## BC556...BC560

## PNP Silicon Epitaxial Planar Transistor

for switching and AF amplifier applications

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


1. Collector 2. Base 3. Emitter

Absolute Maximum Ratings ( $\mathrm{T}_{\mathrm{a}}=25^{\circ} \mathrm{C}$ )

| Parameter | Symbol | Value | Unit |
| :---: | :---: | :---: | :---: |
| Collector Base Voltage $\begin{array}{ll}\text { BC556 } \\ & \text { BC557, BC560 } \\ & \text { BC558, BC559 }\end{array}$ | $-\mathrm{V}_{\text {CBO }}$ | $\begin{aligned} & 80 \\ & 50 \\ & 30 \\ & \hline \end{aligned}$ | V |
| Collector Emitter Voltage $\begin{array}{ll}\text { BC556 } \\ & \text { BC557, BC560 } \\ & \text { BC558, BC559 }\end{array}$ | $-\mathrm{V}_{\text {CEO }}$ | $\begin{aligned} & 65 \\ & 45 \\ & 30 \end{aligned}$ | V |
| Emitter Base Voltage | $-V_{\text {Ebo }}$ | 5 | V |
| Collector Current (DC) | - $\mathrm{IC}_{C}$ | 100 | mA |
| Peak Collector Current | $-_{\text {CM }}$ | 200 | mA |
| Total Power Dissipation | $\mathrm{P}_{\text {tot }}$ | 500 | mW |
| Junction Temperature | $\mathrm{T}_{\mathrm{j}}$ | 150 | ${ }^{\circ} \mathrm{C}$ |
| Storage Temperature Range | $\mathrm{T}_{\mathrm{S}}$ | - 65 to + 150 | ${ }^{\circ} \mathrm{C}$ |

Characteristics at $\mathrm{T}_{\mathrm{a}}=25^{\circ} \mathrm{C}$

| Parameter |  | Symbol | Min. | Max. | Unit |
| :---: | :---: | :---: | :---: | :---: | :---: |
| DC Current Gain at $-\mathrm{V}_{\mathrm{CE}}=5 \mathrm{~V},-\mathrm{I}_{\mathrm{C}}=2 \mathrm{~mA}$ | Current Gain Group | $\begin{aligned} & \mathrm{h}_{\mathrm{FE}} \\ & \mathrm{~h}_{\mathrm{FE}} \\ & \mathrm{~h}_{\mathrm{FE}} \end{aligned}$ | $\begin{aligned} & 110 \\ & 200 \\ & 420 \end{aligned}$ | $\begin{aligned} & 220 \\ & 450 \\ & 800 \end{aligned}$ |  |
| Collector Base Cutoff Current at $-\mathrm{V}_{\mathrm{CB}}=30 \mathrm{~V}$ |  | $-{ }_{\text {cbo }}$ | - | 15 | nA |
| Emitter Base Cutoff Current at $-\mathrm{V}_{\mathrm{EB}}=5 \mathrm{~V}$ |  | $\mathrm{I}_{\text {ebo }}$ | - | 100 | nA |
| Collector Base Breakdown Voltage at $-\mathrm{I}_{\mathrm{C}}=100 \mu \mathrm{~A}$ | BC556 BC557, BC560 BC558, BC559 | $-\mathrm{V}_{(\mathrm{BR})} \mathrm{CbO}$ | $\begin{aligned} & 80 \\ & 50 \\ & 30 \\ & \hline \end{aligned}$ |  | V |
| Collector Emitter Breakdown Voltage at $-I_{C}=2 \mathrm{~mA}$ | BC556 BC557, BC560 BC558, BC559 | $-\mathrm{V}_{\text {(BR)CEO }}$ | $\begin{aligned} & 65 \\ & 45 \\ & 30 \end{aligned}$ | - | V |
| Emitter Base Breakdown Voltage at $-\mathrm{I}_{\mathrm{E}}=100 \mu \mathrm{~A}$ |  |  | 5 | - | V |

Characteristics at $\mathrm{T}_{\mathrm{a}}=25^{\circ} \mathrm{C}$

| Parameter | Symbol | Min. | Max. | Unit |
| :---: | :---: | :---: | :---: | :---: |
| Collector Emitter Saturation Voltage <br> at $-I_{C}=10 \mathrm{~mA},-\mathrm{I}_{\mathrm{B}}=0.5 \mathrm{~mA}$ <br> at $-\mathrm{I}_{\mathrm{C}}=100 \mathrm{~mA},-\mathrm{I}_{\mathrm{B}}=5 \mathrm{~mA}$ | $-\mathrm{V}_{\mathrm{CE}(\mathrm{sat})}$ | - | 0.3 | V |
| Base Emitter On Voltage <br> at $-\mathrm{V}_{\mathrm{CE}}=5 \mathrm{~V},-\mathrm{I}_{\mathrm{C}}=2 \mathrm{~mA}$ <br> at $-\mathrm{V}_{\mathrm{CE}}=5 \mathrm{~V},-\mathrm{I}_{\mathrm{C}}=10 \mathrm{~mA}$ | $-\mathrm{V}_{\mathrm{BE}(\mathrm{on})}$ | 0.55 | 0.75 |  |
| Transition Frequency <br> at $-\mathrm{V}_{\mathrm{CE}}=5 \mathrm{~V},-\mathrm{I}_{\mathrm{C}}=10 \mathrm{~mA}, \mathrm{f}=100 \mathrm{MHz}$ | $\mathrm{f}_{\mathrm{T}}$ | 100 | V |  |
| Collector Base Capacitance <br> at $-\mathrm{V}_{\mathrm{CB}}=10 \mathrm{~V}, \mathrm{f}=1 \mathrm{MHz}$ | $\mathrm{C}_{\mathrm{cb}}$ | - | 0.82 | MHz |



Figure 1. Static Characteristic


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


Ic[mA]. COLLECTOR CURRENT

Figure 2. DC current Gain


Figure 4. Base-Emitter On Voltage

