

IMPATT Diode | [Recd Diode]

[IMPact ionization Avalanche
Transit Time Diode]

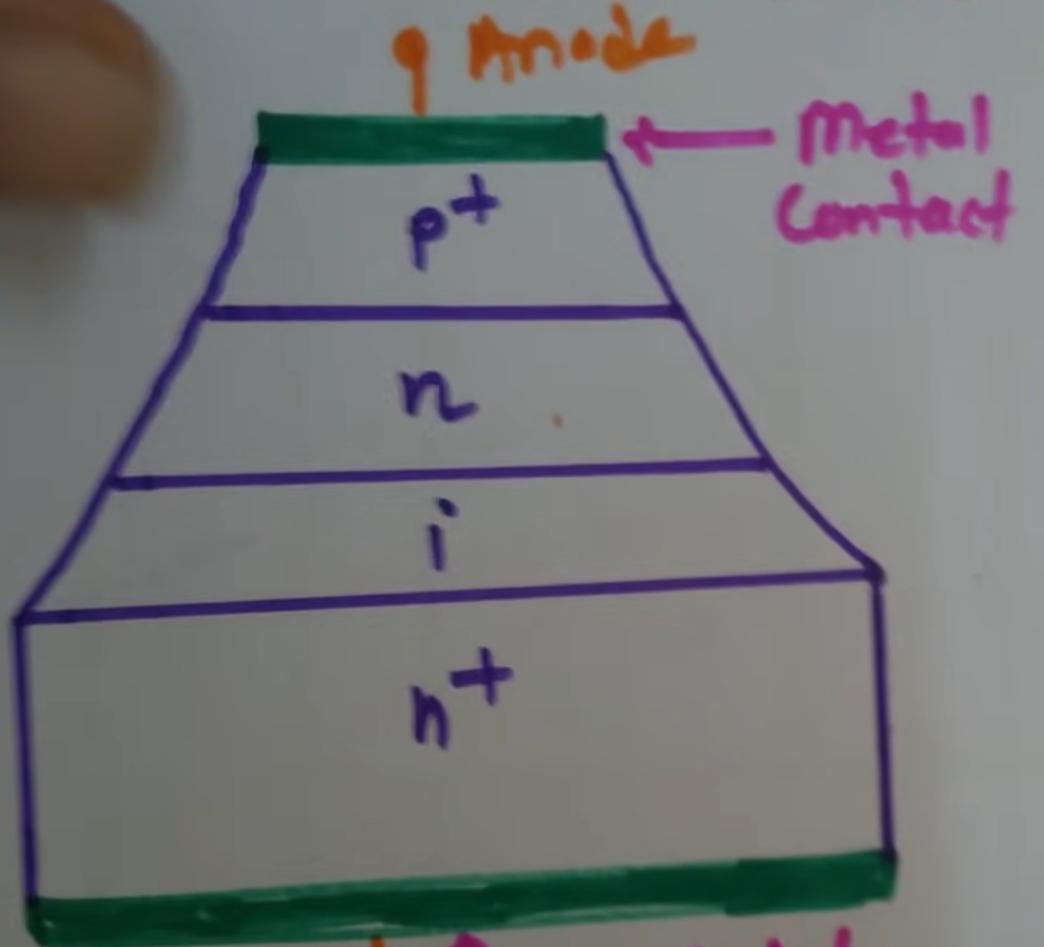
* Session Outline

- Basics of IMPATT Diode
- Internal Structure of IMPATT Diode
- Electric field for IMPATT Diode
- IMPATT Diode characteristics
- IMPATT Diode Working

* Basics of IMPATT Diode

- Original Proposal of IMPATT type was made by Read.
- It is high Power microwave device.
- It is working at 3 GHz to 300 GHz.
- Main Advantage, it has high Power handling capacity.
- Main Dissadvantage, it has phase noise

