

Now if we connect two diodes both reverse to each other in parallel then the output is clipped in both the half cycles. The diode D_1 clips the positive half cycle the same as it does in the positive clipper. The diode D_2 clips the negative half cycle the same as it does in the negative clipper.

→ They are used as VOLTAGE LIMITER CIRCUITS.

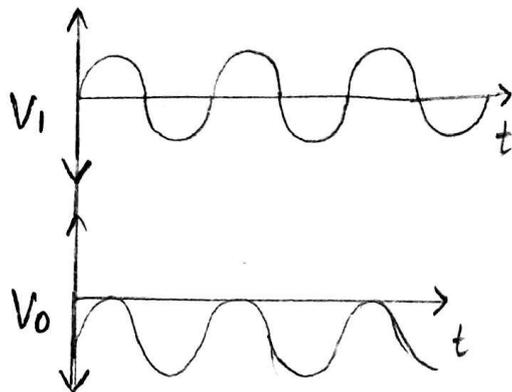
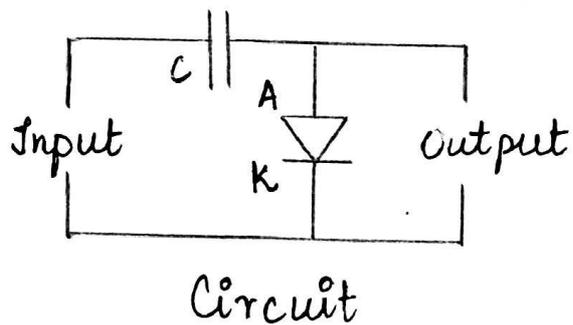
Clamper Circuits :-

The clamper circuit shifts the waveform to a different DC level without changing the applied signal level. The circuit consists of a capacitor, a diode & a resistor.

This is also called a level shifter because we can shift the level of the signal by using a clamping circuit.

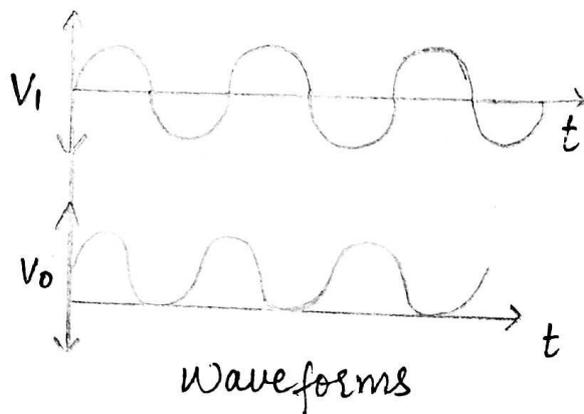
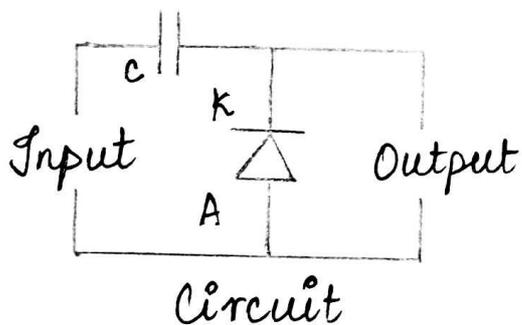
As the circuit consists of a capacitor connected parallel across the load. The capacitor circuit depends upon the time constant of the capacitor. Then the capacitor charges when the diode is forward biased & starts conducting. The capacitor should not discharge drastically when the diode is reverse biased. There are two types of clamper circuits i.e. positive & negative clampers.

NEGATIVE CLAMPER



The diode conducts in the positive half cycle as it is forward biased & the capacitor charges. In the negative half cycle the output is the sum of input voltage stored across the capacitor.

POSITIVE CLAMPER



In this, diode is connected in the opposite direction than in the negative clamper. In this case the output voltage is the sum of input voltage & capacitor voltage. The diode conducts in the negative half cycle & charges the capacitor. Hence, the voltage is clamped in a positive direction.

CLIPPER CIRCUITS APPLICATIONS :

The main purpose of the clipper circuit is to modify the waveform of the signal which can be used in several applications such as in protection against overvoltage, noise removal, transmission etc.

- The clipper circuit offer overvoltage protection therefore, it is used in power supplies of the limiting the voltage.
- They are used for filtering noise in transmitters.
- They are used in transmitters & receivers of television.
- They are used for modifying or generating new waveforms such as square, triangular etc.

APPLICATIONS OF CLAMPERS :

- clammers are frequently used in removing the distortions & identification of polarity of the circuits
- for improving the reverse recovery time, clammers are used.
- clamping circuits can be used as voltage doublers & for modelling the existing waveforms to a required shape & range.
- clammers are widely used in test equipment & other sonar systems.