SUBJECT: BASIC ELECTRONICS

Introduction to Transistor (History, Definition, Structure)

Elementrix Classes

Introduction to Transistor

- In 1947. transistor was invented by Walter H. Brattain and John Bardeen at Bell laboratories. Transistor replaced vacuum tubes due to smaller size, light weight, less power consumption, lower operating voltages etc. Transıstors can perform the function of current amplification and voltage amplification is well as power amplification. The amplification in transistor is obtained by passing the weak signal from low resistance region to high resistance region. Hence, the device is named as TRANSISTOR (TRANSfer resISTOR).

In 1947, John Bardeen and Walter Brattain devised - the first "point contact" transistor.

Transistor Definition

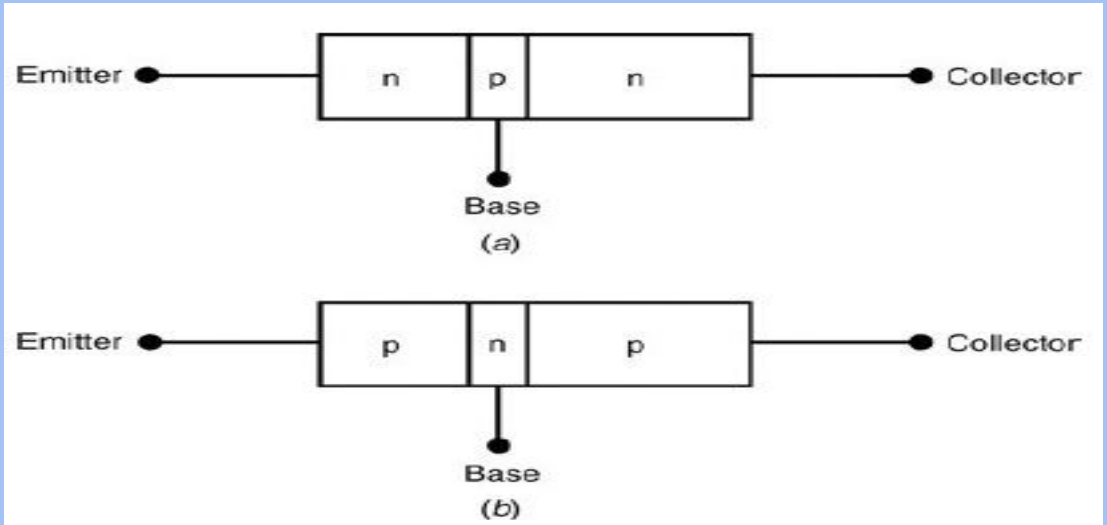
- Transistor is an electronic device made of three layers of semiconductor material that can act as an insulator and a conductor.

- The three layered transistor is also known as the **bipolar junction transistor (BJT)**.

Transistor Structure

A transistor has three doped regions.

- For both types, the base is a narrow region sandwiched between the larger collector and emitter regions.



- The emitter region is heavily doped and its job is to emit carriers into the base.
- The base region is very thin and lightly doped.
- Most of the current carriers injected into the base pass on to the collector.
- The collector region is moderately doped and is the largest of all three regions.

पढ़िए और पढ़ाइये

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