Structure of IMPATT Diode



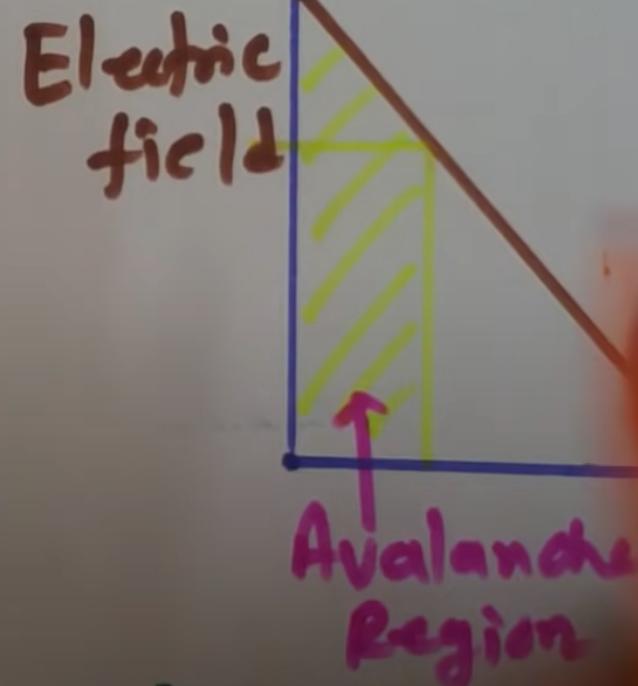
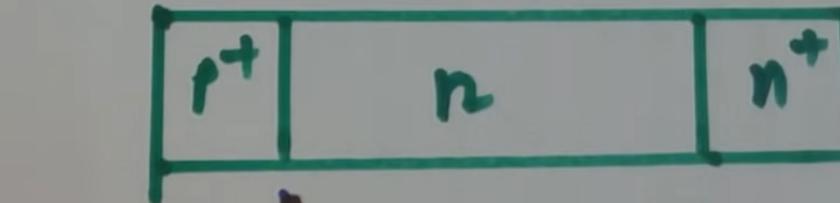
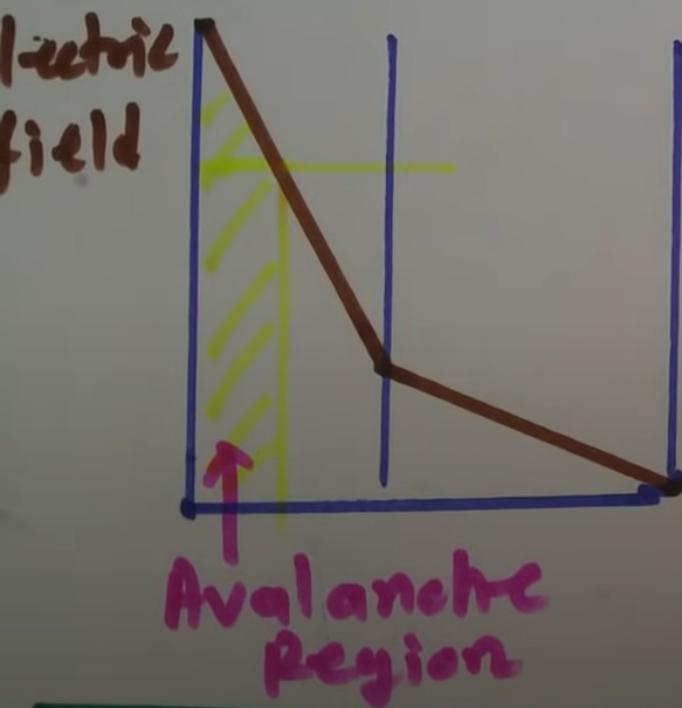
→ It has vertical structure which lead high power handling capacity.

