Guess the Topic

What am I?

Guess the Topic
What am I?

- I allow current to flow in one direction but block it in another.
- I am found in chargers, LEDs, and almost every electronic device.
- Without me, power supplies wouldn't work efficiently!
- Guess what I am?

SNS COLLEGE OF ENGINEERING

Coimbatore-35
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF CSE (IoT)

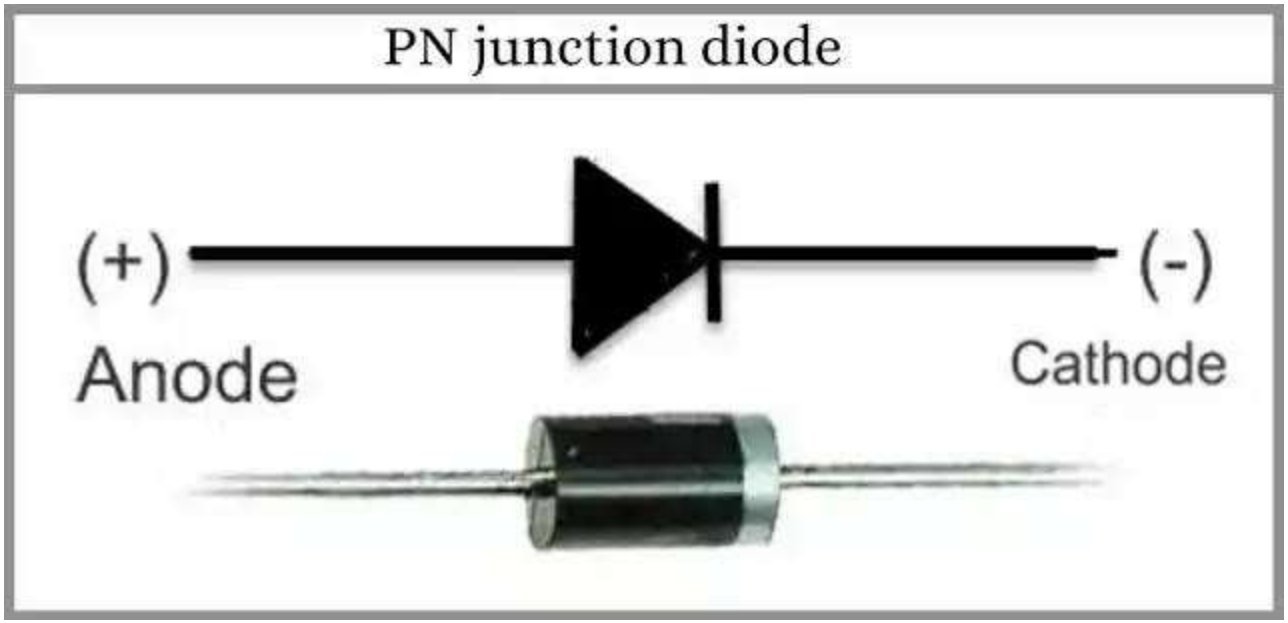
23ECT102- ELECTRONIC DEVICES AND CIRCUITS

I YEAR/ II SEMESTER

UNIT 1 – **P-N Junction Diode**

TOPIC –PN Junction as a Diode, Diode Equation & V-I Characteristics

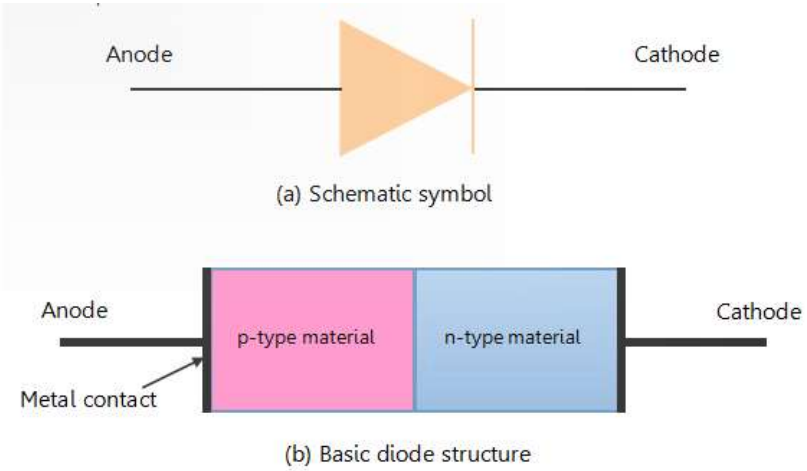
P-N Junction Diode



What is a P-N Junction Diode?

