



# **SNS COLLEGE OF TECHNOLOGY**

**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 ELECTRICAL AND ELECTRONICS ENGINEERING**

### **19EET301 / POWER ELECTRONICS AND DRIVES**

#### **V SEM EEE**

#### *UNIT 1 – POWER ELECTRONIC DEVICES*

#### *TOPIC – INTRODUCTION*

**Dr. R. Senthil Kumar**

**Associate Professor**

**Dept of EEE**



## Introduction to Power Electronics

### Solid State Devices:

Electronic equipment using semiconductor devices such as transistors, diodes and integrated circuits



Silicon



Semiconductor Devices



## Power Electronics Device or Solid state devices

Power Electronics Devices are used to



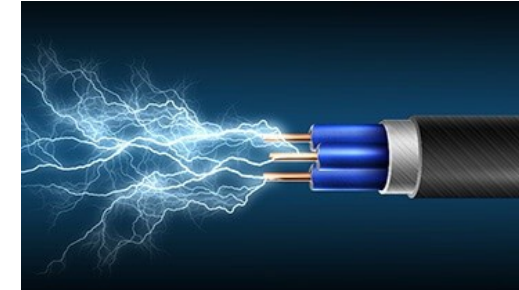
Control

&

Convert



Electrical Power





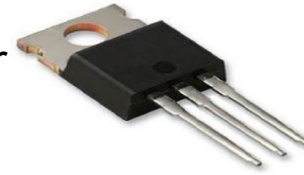
## Power Electronics Device or Solid state devices

Power Electronics Devices are



Current Control

SCR- Silicon controlled rectifier

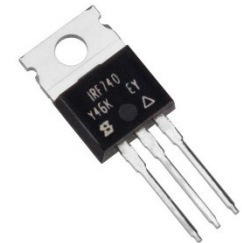


TRIAC- Triode for AC

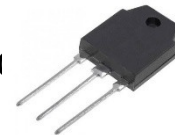


Voltage Control

MOSFET- metal-oxide-semiconductor field-effect transistor

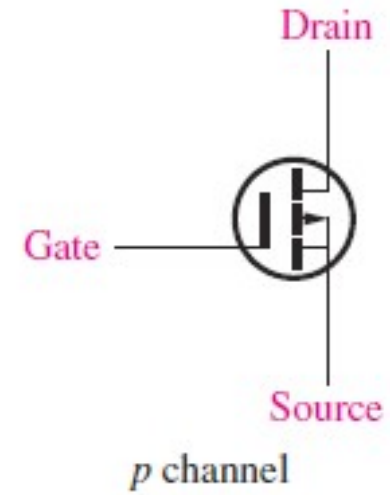
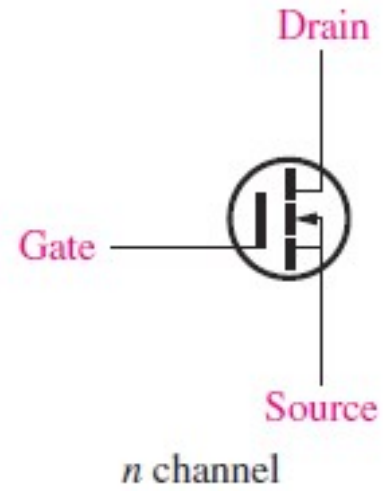
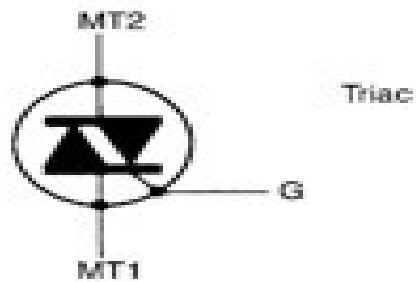
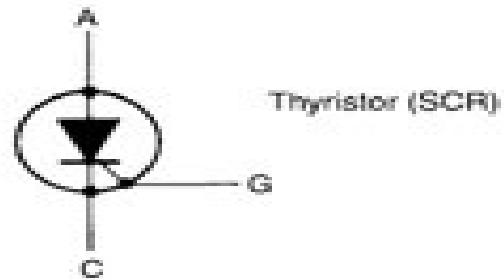
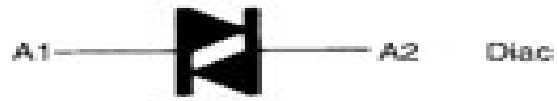
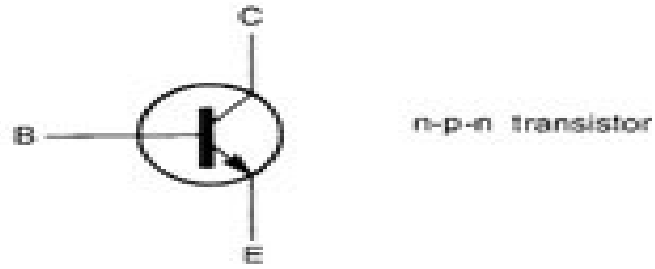


