College of Engineering

Electrical and Computer Engineering Department

EE-311

Lab04: Clipper Circuit

Objectives:

The objective of this experiment is to study the behavior of semiconductor diodes in clipper circuits.

Clippers:

In electronics, a clipper is a device designed to prevent the output of a circuit from exceeding a predetermined voltage level without distorting the remaining part of the applied waveform. So, clipper circuit can remove certain portions of an arbitrary waveform near the positive or negative peaks.
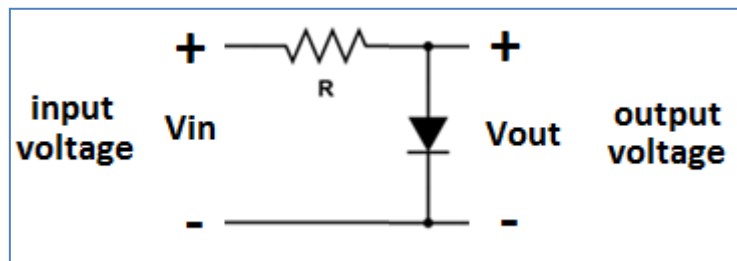
Clipper Circuit Diagram:
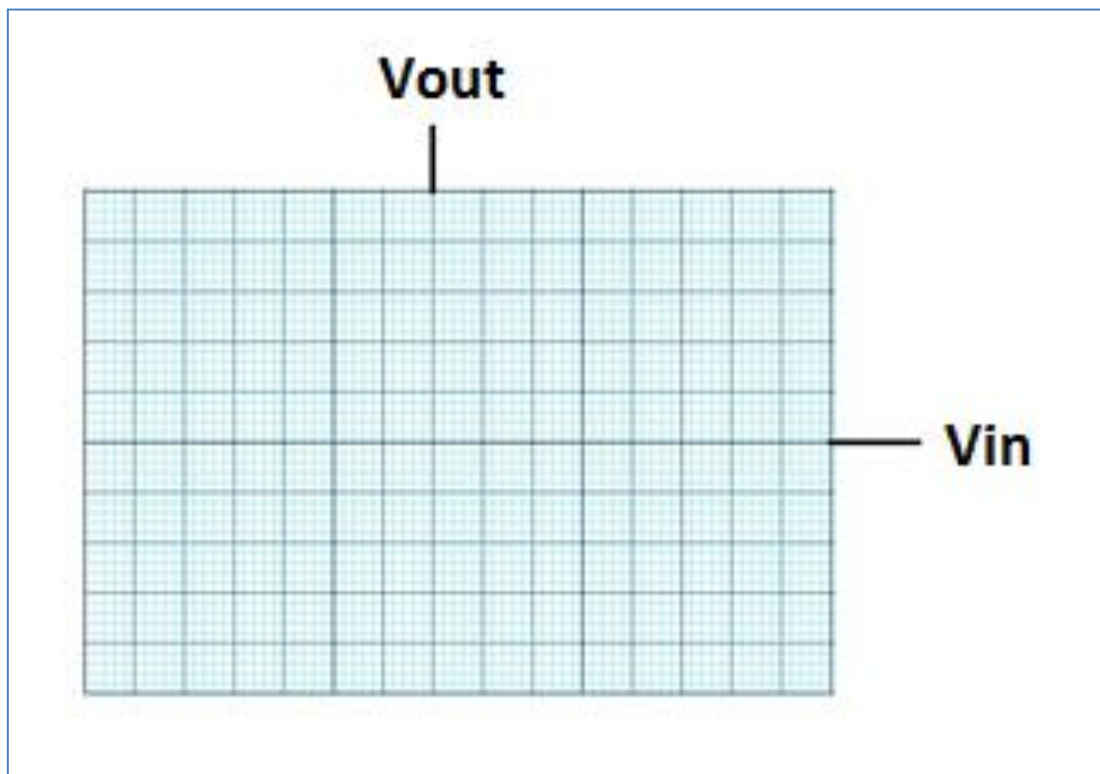

Fig. 1

LAB ACTIVITIES

Activity # 1:

Clippers (DC Analysis):

1) Connect the circuit as shown in Fig. 1

2) The input voltage is connected to the DC power supply.

3) The output is connected to the digital multi-meter to measure the output DC voltage.

4) Complete the following table:

Input Voltage Vin (Volts)	Output Voltage Vout (Volts)
-5	
-4	
-3	
-2	
-1	
0	
0.1	
0.2	
0.3	
0.4	
0.5	
0.6	
0.7	
0.8	
0.9	
1	
2	
3	
4	
5	

5) Sketch Vin versus Vout:

Activity # 2:

Clippers (AC Analysis):

1) Generate a sinusoidal signal of 10 V peak-to-peak and a frequency of 5 kHz as an input signal.

2) Show the input signal on CH1 and output signal on CH2 on the oscilloscope screen.