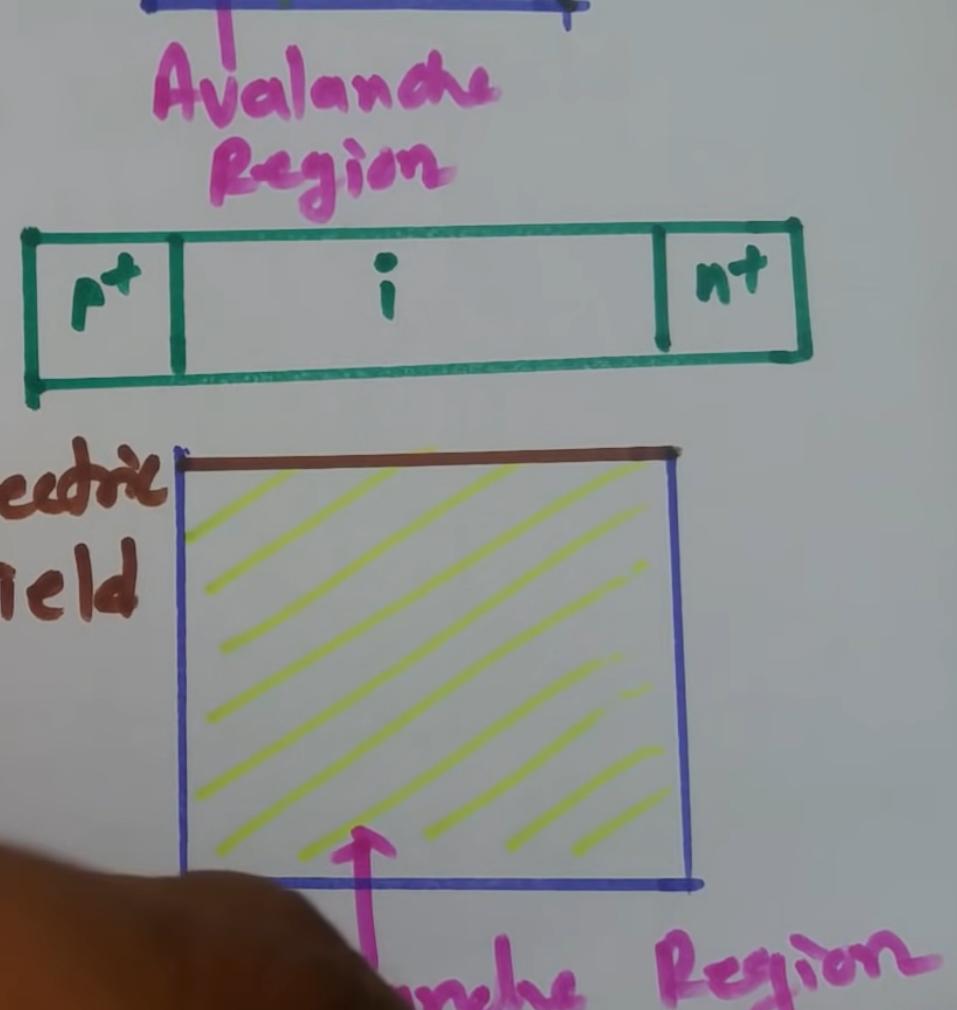
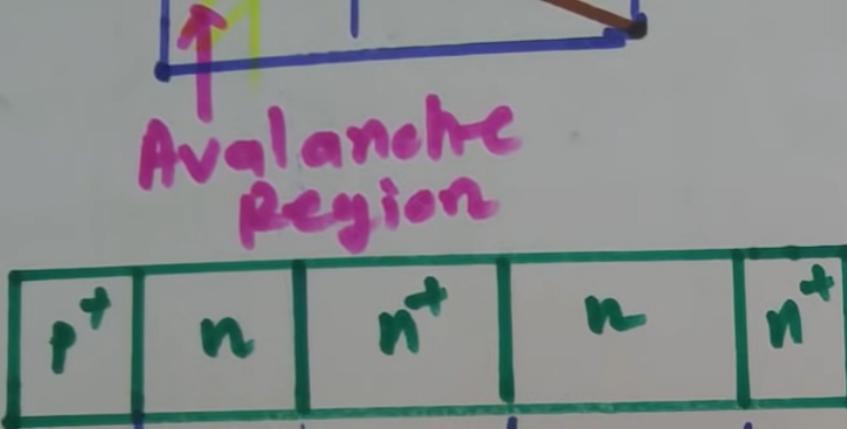
→ It can be made up of $KaF3$, Si

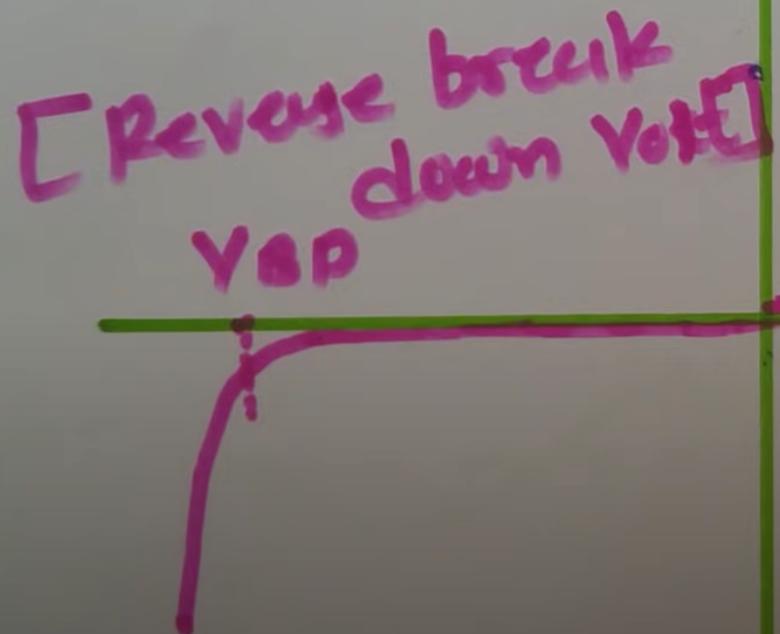
↓ ↑ Metal
Contact Contact

* Electric field Profile for IMPATT Diode

Electric field Profile for IMPATT Diode







Forward
Bias
characteristics

voltage
V