IGBT- Insulated-gate bipolar transistor





## Power Electronics Device- Symbol





# Power Conversion:

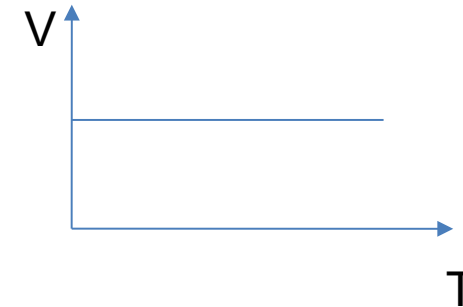
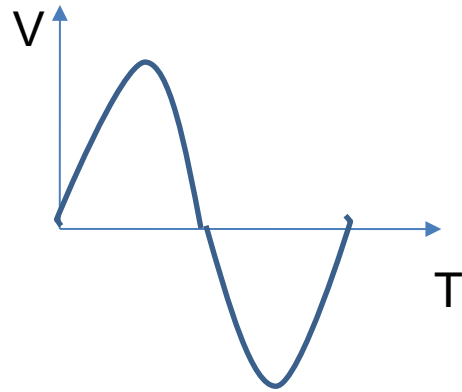
Conversion Process takes place by the PE Devices

- Converter
- Inverter
- Chopper
- Cyclo converter



# Converters

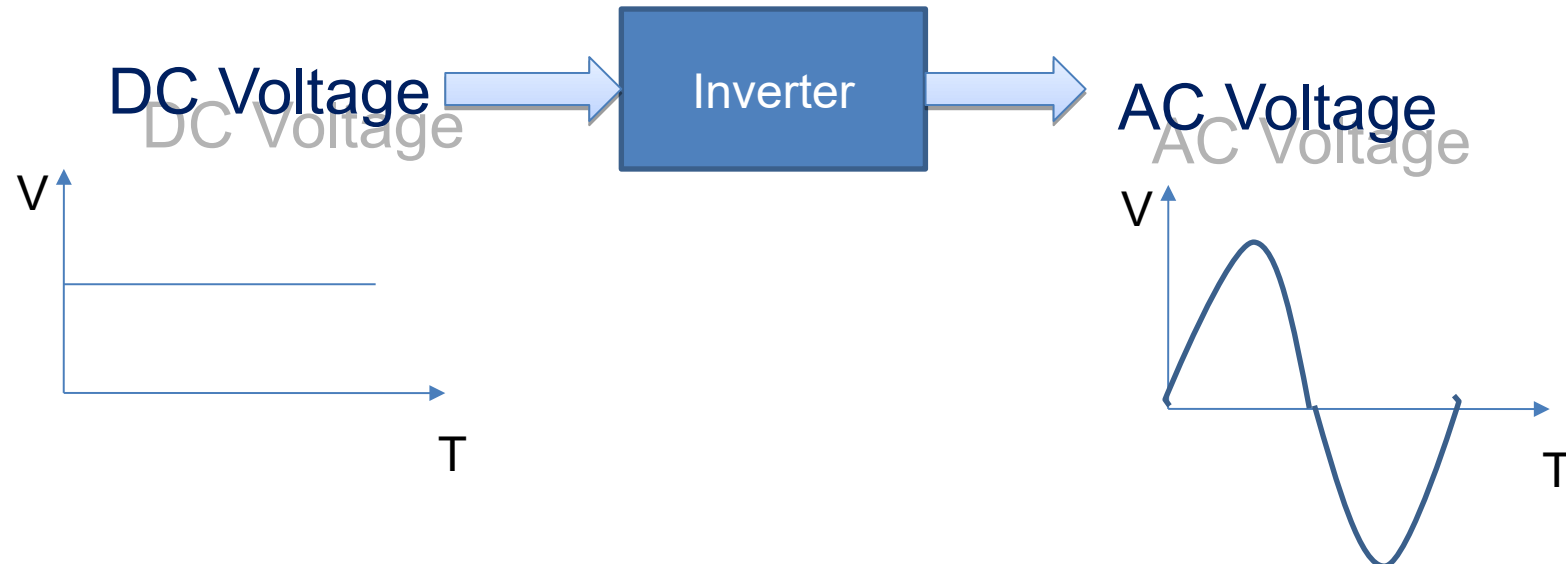
Converter is used to convert the AC Voltage into DC Voltage





