



SNS COLLEGE OF ENGINEERING

Coimbatore-35

An Autonomous Institution

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai



DEPARTMENT OF MECHATRONICS

19MO504 - INDUSTRIAL ELECTRONICS

III YEAR V SEM

UNIT 1 – PHASE CONTROLLED CONVERTERS

TOPIC –Single Phase controlled Rectifier

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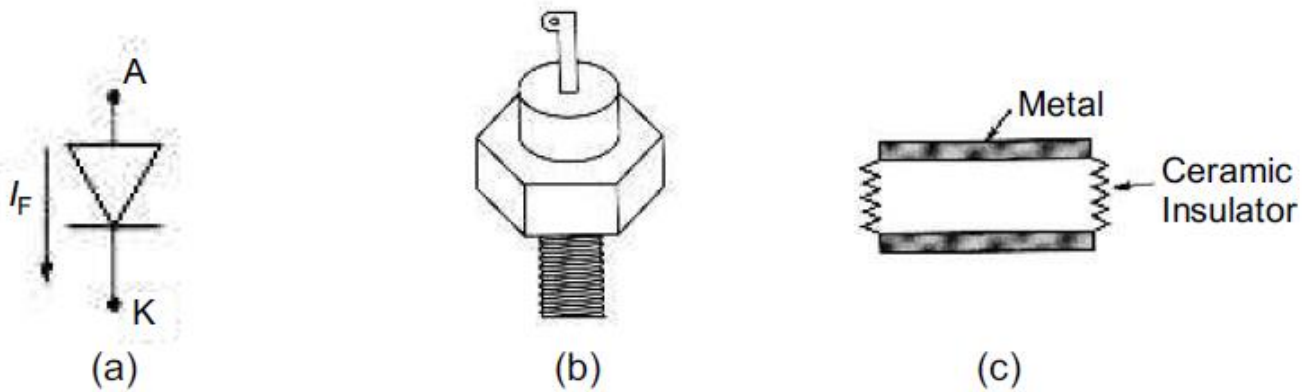


SEMICONDUCTOR DEVICES



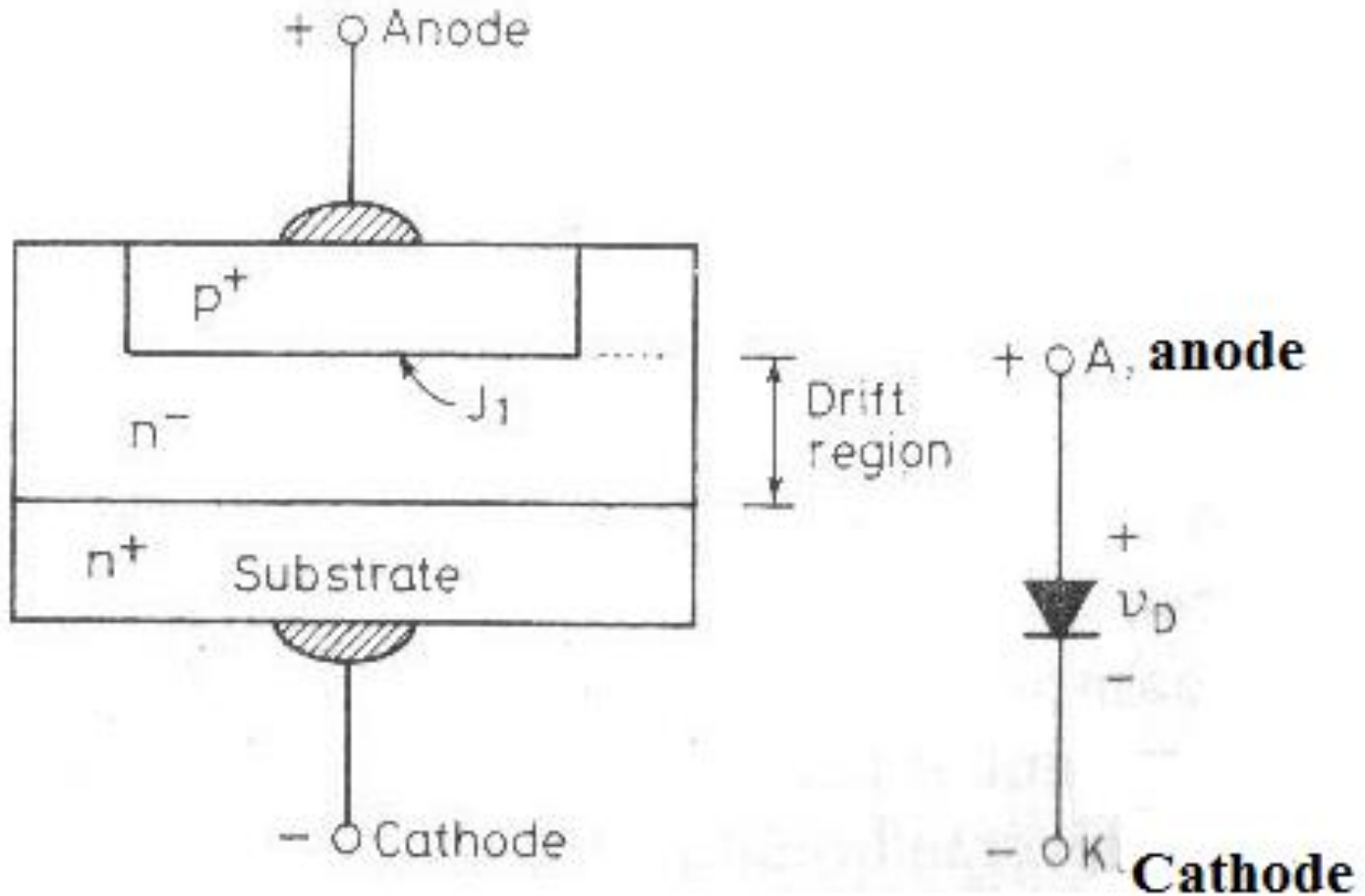
- POWER DIODE
- POWER TRANSISTORS
 - POWER BJT
 - POWER MOSFET
 - IGBT
 - SIT
- THYRISTORS
 - SCR
 - TRIAC
 - GTO
 - SITH
 - MCT

