

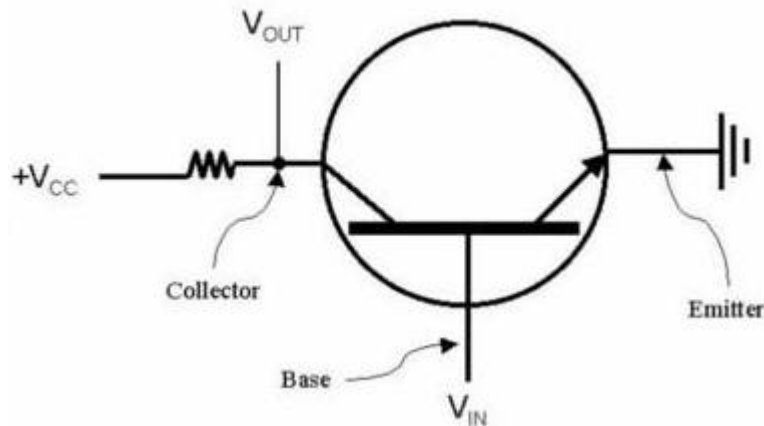
Transistor Fact Sheet

- Two main types of transistors: Field effect transistors and junction transistors.
- Shockley, Bardeen, and Brattain invented the junction transistor in 1947.

- Transistors are an essential component of all modern electronic circuits.
 - Cellular phones
 - Computers
 - Radios
 - Televisions
 - iPods

All of these require transistors for their operation!

- The base/input voltage controls how much of the current supplied by the supply voltage (labeled ' V_{CC} ') flows through the transistor itself, and how much flows through the emitter.
- The base voltage is thus said to control the output voltage.



- Small changes in the base voltage can cause large changes in the output voltage.
 - This is important because it allows a transistor to act as a current amplifier...
 - ...or a switch!
- Transistors can be arranged to act as logic gates.
- This has allowed for tremendous advances in computing.
 - Modern integrated circuits have upwards of ONE MILLION transistors per square millimeter.
 - This density has grown exponentially since the 1970s, doubling every 24 months.