



UNIVERSITY OF INFORMATION
TECHNOLOGY AND SCIENCES (UITs)
DEPARTMENT OF INFORMATION TECHNOLOGY

LAB REPORT : 6

ECE-252 : ELECTRONIC DEVICES AND CIRCUITS
LAB

**Familiarization with the
transistor characters of clipper
cir**

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1 Objective

The purpose of this study is to analyze and validate the operation of PN junction diodes as series and shunt clippers.

2 Theory

Clippers are classified as either series or parallel. The diode in a series configuration is in series with the load, whereas the diode in a parallel design is in a branch parallel to the load. Depending on the diode orientation, the positive or negative portion of the input signal is "clipped" off.

3 Apparatus List

Sl	Name	Ratings	Quantity
1	Bread Board	-	1
2	Diode	2N4007	1
3	Resistor	10K Ω	2
4	AC voltage supplier	(0-220)V	1
5	Voltmeter	(0-20)V	1
6	Oscilloscope	-	1
7	Crocodile clip	-	5
8	Connecting wire	-	5

Figure 1: Table of Apparatus list that I used to examine this lab report.

4 Circuit Diagram

4.1 Positive clipper

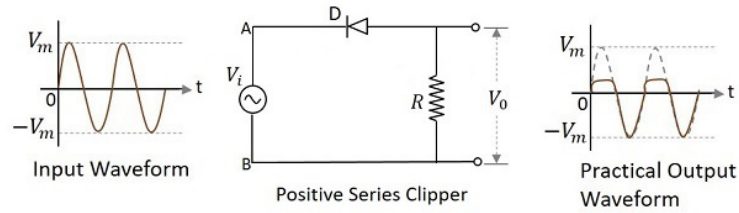


Figure 2: Positive clipper

4.2 Negative Clipper

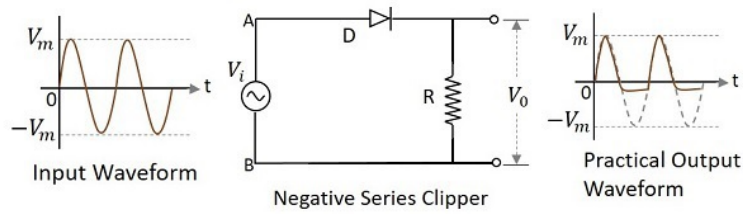


Figure 3: Negative clipper

5 Calculation

Positive clipper: $V_o = -(R_L/R + R_L) * V_{in}$

Here, $V_{in} = 4V$

$V_m = 1.6V$

$V_o = -(10/10 + 10) * 4$

$= -2V$

Negative clipper:

$V_o = (R_L/R + R_L) * V_{in}$

Here, $V_{in} = 4V$

$V_m = 1.6V$

$V_o = (10/10 + 10) * 4$

$= 2V$

6 Graph

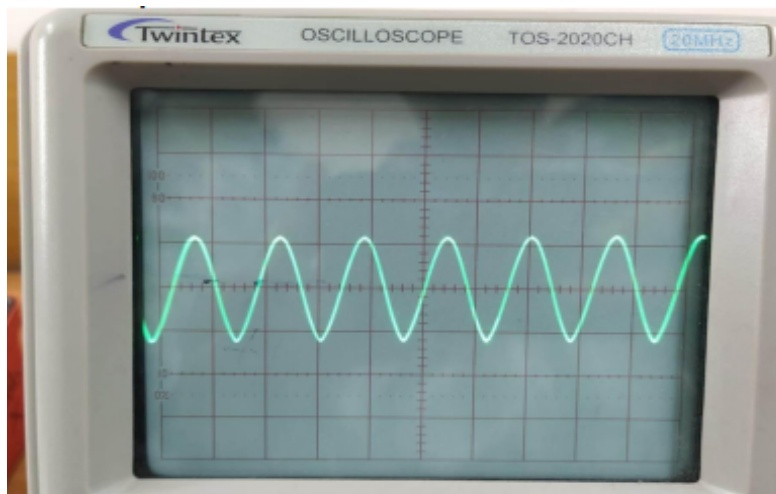


Figure 4:

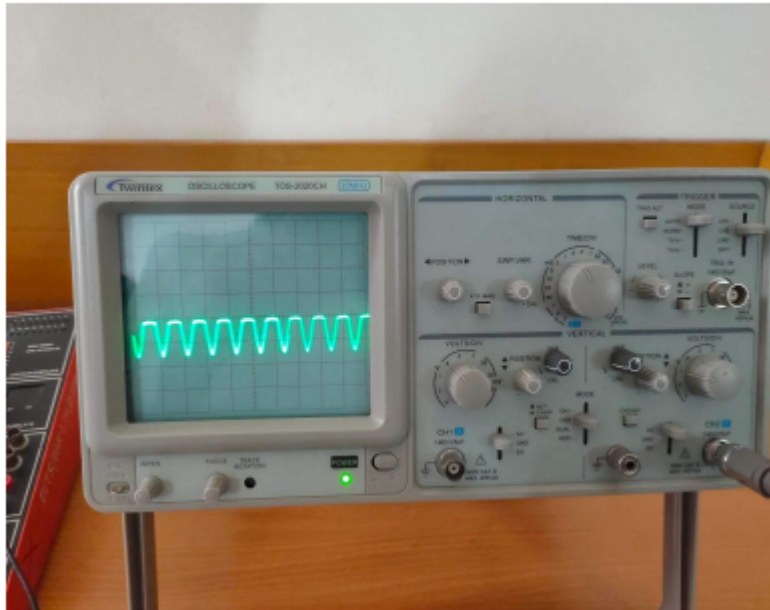


Figure 5:

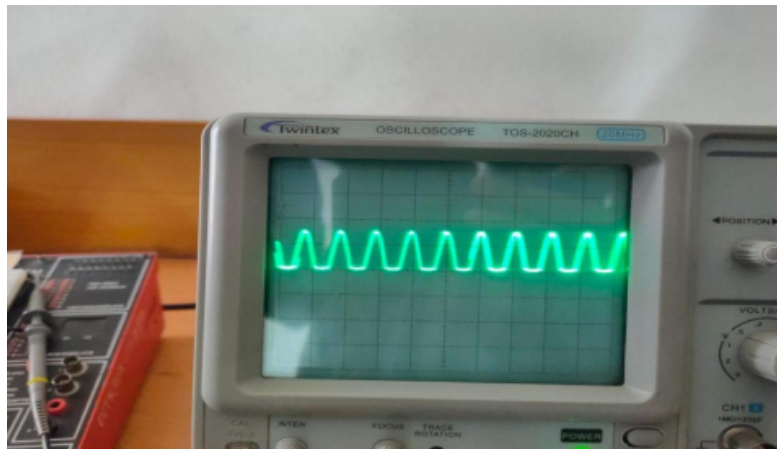


Figure 6:

7 Result

In electronics, a clipper is a circuit that stops a signal from reaching a predetermined reference voltage level. A diode is the heart of a basic diode limiter circuit

and a resistor. It is divided into three types: positive clipper circuits, negative clipper circuits, and combinational clipper circuits.

8 Conclusion

A clipper is a circuit that prevents a signal from reaching a predetermined reference voltage level. A basic diode limiter circuit consists of a diode and a resistor. It is classified into three types: positive clipper circuits, negative clipper circuits, and combinational clipper circuits.

9 References

<https://www.tutorialspoint.com/>
<https://www.google.com/>