POWER DIODE

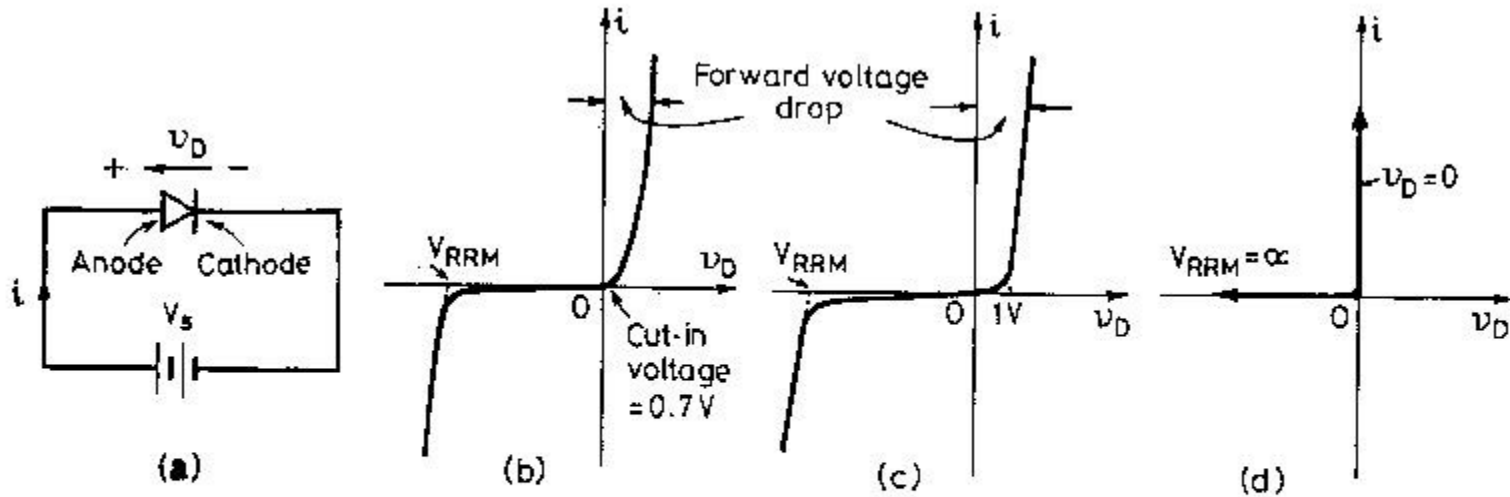


Power diode: (a) symbol; (b) and (c) types of packaging.

STRUCTURAL FEATURES OF POWER DIODE AND ITS SYMBOL



V-I CHARACTERISTICS OF SIGNAL DIODE, POWER DIODE AND IDEAL DIODE



(a) Forward biased Power Diode

(b) V-I Characteristics of Signal Diode

(c) V-I Characteristics of Power Diode

(d) V-I Characteristics of Ideal Diode



Assessment

Q1. Which of the following is a unidirectional power semiconductor device?

- A) TRIAC
- B) SCR
- C) MOSFET
- D) IGBT

Answer: B) SCR

Q2. Which device can conduct current in both directions?

- A) SCR
- B) TRIAC
- C) BJT
- D) MOSFET

Answer: B) TRIAC





References

1. <https://www.electronics-tutorials.ws/power/single-phase-rectification.html>
2. https://www.tutorialspoint.com/power_electronics/power_electronics_introduction.htm#:~:text=Power%20Electronics%20refers%20to%20the,efficiency%20and%20reliability%20is%20100%25

