

**Title of the experiment:** Design of Negative peak shunt Clipper using multisim.

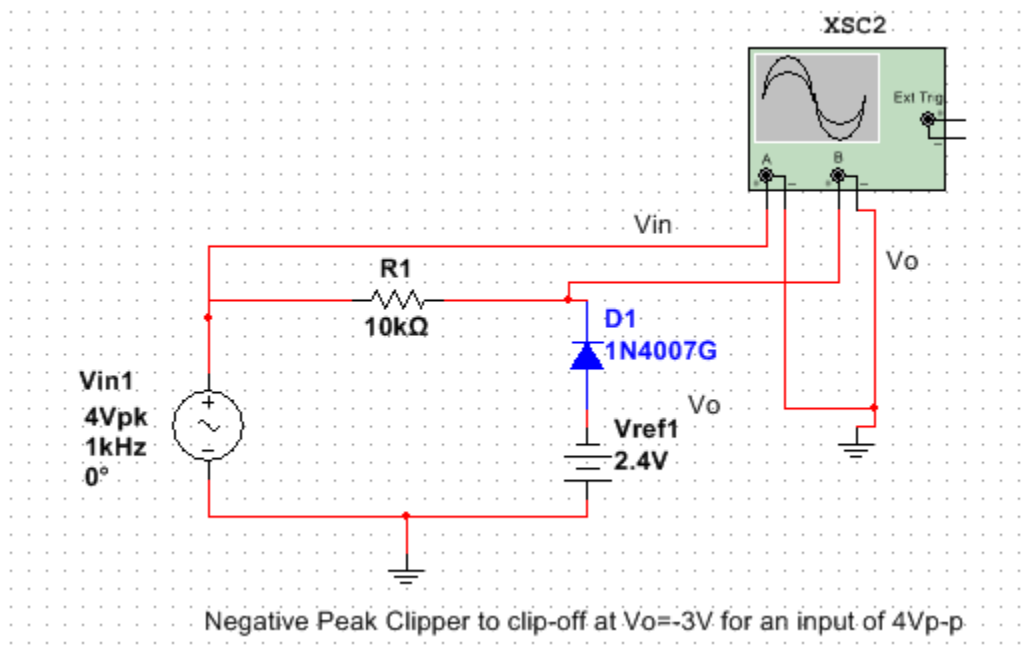
**Theory:** In electronics, a **clipper** is a device designed to prevent the output of a circuit from exceeding a predetermined voltage level without distorting the remaining part of the applied waveform.

A clipping circuit consists of linear elements like resistors and non-linear elements like junction diodes or transistors, but it does not contain energy-storage elements like capacitors. Clipping circuits are used to select for purposes of transmission, that part of a signal wave form which lies above or below a certain reference voltage level.

Thus a clipper circuit can remove certain portions of an arbitrary waveform near the positive or negative peaks. Clipping may be achieved either at one level or two levels. Usually under the section of clipping, there is a change brought about in the wave shape of the signal.

The input to the circuit is an AC signal with 4V(p-p) and Frequency of 1KHz. Let the output to be clipped is -3V. Hence the reference voltage is kept at -2.4V. The diode cut-in voltage is 0.6V.

