SOLID STATE _LAB2

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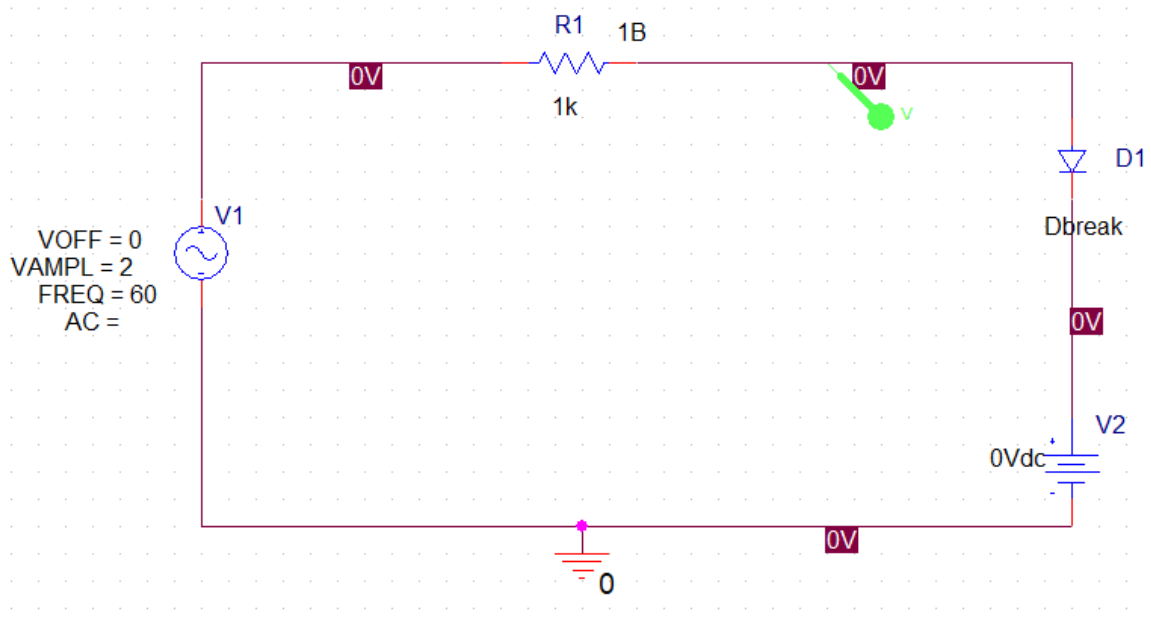
Second year communication   Lab:3
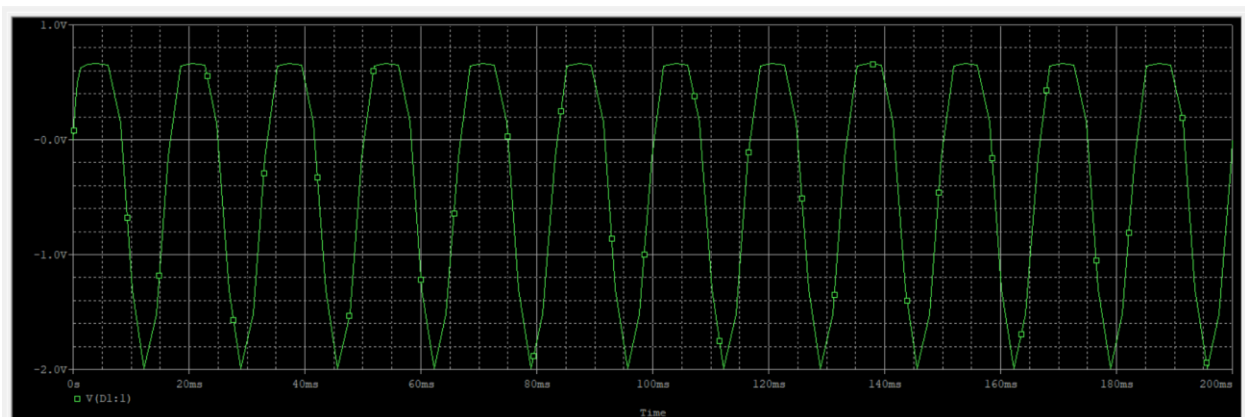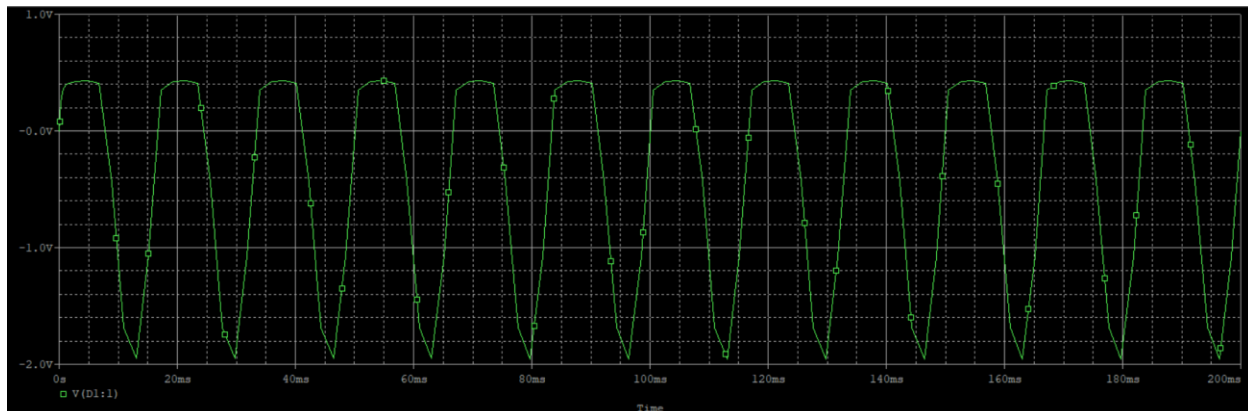
Devices Lab 2:

1-

2-

a-1e-14 N=1

we get this wave with positive output more wide and the amplitude is near to .6 v

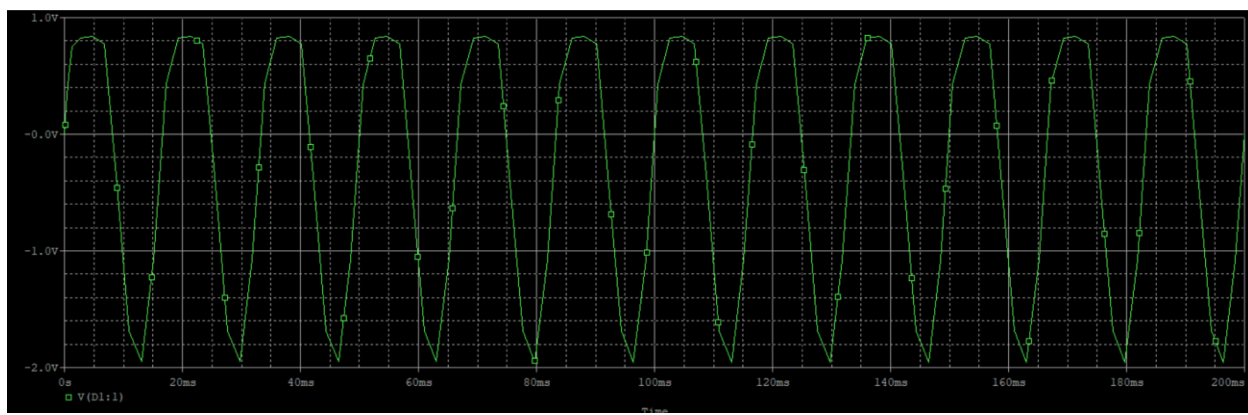the negative direction has an amplitude of -2 v which has no resistivity from the diode to pass through

b-1e-10 N=1
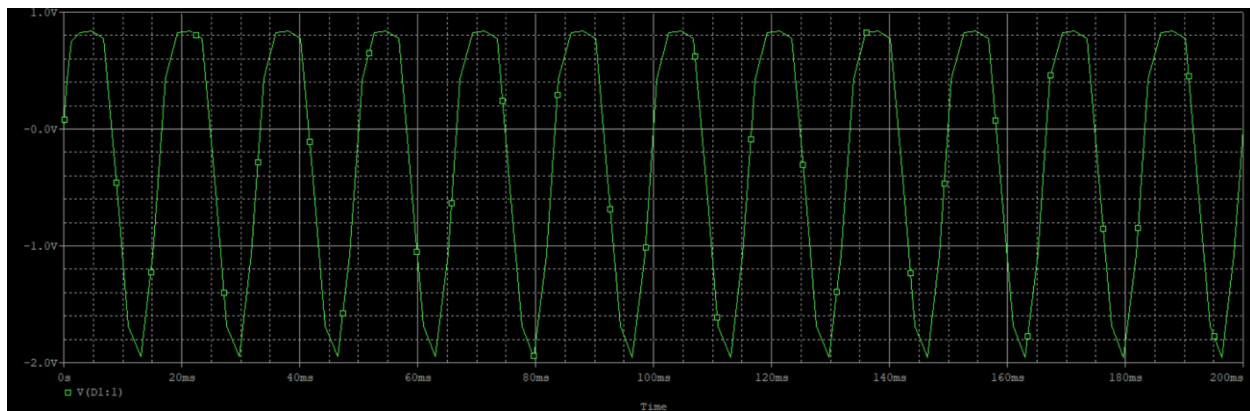
when we change cap the output decreased

