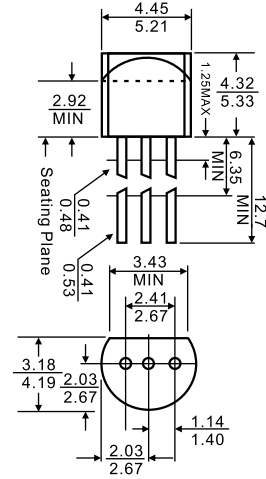


TO-92



1. COLLECTOR
2. BASE
3. EMITTER



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 |
| 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 Characteristics

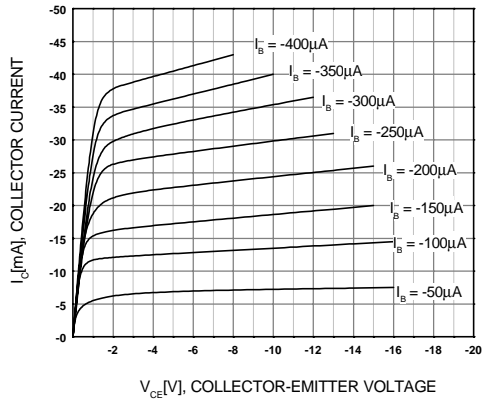


Figure 1. Static Characteristic

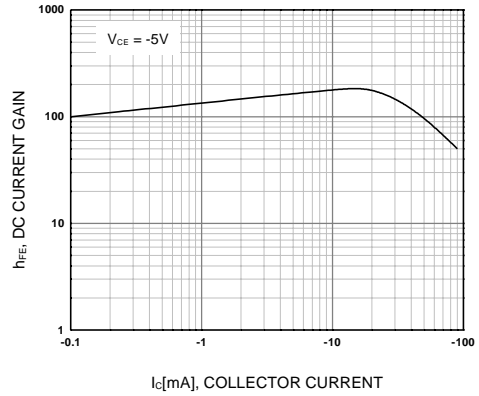
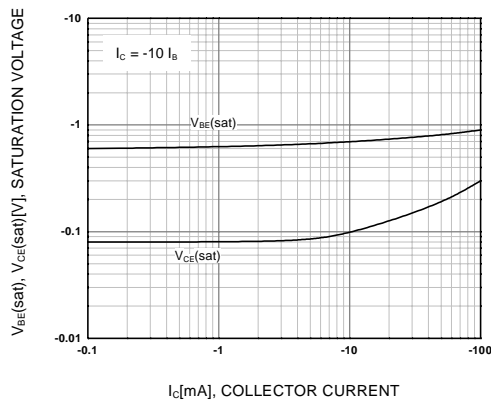


Figure 2. DC current Gain



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

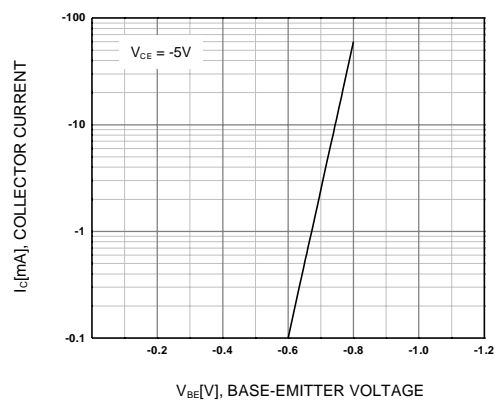


Figure 4. Base-Emitter On Voltage

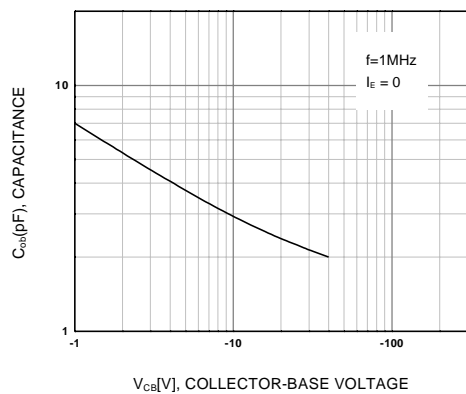


Figure 5. Collector Output Capacitance

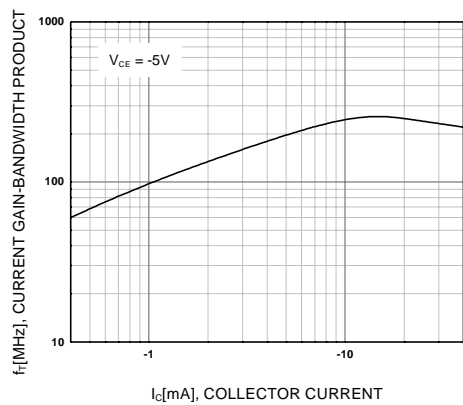


Figure 6. Current Gain Bandwidth Product