HALF WAVE RECTIFIER WITH FILTER:

The output of the Half Wave rectifier is pulsating DC instead of steady-state. Where the electronic devices work on steady-state DC and some device may response unexpectedly for such type of pulsating DC. A filter circuit may be required to convert the pulsating DC to steady-state DC output.

HALF WAVE RECTIFIER WITH 'C' FILTER:

A simple filter circuit which uses a capacitor filter is discusssed. In the capacitor input filter circuit, the output of Half Wave rectifier is passed through a capacitor as shown in Figure 1.

For the first quarter of the positive cycle of the input voltage, the capacitor will charge up to the supply maximum voltage V_p. For the second quarter of the positive cycle, the diode will become reverse bias because of the cathode at a higher potential than the anode. So, for the rest of the cycle, the capacitor will provide current to the load and discharge until the supply voltage becomes more than that of capacitor voltage. As the input voltage increased from the capacitor voltage the capacitor will again start charging and the chain will remain. The discharging time of the capacitor depends upon the RC time constant.

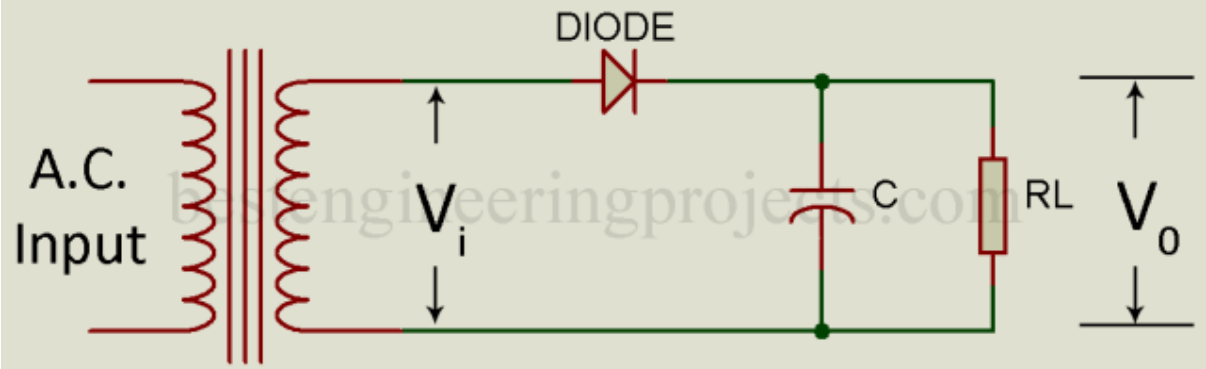


Figure 1: Halfwave Rectifier with Capacitor Filter

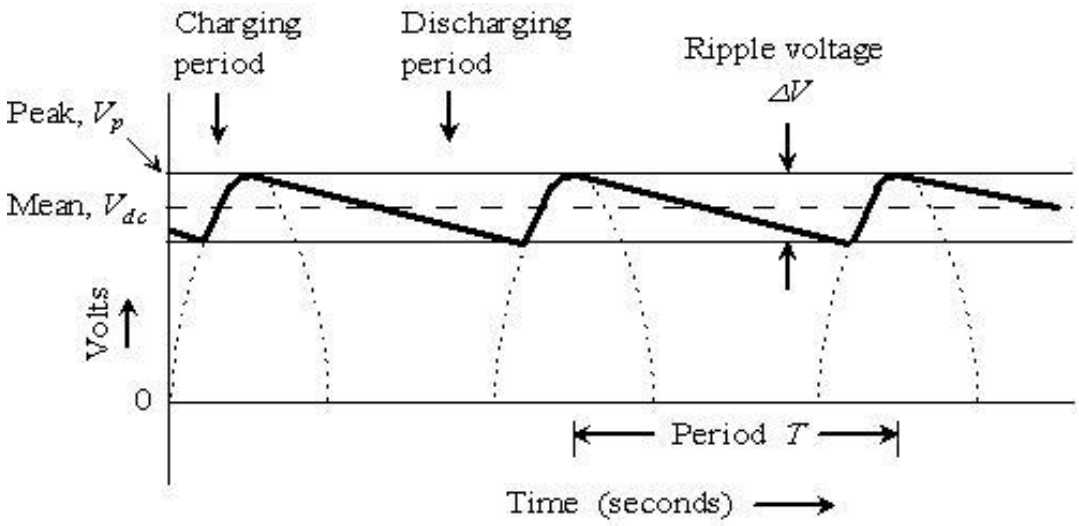
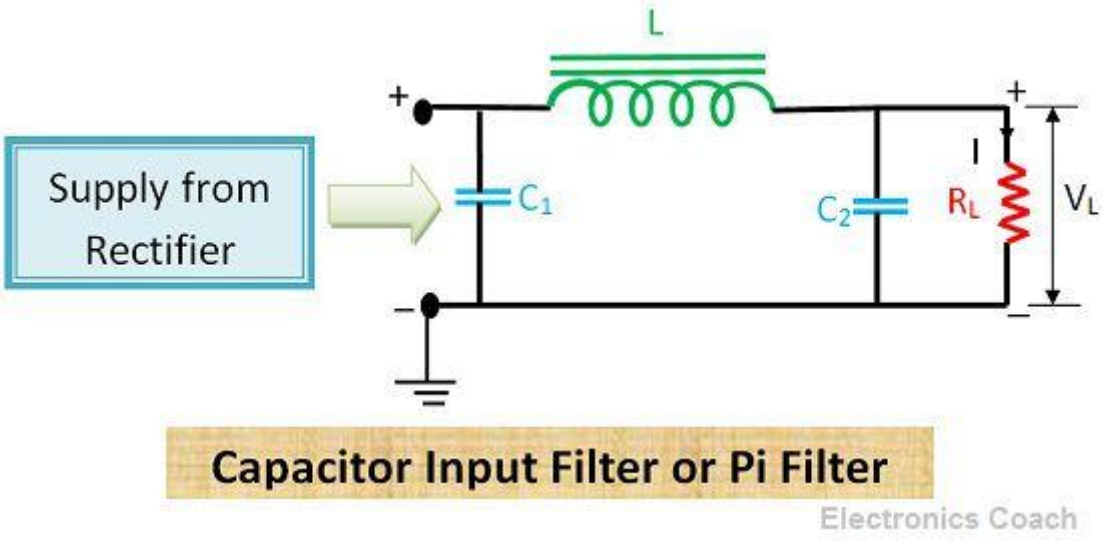
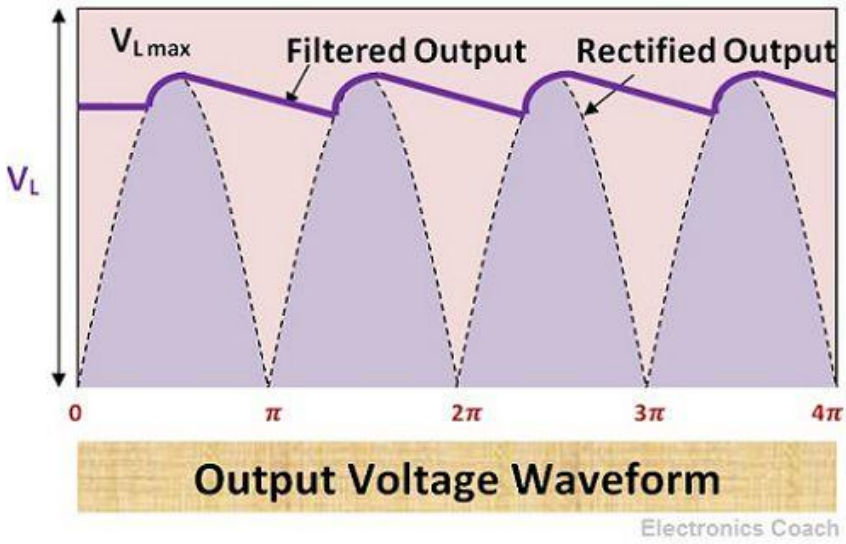


Figure 2 : Output Waveform After Filter Circuit

HALF WAVE RECTIFIER WITH 'π' FILTER:





NOTE: Details Of This Topic Will Be Discussed When Normal Classes Will Resume.