# Inverters

Inverter is used to convert the DC Voltage into AC Voltage

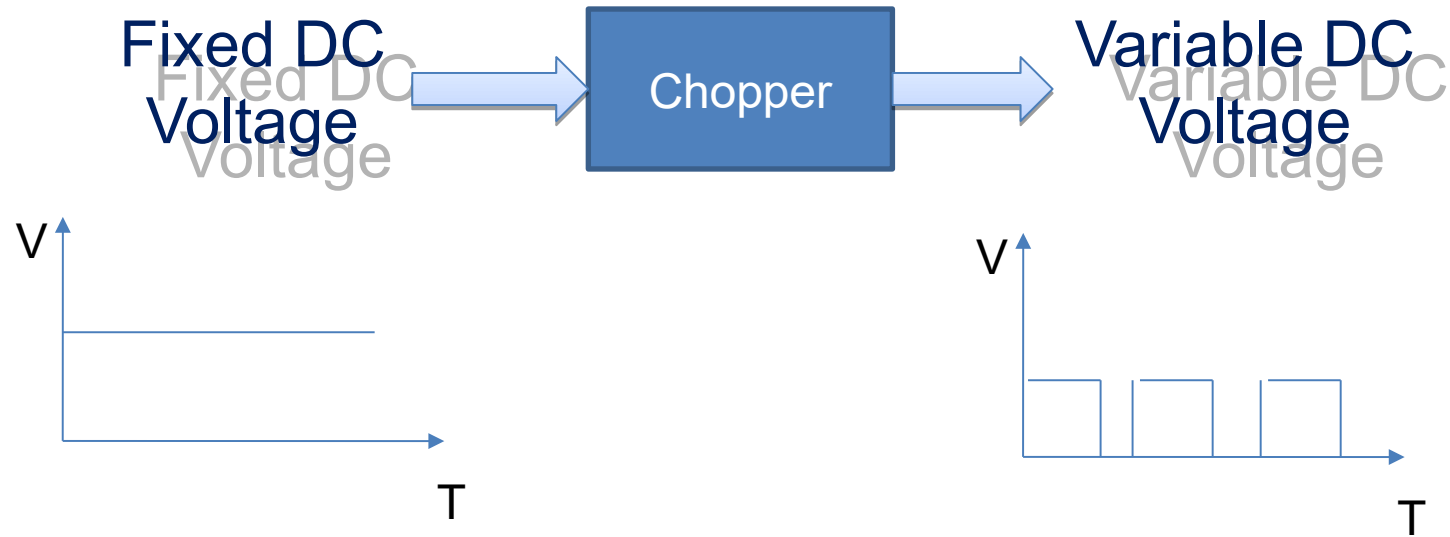






# Chopper

Chopper is used to convert the fixed DC Voltage into Variable DC Voltage





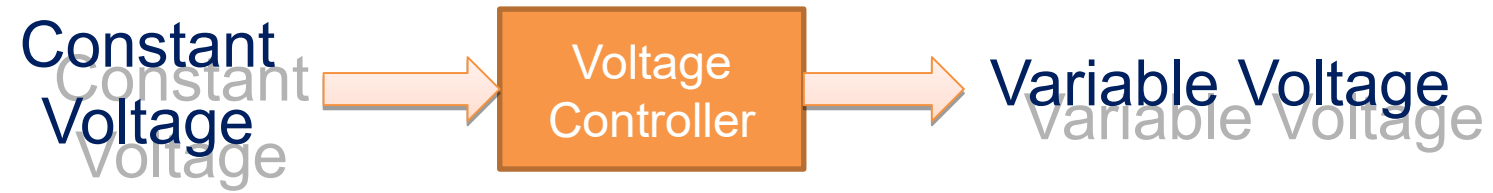
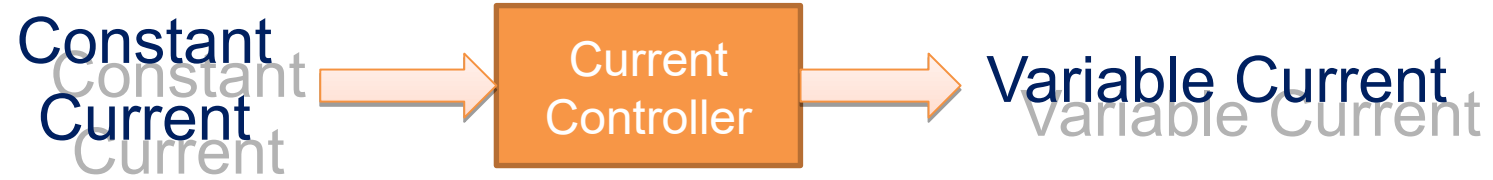
# Cyclo Converters

