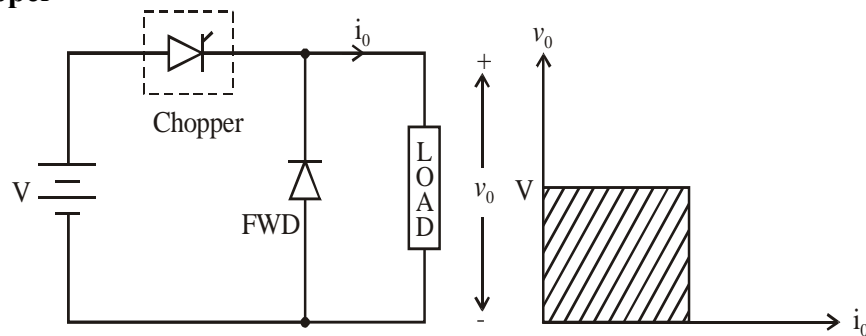


CLASSIFICATION OF CHOPPERS - I

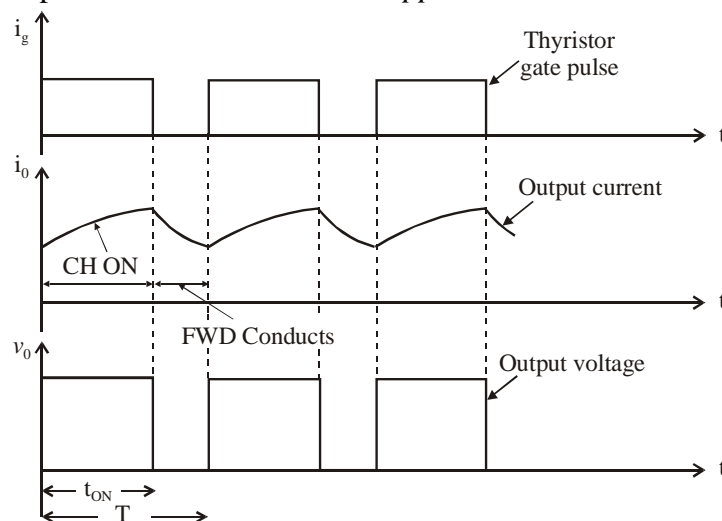
Choppers are classified as

- Class A Chopper
- Class B Chopper
- Class C Chopper
- Class D Chopper
- Class E Chopper

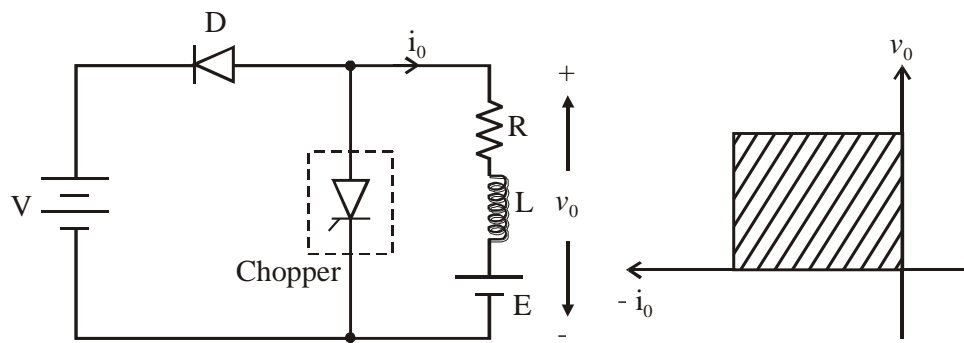
1. Class A Chopper



- When chopper is *ON*, supply voltage V is connected across the load.
- When chopper is *OFF*, $v_0 = 0$ and the load current continues to flow in the same direction through the FWD.
- The average values of output voltage and current are always positive.
- *Class A Chopper* is a first quadrant chopper .
- *Class A Chopper* is a step-down chopper in which power always flows form source to load.
- It is used to control the speed of dc motor.
- The output current equations obtained in step down chopper with $R-L$ load can be used to study the performance of *Class A Chopper*.



2. Class B Chopper



- When chopper is ON, E drives a current through L and R in a direction opposite to that shown in figure.
- During the ON period of the chopper, the inductance L stores energy.
- When Chopper is OFF, diode D conducts, and part of the energy stored in inductor L is returned to the supply.
- Average output voltage is positive.
- Average output current is negative.
- Therefore *Class B Chopper* operates in second quadrant.
- In this chopper, power flows from load to source.
- *Class B Chopper* is used for regenerative braking of dc motor.
- *Class B Chopper* is a step-up chopper.

