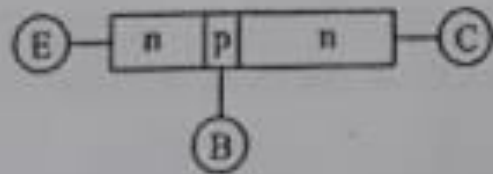


# Transistor Construction (BJT-Bipolar Junction Transistor)

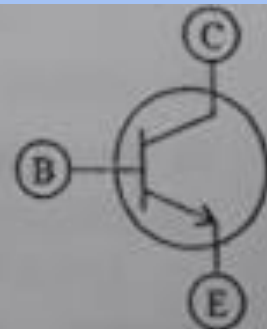
Elementrix Classes

# Transistor Construction (BJT)

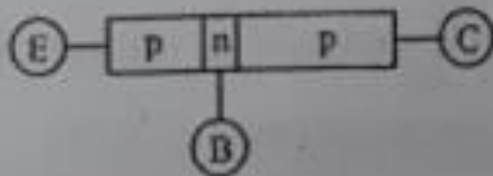
- ❑ A bipolar junction transistor is a three terminal semiconductor device containing two p-n junctions. When a p-type layer is placed between two n-type layers, an npn transistor is formed. Similarly when n-type layer is placed between two p-type layers, a pnp transistor is formed.
- ❑ BJT is bipolar because both holes (+) and electrons (-) will take part in the current flow through the device
  - N-type regions contains free electrons (negative carriers)
  - P-type regions contains free holes (positive carriers)



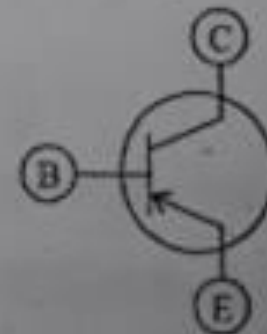
npn Transistor



Symbol



pnp Transistor



Symbol

- ❑ In each type of transistor, middle region is called base of the transistor and other two regions are called as emitter and collector. The physical size of the collector is greater than both emitter and base. The emitter is heavily doped while the base is lightly doped. The doping of collector is in between that at emitter and base. The pn junction joining the base region and the emitter region is called the emitter base junction. The pn junction joining the base region and the collector region is called collector base junction. The term bipolar refers to the use of both holes and electrons as charge carriers in the transistor structure.

- ❑ In the symbol shows the arrowhead in the emitter shows the direction of conventional current which is opposite to the flow of electrons. In npn transistor, conventional current flows out of emitter while in pnp transistor, the conventional current flows into the emitter.

पढ़िए और पढ़ाइये

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