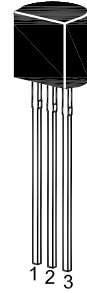


BC546...BC550

NPN Silicon Epitaxial Planar Transistor

for switching and AF amplifier application

These transistors are subdivided into three groups A, B and C according to their current gain.



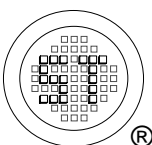
1. Collector 2. Base 3. Emitter
TO-92 Plastic Package

Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

| Parameter | Symbol | Value | Unit |
|---------------------------|-----------|---------------|------------------|
| Collector Base Voltage | V_{CBO} | BC546 | 80 |
| | | BC547, BC550 | 50 |
| | | BC548, BC549 | 30 |
| Collector Emitter Voltage | V_{CEO} | BC546 | 65 |
| | | BC547, BC550 | 45 |
| | | BC548, BC549 | 30 |
| Emitter Base Voltage | V_{EBO} | 6 | V |
| Collector Current (DC) | I_C | 100 | mA |
| Peak Collector Current | I_{CM} | 200 | mA |
| Total Power Dissipation | P_{tot} | 500 | mW |
| Junction Temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | - 65 to + 150 | $^\circ\text{C}$ |

Characteristics at $T_a = 25\text{ }^\circ\text{C}$

| Parameter | Symbol | Min. | Max. | Unit | |
|---|--------------------------------|--------------|------|------|---|
| DC Current Gain at $V_{CE} = 5\text{ V}$, $I_C = 2\text{ mA}$ | Current Gain Group A B C | h_{FE} | 110 | 220 | - |
| | | h_{FE} | 200 | 450 | - |
| | | h_{FE} | 420 | 800 | - |
| Collector Base Cutoff Current at $V_{CB} = 30\text{ V}$ | I_{CBO} | - | 15 | nA | |
| Emitter Base Cutoff Current at $V_{EB} = 5\text{ V}$ | I_{EBO} | - | 100 | nA | |
| Collector Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$ | $V_{(BR)CBO}$ | BC546 | 80 | - | V |
| | | BC547, BC550 | 50 | - | |
| | | BC548, BC549 | 30 | - | |
| Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$ | $V_{(BR)CEO}$ | BC546 | 65 | - | V |
| | | BC547, BC550 | 45 | - | |
| | | BC548, BC549 | 30 | - | |
| Emitter Base Breakdown Voltage at $I_E = 10\text{ }\mu\text{A}$ | $V_{(BR)EBO}$ | 6 | - | V | |



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BC546...BC550

Characteristics at $T_a = 25\text{ }^\circ\text{C}$

| Parameter | Symbol | Min. | Max. | Unit |
|---|---------------|------|-------------|------|
| Collector Emitter Saturation Voltage at $I_C = 10\text{ mA}$, $I_B = 0.5\text{ mA}$ at $I_C = 100\text{ mA}$, $I_B = 5\text{ mA}$ | $V_{CE(sat)}$ | - | 0.25 0.6 | V |
| Base Emitter On Voltage at $V_{CE} = 5\text{ V}$, $I_C = 2\text{ mA}$ at $V_{CE} = 5\text{ V}$, $I_C = 10\text{ mA}$ | $V_{BE(on)}$ | 0.55 | 0.7 0.77 | V |
| Transition Frequency at $V_{CE} = 5\text{ V}$, $I_C = 10\text{ mA}$, $f = 100\text{ MHz}$ | f_T | 100 | - | MHz |
| Collector Base Capacitance at $V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$ | C_{cb} | - | 6 | pF |

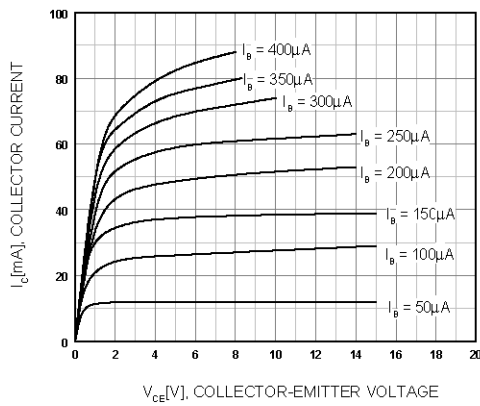


Figure 1. Static Characteristic

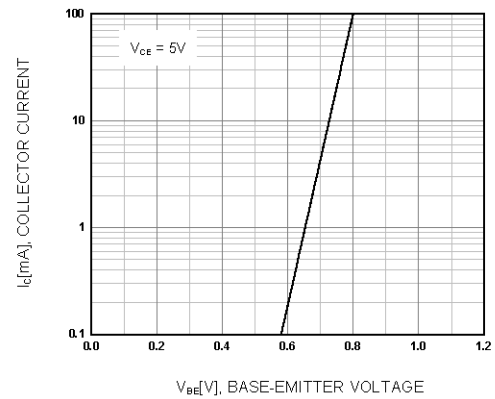


Figure 2. Transfer Characteristic

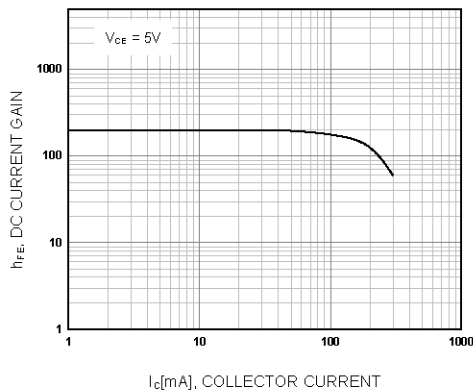


Figure 3. DC current Gain

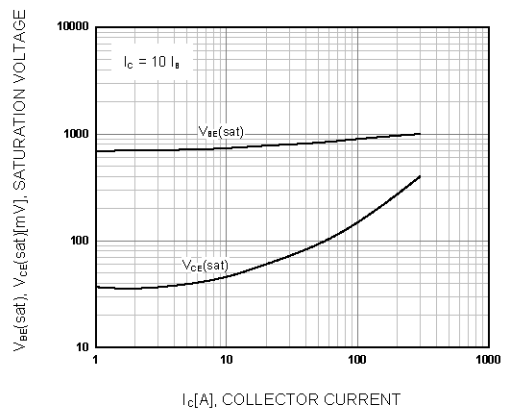
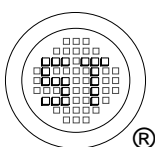


Figure 4. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage



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