# Exp.6: Clipping Circuits

## 1- ***Objectives:***

- To become familiar with the function and operation of clippers.

## 2-***Circuit elements:***

- Function generator.
- Oscilloscope.
- Silicon & Germanium diode.
- Resistor 2.2 KΩ.
- DC. Power supply unit (1.5 V).

## 3-***Procedure:***

Part 1: Parallel Clippers

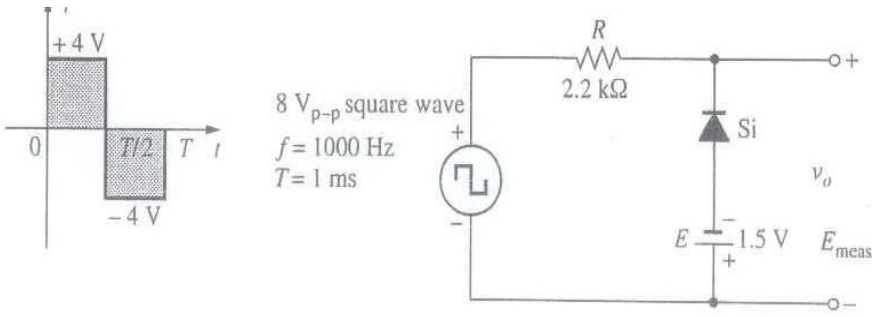



Fig 1

1- Connect the circuit as shown in figure 1. Note that the input is an 8 $V_{p-p}$ square wave at a frequency of 1000 Hz.

2- Calculate the voltage $V_o$ when the applied square wave is +4 V.

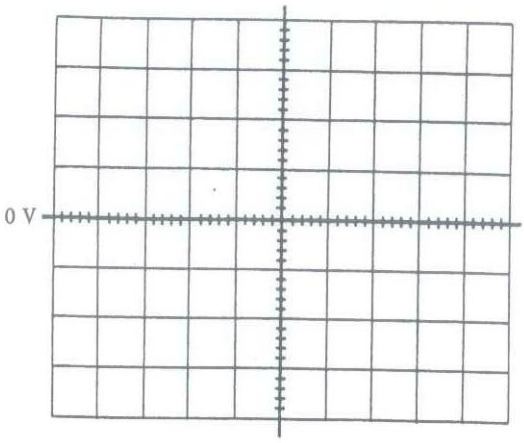
(Calculated) $V_o$ = ————

3- Repeat (2) when the applied square wave is -4 V.

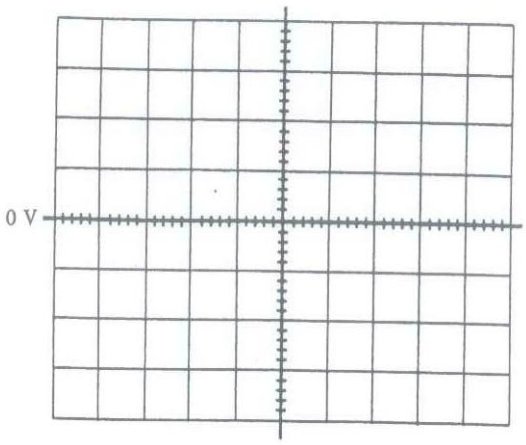
(Calculated) $V_o$ = ————

4- Sketch the expected waveform for $V_o$ .

Calculated:




Measured:




5- Compare with the predicted results.

6- Reverse the battery of fig 1, and calculate the level of $V_o$ when $V_o$ = +4 V.

(Calculated) $V_o$ = ————

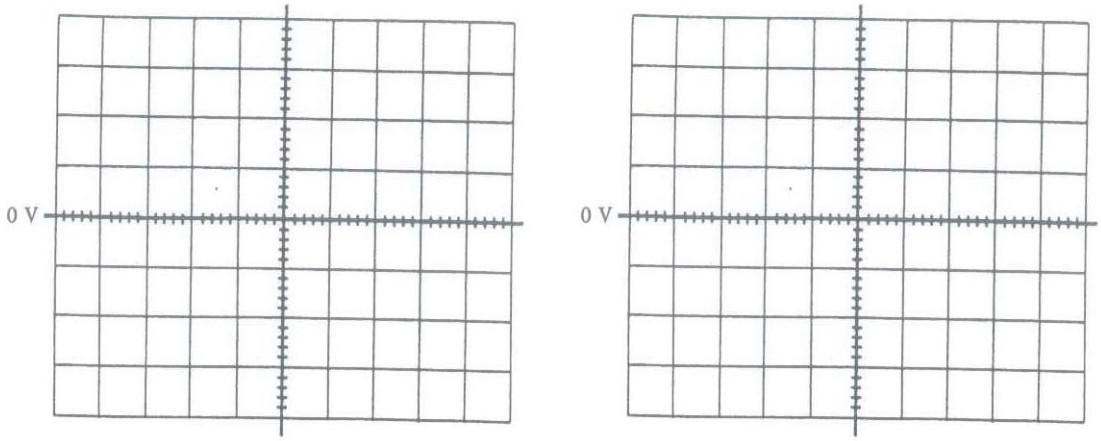
7- Repeat (6) when the applied square wave is -4 V.