Definition:

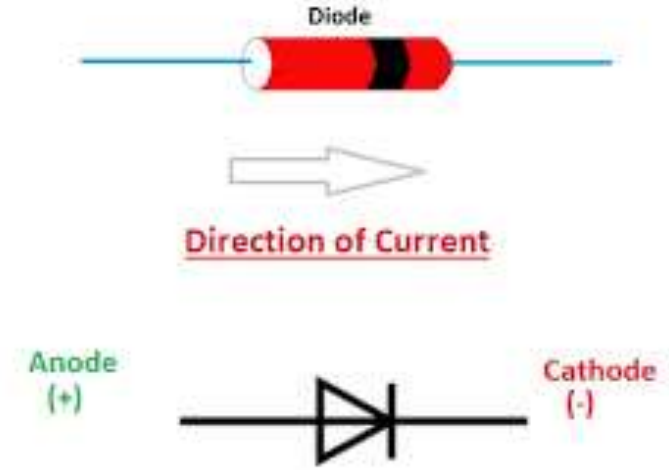
- A PN junction diode is a two-terminal semiconductor device formed by joining a **P-type** and an **N-type** material.



What is a P-N Junction Diode?

Basic Function:

It allows current to flow in **one direction** (forward bias) while blocking it in the opposite direction (reverse bias).



What is a P-N Junction Diode?

Depletion Region:

A region formed at the junction due to charge carrier recombination, creating a potential barrier.

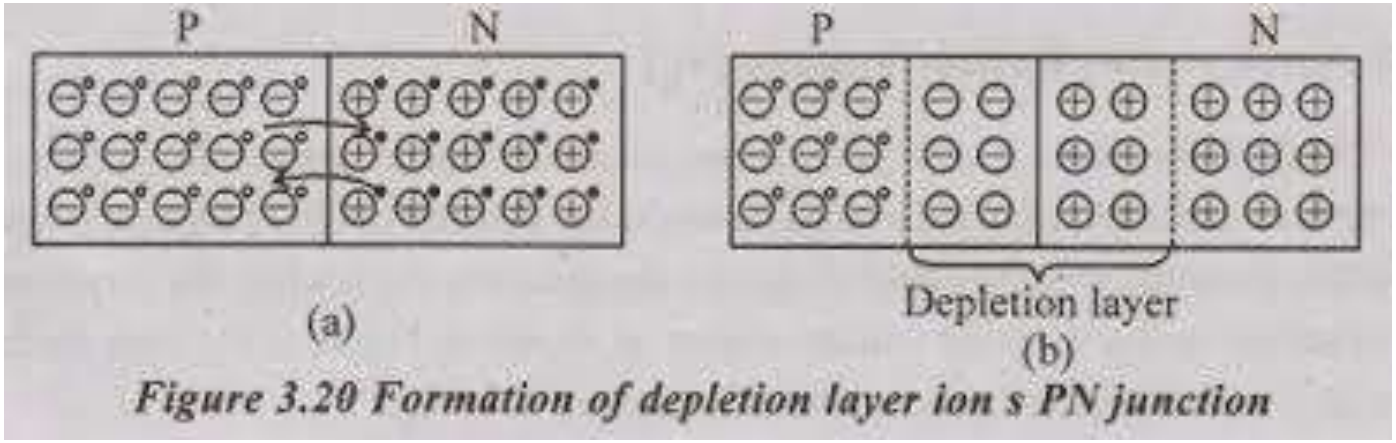


Figure 3.20 Formation of depletion layer ion s PN junction

ACTIVITY TIME

"WordSpin: Weave Your Tale!"

