Electronics Laboratory
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Experiment No. 5

Clamping Circuits

Object:

To steady the diode applications in clamping circuits.

Apparatus:

1. Function Generator.
2. Oscilloscope.
3. DC Power Supply.
4. Breadboard, Diodes, Capacitors and Resistor.

Theory:

This experiment studies the applications of the diode in the clampingoperations.

1. Clamping Circuits:

A clamper does is adding a DC component to the signal. In Figure (2) the input signal is a sine wave, the clamper pushes the signal upward, so that the negative peaks fall on the 0V level. As can see, the shape of the original signal is preserved, all that happenis vertical shift of the signal. We described an output signal for a positive dampen- On the Figure (2) show represents a positive clamper ideally here how it is works. On the first negative half cycle of input voltage, the diode turns on At the negative peak, the capacitor must charge to V_p with polarity shown. Slightly beyond the negative peak, the diode shunts off**.**

Procedure:

Clamping Circuit:

1. Connect the circuit shown in Figure (2).
2. Ensure the variable DC is at minimum.
3. Set the sine wave generator frequency to 1KHz and its output amplitude to $10V_{P.P}$.
4. Observe and sketch the input waveform with the variable DC at minimum, Sketch the output waveform.

Discussion:

1. What happened if the DC voltage in the clamping circuit is replaced by an a.c source?
2. If the input voltage $10_{VP.P}$, sketch the output of the circuit shown below.

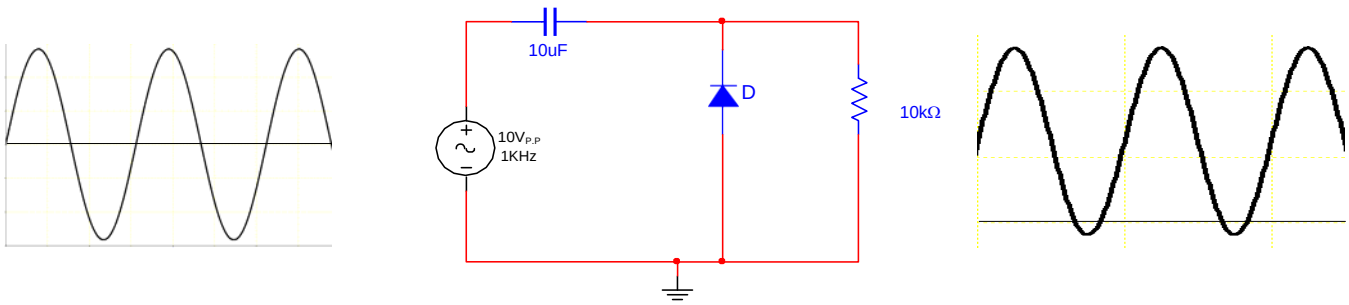

Fig. 1 Clamping circuit

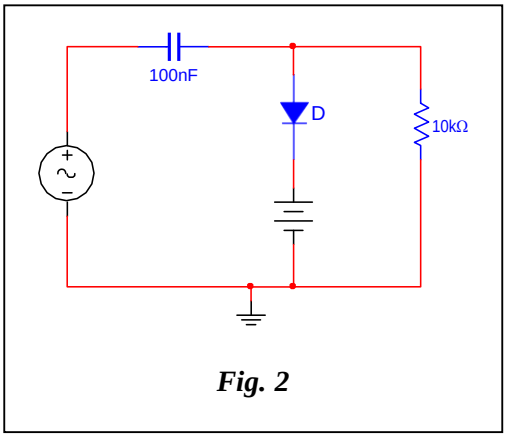

Fig. 2