Cyclo Converter is used to convert the Fixed AC Voltage into Variable AC Voltage



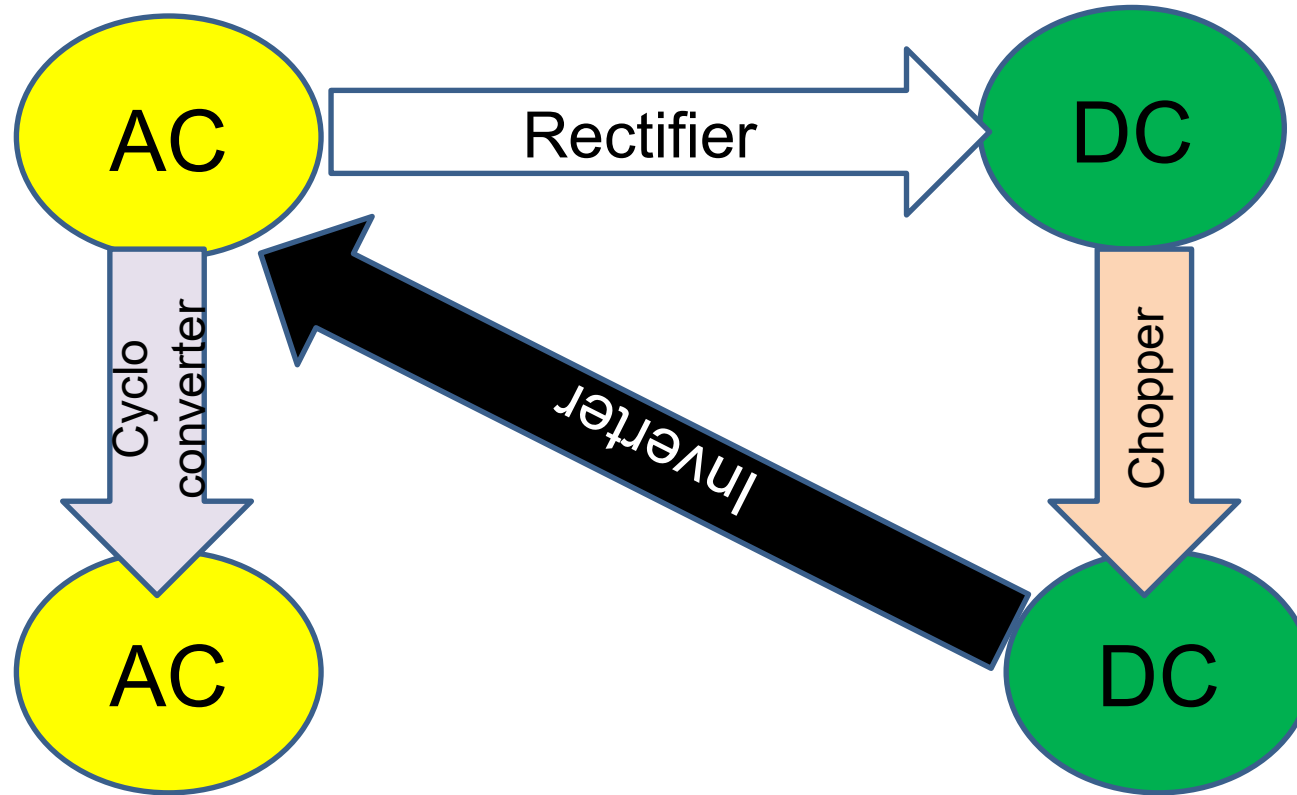


Control



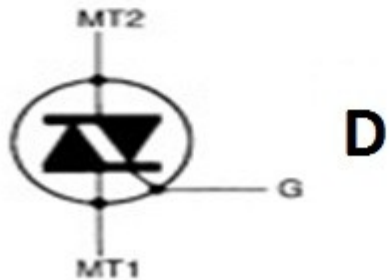
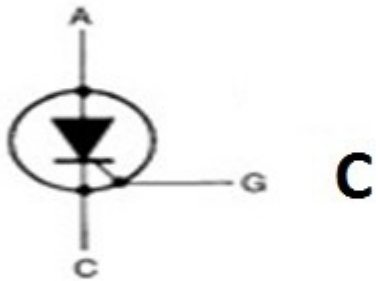
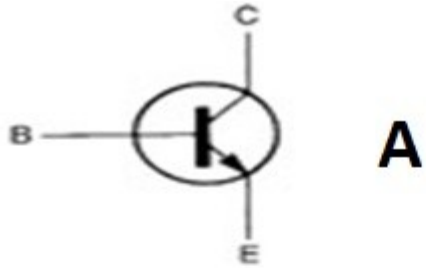


# Conversion Process





Find the name of the symbol...





## References

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