SET 1

- Animal
- Key board
- Cable
- Mobile phone
- Alphabets
- Mouse
- Bangle
- Full house
- Syllabus
- Glass
- Fan
- water bottle
- id card
- Eye liner
- slipper

SET 2

- Picture
- King
- Pig
- Movie
- Little
- Egg
- Catch
- Women
- Ink
- Micky mouse
- Air conditioner
- Laptop
- White board
- Flash
- chair

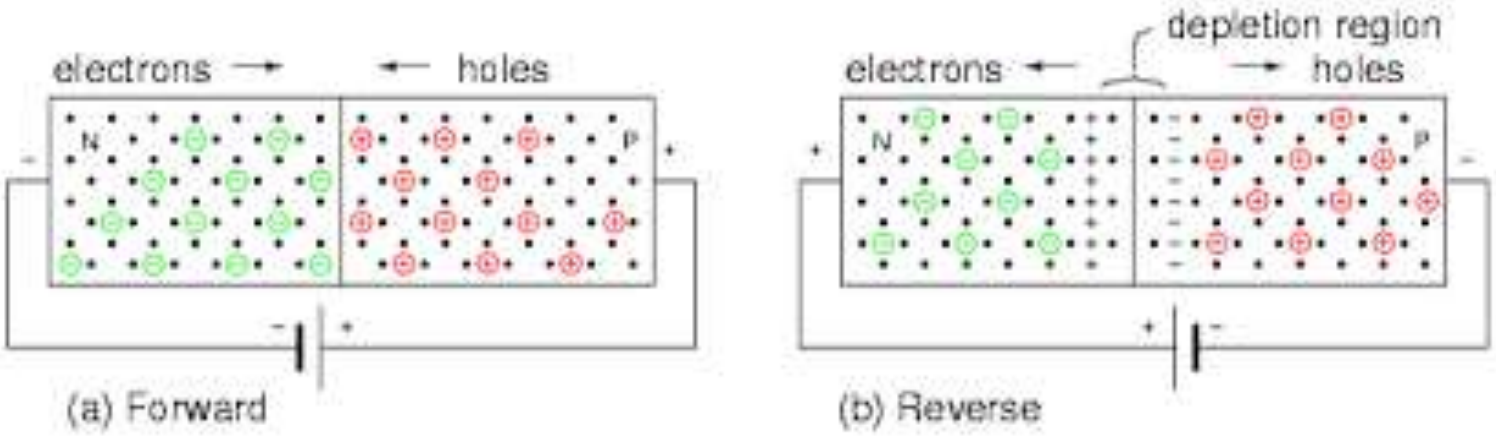
SET 3

- Modern Family
- Bones
- colours
- Smileys
- Foot
- Step
- Pillar
- Park
- Headset
- Lipstick
- Library
- Bonus
- Tongue twister
- paper

What is a P-N Junction Diode?

Biasing Conditions:

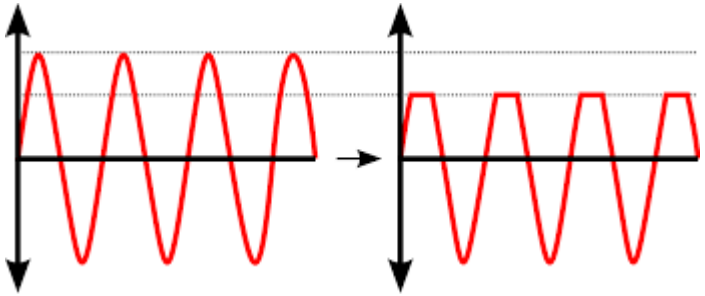
- **Forward Bias:** Low resistance, current flows.
- **Reverse Bias:** High resistance, minimal current.



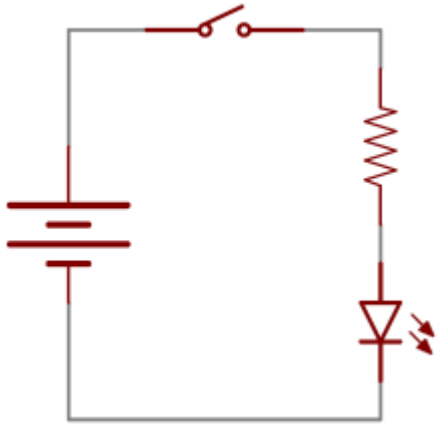
Applications

Rectifiers

Voltage Regulators



Clippers



All electronic Switching Circuits

Thank you!