

EXPERIMENT # 8

MEASUREMENT OF SEMICONDUCTOR DEVICES USING MULTIMETER

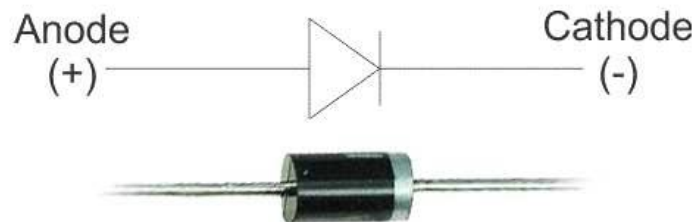
OBJECTIVE:

Semiconductor Devices:

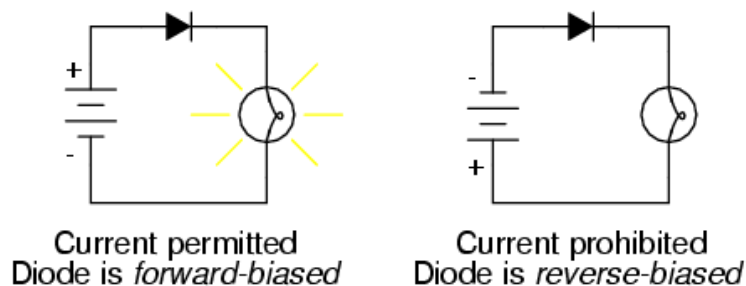
Semiconductors are those that have electrical characteristics somewhere between resistors and conductors. Semiconductor materials can be classified into two types, Intrinsic Semiconductors and Extrinsic Semiconductors. Semiconductors in their pure form are referred to as intrinsic semiconductors. On the other hand the semiconductors with intentionally added impurities are called extrinsic semiconductors. The most widely recognizable semiconductor is silicon. Such devices have established wide applications because of their reliability, compactness, and low cost.

Diodes:

A semiconductor device with two terminals typically allowing the flow of current in one direction only. The symbol of a diode is shown below, the arrowhead points in the direction of conventional current flow.

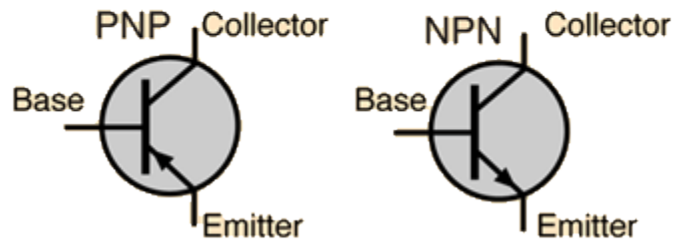
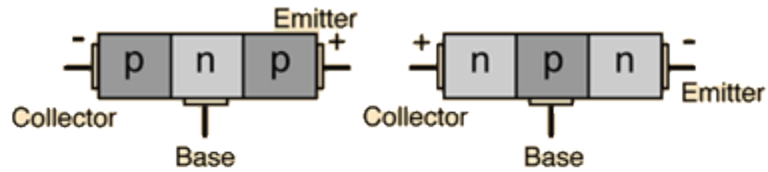


Diode operation



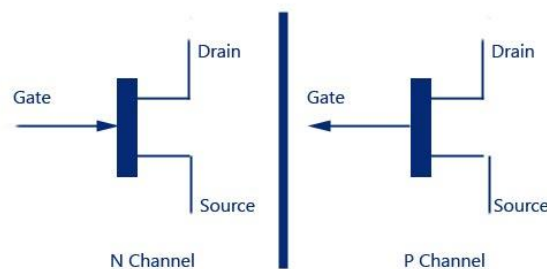
Transistor:

A transistor is a device that regulates current or voltage flow and acts as a switch or gate for electronic signals. Transistors consist of three layers of a semiconductor material, each capable of carrying a current.



FET:

The field-effect transistor (FET) is a transistor that uses an electric field to control the electrical behavior of the device. FETs are also known as unipolar transistors since they involve single-carrier-type operation.



FET
Field Effect Transistor FET

APPARATUS:

PROCEDURE:

OBSERVATIONS AND CALCULATIONS:

CONCLUSION:
