FAIRCHILD
SEMICONDUCTOR®

# BC556/557/558/559/560

## Switching and Amplifier

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

1 TO-92

1. Collector 2. Base 3. Emitter

## PNP Epitaxial Silicon Transistor

### Absolute Maximum Ratings $T_a$=25°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 | °C |
| $T_{STG}$ | Storage Temperature | -65 ~ 150 | °C |

### Electrical Characteristics $T_a$=25°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 | $V_{CE}$= -5V, $I_C$= -200μA | | 2 | 10 | dB |
| | : BC559/560 | f=1KHz, $R_G$=2KΩ | | 1 | 4 | dB |
| | : BC559 | $V_{CE}$= -5V, $I_C$= -200μA | | 1.2 | 4 | dB |
| | : BC560 | $R_G$=2KΩ, f=30~15000MHz | | 1.2 | 2 | dB |

### $h_{FE}$ Classification

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

## Typical Characteristics

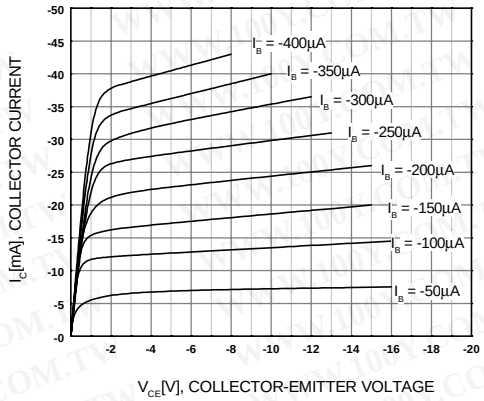



**Figure 1. Static Characteristic**

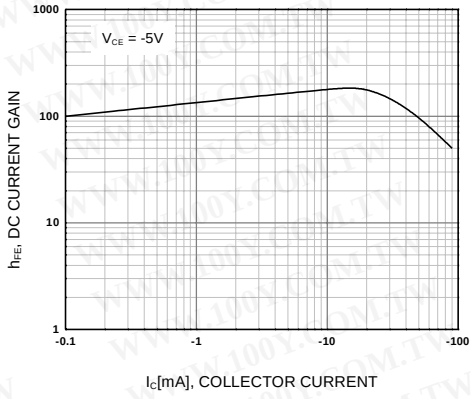



**Figure 2. DC current Gain**

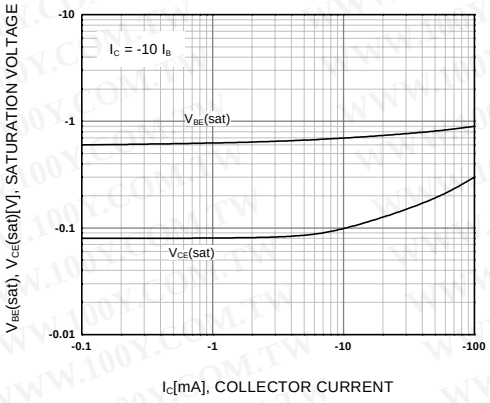



**Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage**

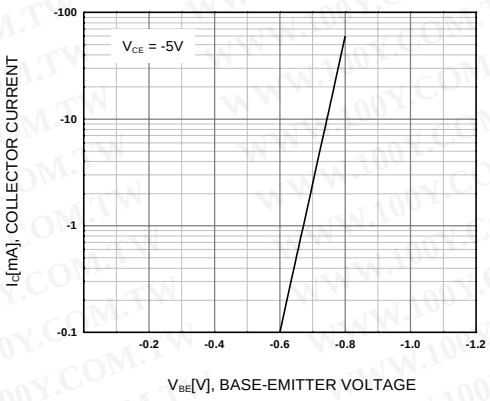



**Figure 4. Base-Emitter On Voltage**

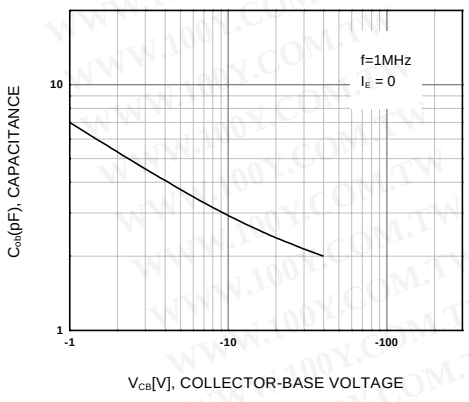



**Figure 5. Collector Output Capacitance**

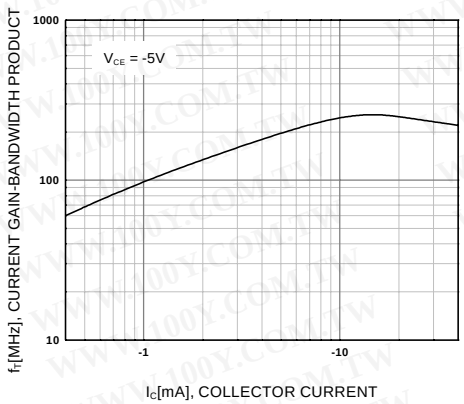
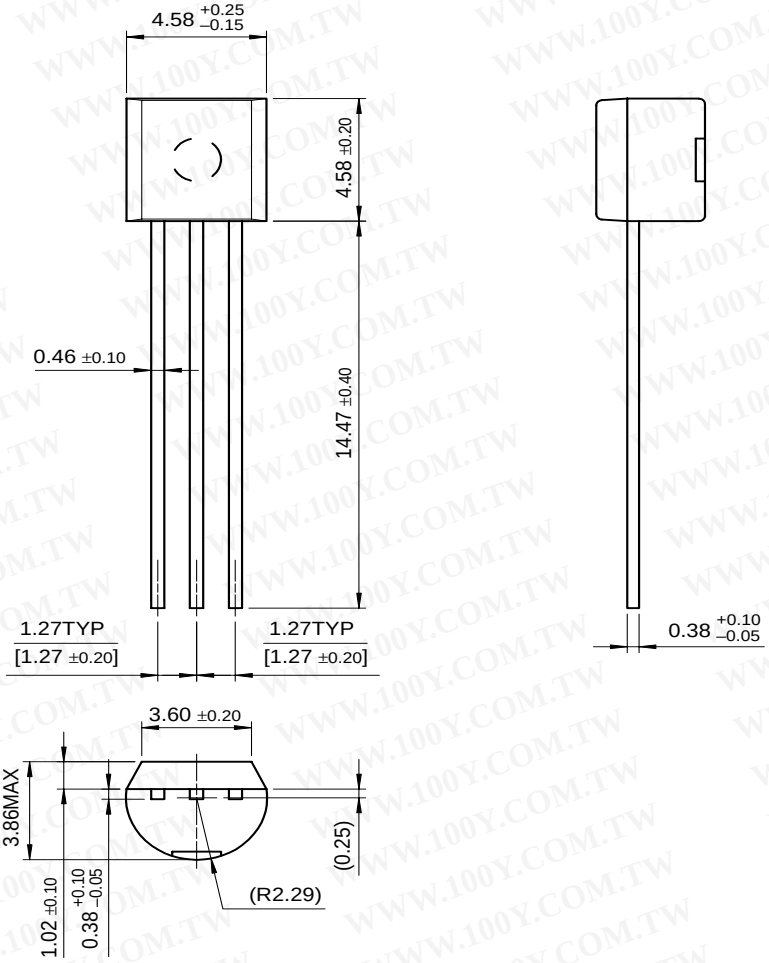



**Figure 6. Current Gain Bandwidth Product**

## Package Dimensions

TO-92






Dimensions in Millimeters

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| *CROSSVOLT*™ | FRFET™ | MicroPak™ | QFET™ | SuperSOT™-8 |
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