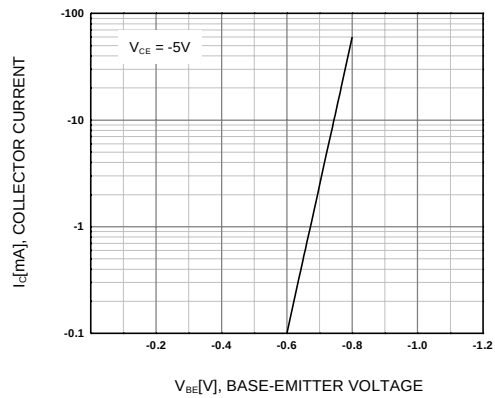


Figure 4. Base-Emitter On Voltage

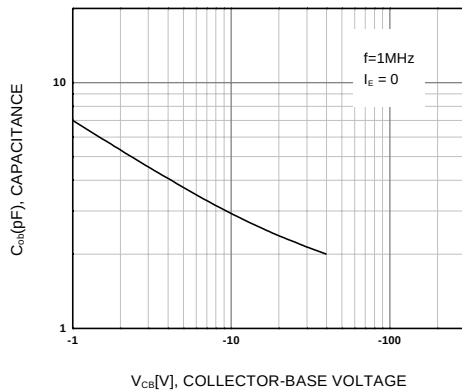


Figure 5. Collector Output Capacitance

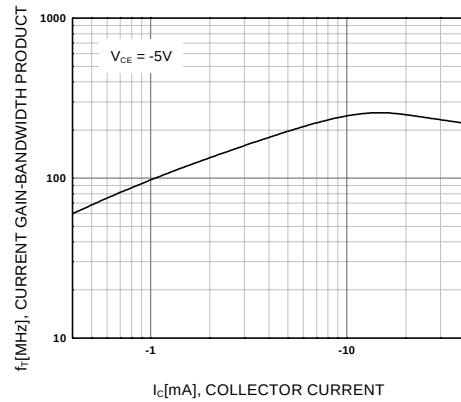
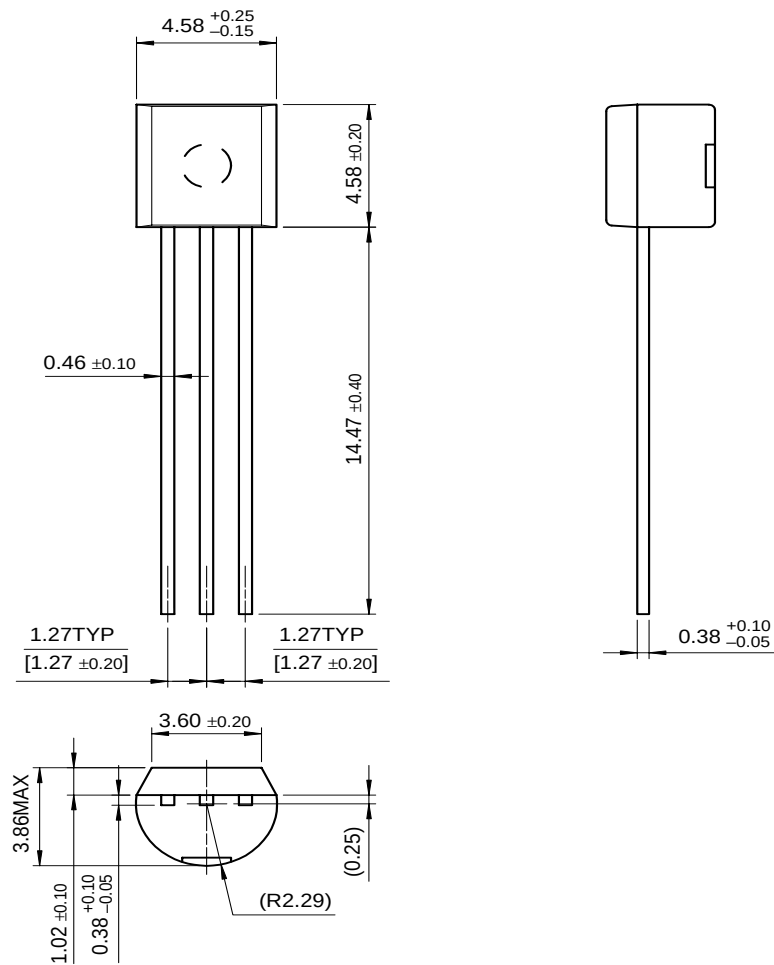


Figure 6. Current Gain Bandwidth Product

## 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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