**Schematic diagram:**



**Fig1: Schematic diagram**

## Simulation waveform:

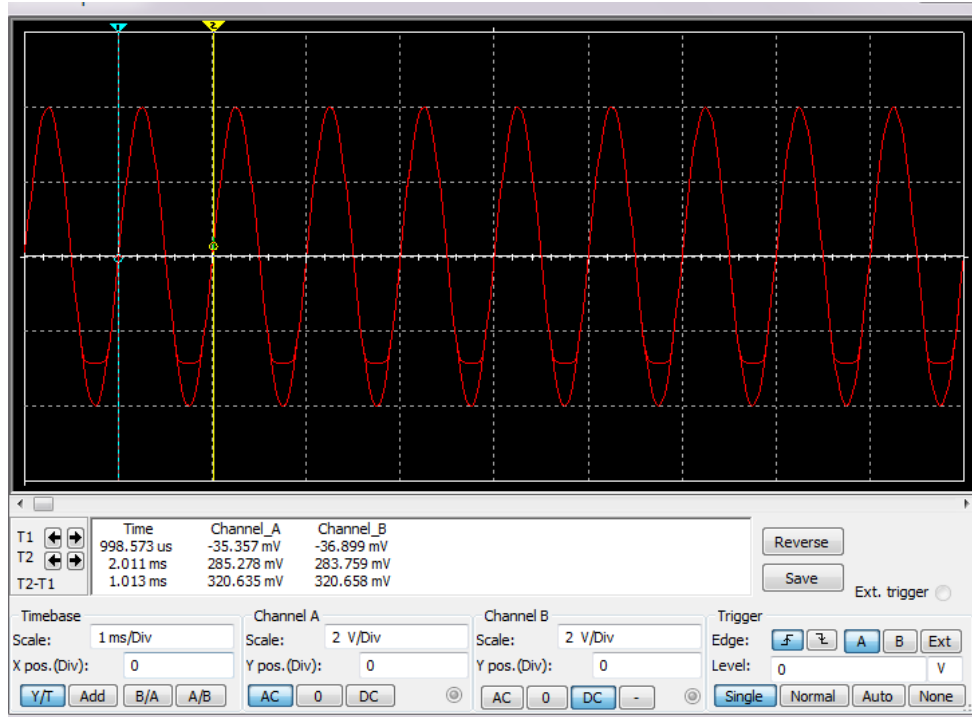


Fig 2: Output waveform

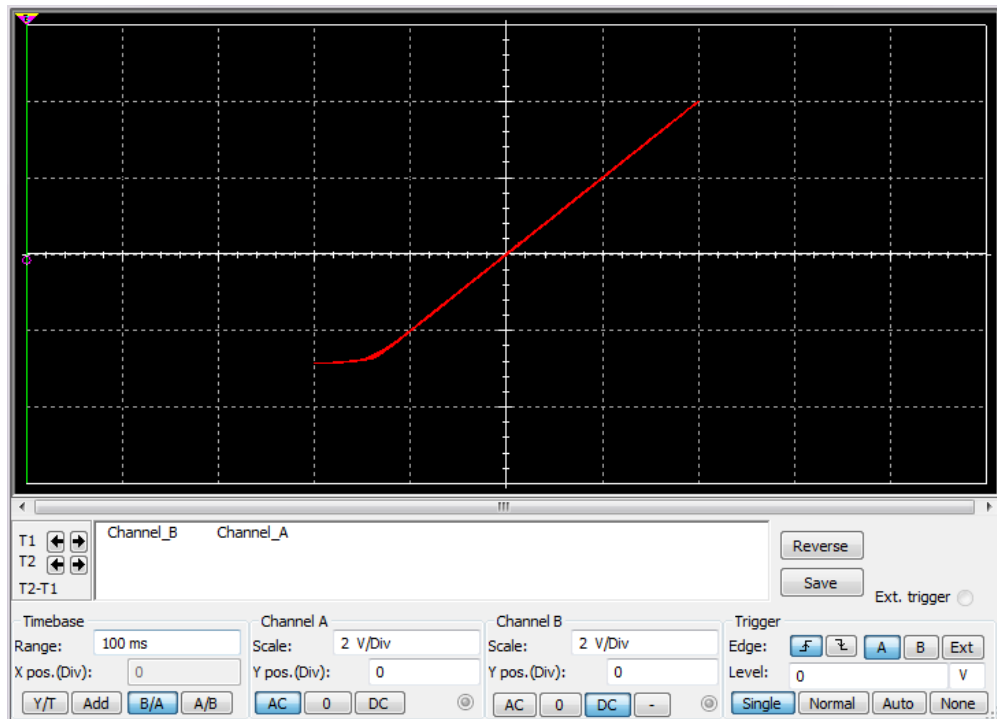


Fig 2: Transfer characteristics plot

**CONCLUSION:** Therefore conclude that this project is indeed suitable for wave shaping of input signals. For a given input of -4V Negative peak, it is clipped at -3V.