(Calculated) $V_o$ = ————

8- Sketch the expected waveform for $V_o$ .

9- Compare with the predicted results.

Calculated: Measured:




## Part 2: Parallel Clippers (continued)

1- Connect the circuit as shown in figure 2. Note that the input is a 4 $V_{p-p}$ square wave at a frequency of 1000 Hz.

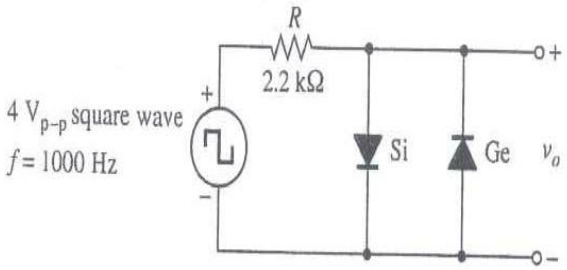



Fig 2

2- Calculate the voltage $V_o$ when the applied square wave is +2 V.

(Calculated) $V_o$ = _____

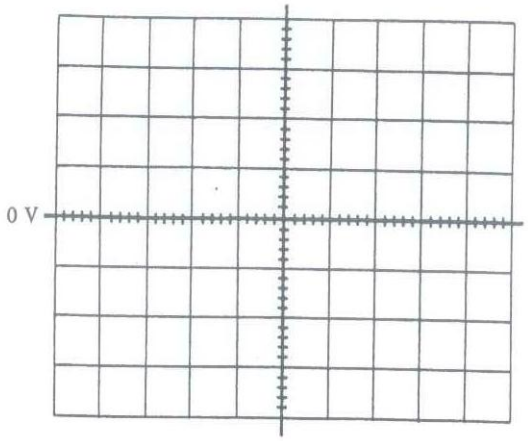
3- Repeat (2) when the applied square wave is -2 V.

(Calculated) $V_o$ = _____

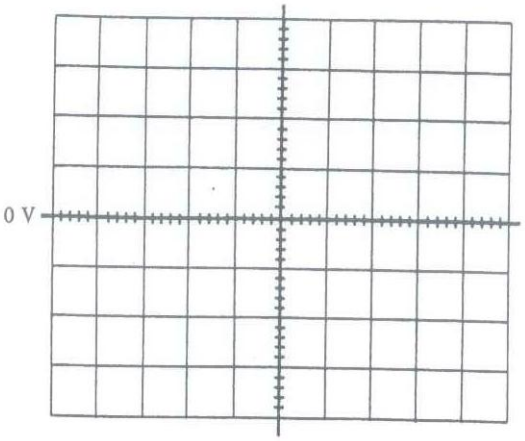
4- Sketch the expected waveform for $V_o$ .

5- Compare with the predicted results.

Calculated:




Measured:



## Part 3: Series Clippers

1- Connect the circuit as shown in figure 3. Note that the input is an 8 $V_{p-p}$ square wave at a frequency of 1000 Hz.

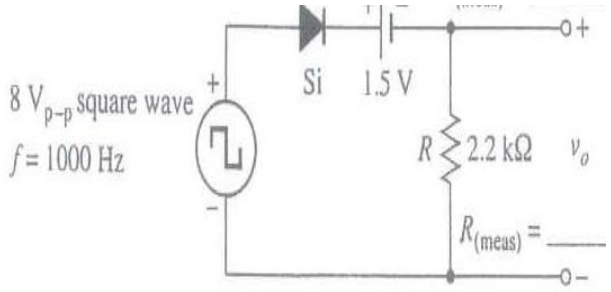



Fig 3

2- Calculate the voltage $V_o$ when the applied square wave is +4 V.

(Calculated) $V_o$ = ————

3- Repeat (2) when the applied square wave is -4 V.

(Calculated) $V_o$ = ————

4- Sketch the expected waveform for $V_o$ .

5- Compare with the predicted results.

6- Reverse the battery of fig 1, and calculate the level of $V_o$ when $V_o$ = +4 V.

(Calculated) $V_o$ = ————

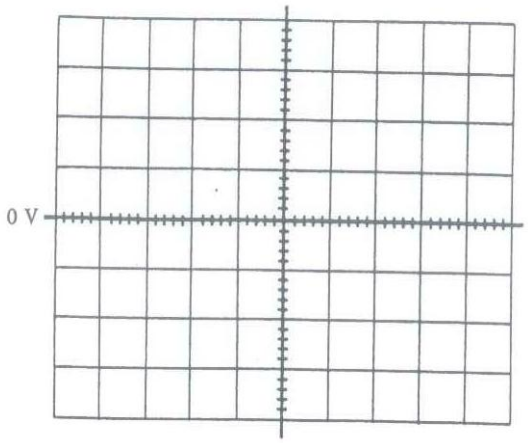
7- Repeat (6) when the applied square wave is -4 V.

(Calculated) $V_o$ = ————

8- Sketch the expected waveform for $V_o$ .

9- Compare with the predicted results.

Calculated:




Measured: