

# DESIGN OF POSITIVE CLAMPER:

## INTRODUCTION:

A Positive Clamper circuit is one that consists of a diode, a resistor and a capacitor and that shifts the output signal to the positive portion of the input signal.

During the negative half cycle, at the peak value, the capacitor gets charged with negative on one plate and positive on the other.

## CIRCUIT ANALYSIS:

A clamper is an electronic circuit that changes the DC level of a signal to the desired level without changing the shape of the applied signal. In other words, the clamper circuit moves the whole signal up or down to set either the positive peak of the signal at the desired level.

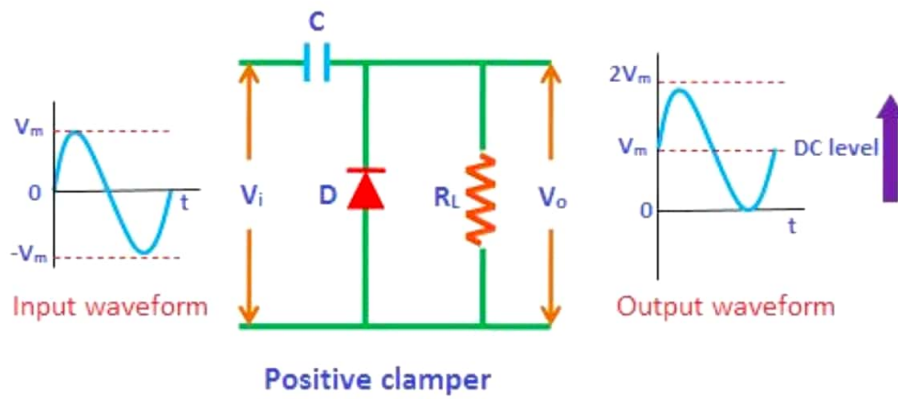
During negative half cycle:

During the negative half cycle of the input AC signal, the diode is forward biased and hence no signal appears at the output. In forward biased condition, the diode allows electric current through it. This current will flow to the capacitor and charge it to the peak value of input voltage  $V_m$ .

During positive half cycle:

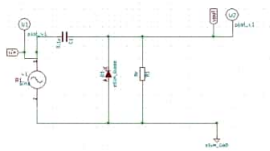
During the positive half cycle of the input AC signal, the diode is reverse biased and hence the signal appears at the output. In reverse biased condition, the diode does not allow electric current through it. So the input current directly flows towards the output.

## Circuit diagram:



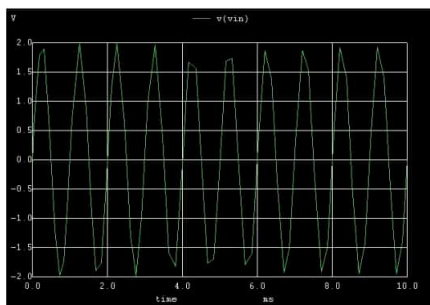
*Physics and Radio-Electronics*

## RTL SCHEMATIC USING ESIM SOFTWARE:

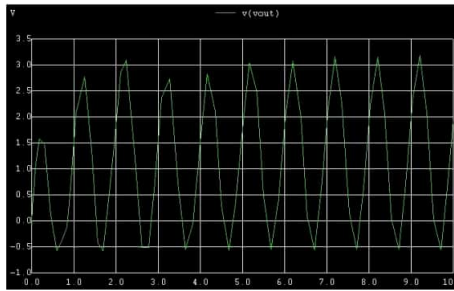


## NGSPICE PLOT:

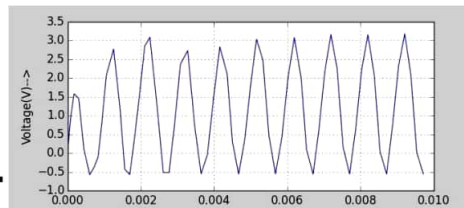
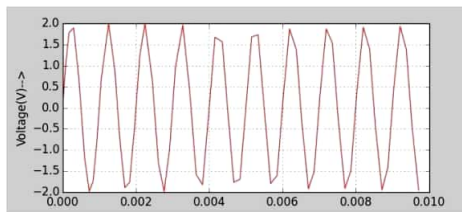
### INPUT PLOT:



### OUTPUT PLOT:



## PYTHON PLOT: INPUT PLOT:



## OUTPUT PLOT

## REFERENCE:

[www.tutorialspoint.com](http://www.tutorialspoint.com) › [electronic\\_circuits](#) › [electronic\\_clamper\\_circuits](#)