c-1e-10 N=2

when we duplicated n parameter it has increased the output again
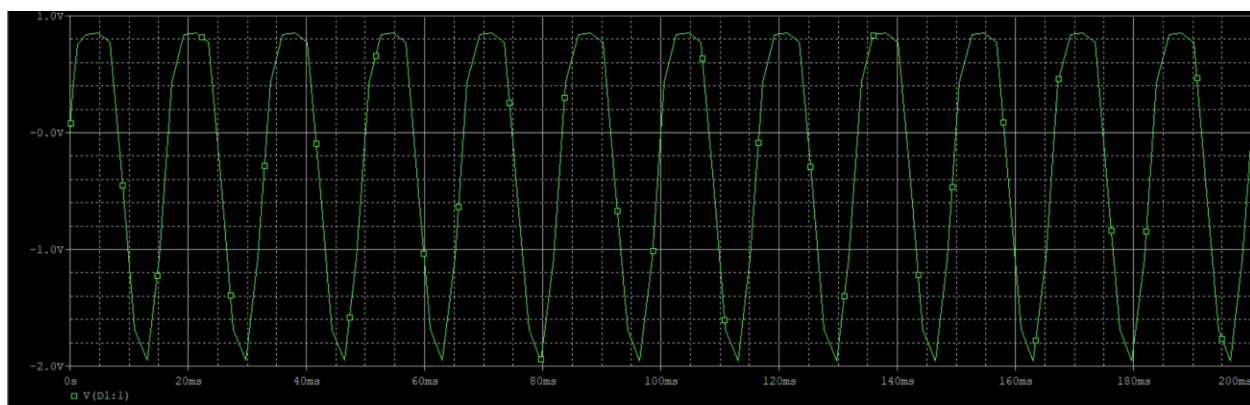in the positive direction

3-

a-Rs=0

when changed the resistor series with the current source of the
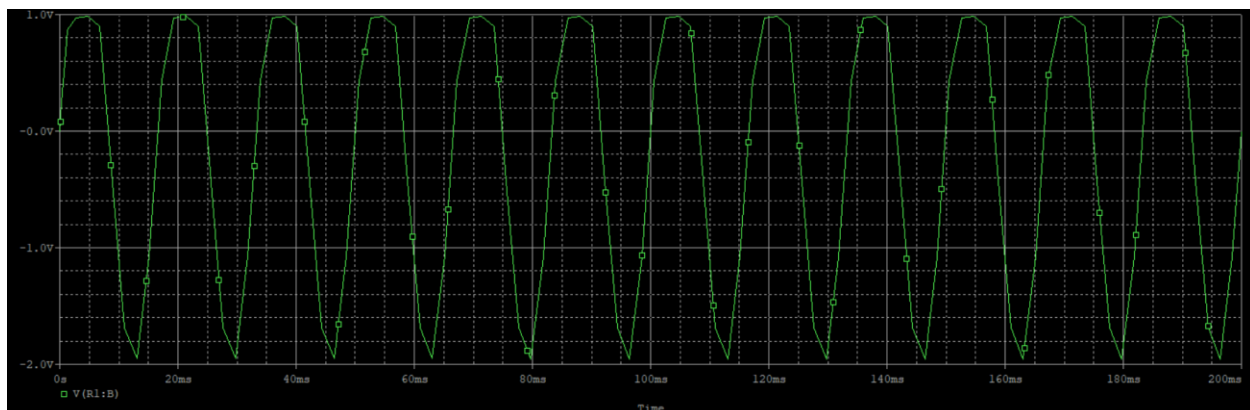internal circuit to 0

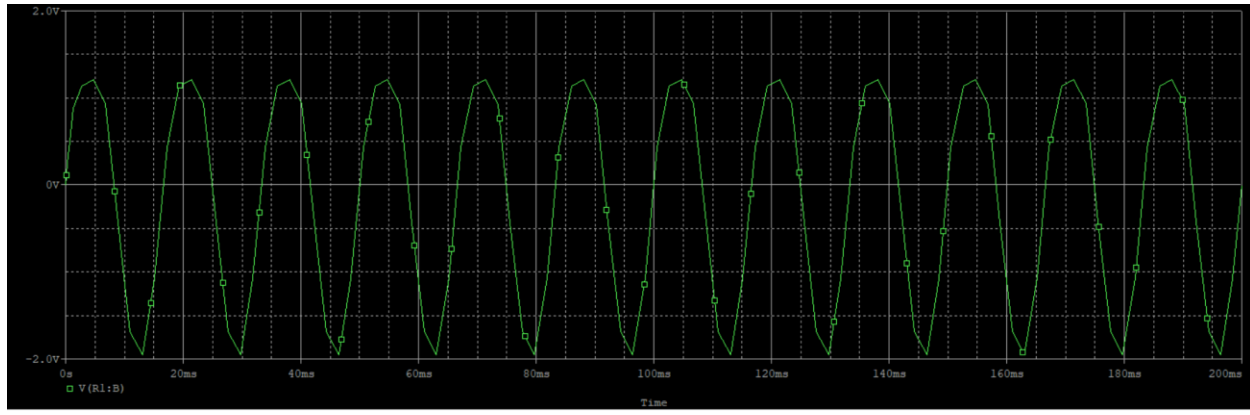b-Rs=16

4-with 50 ohms res.

We change the resistance of whole the circtuit which has an impact to the width of the positive voltage and the value of the amplitude
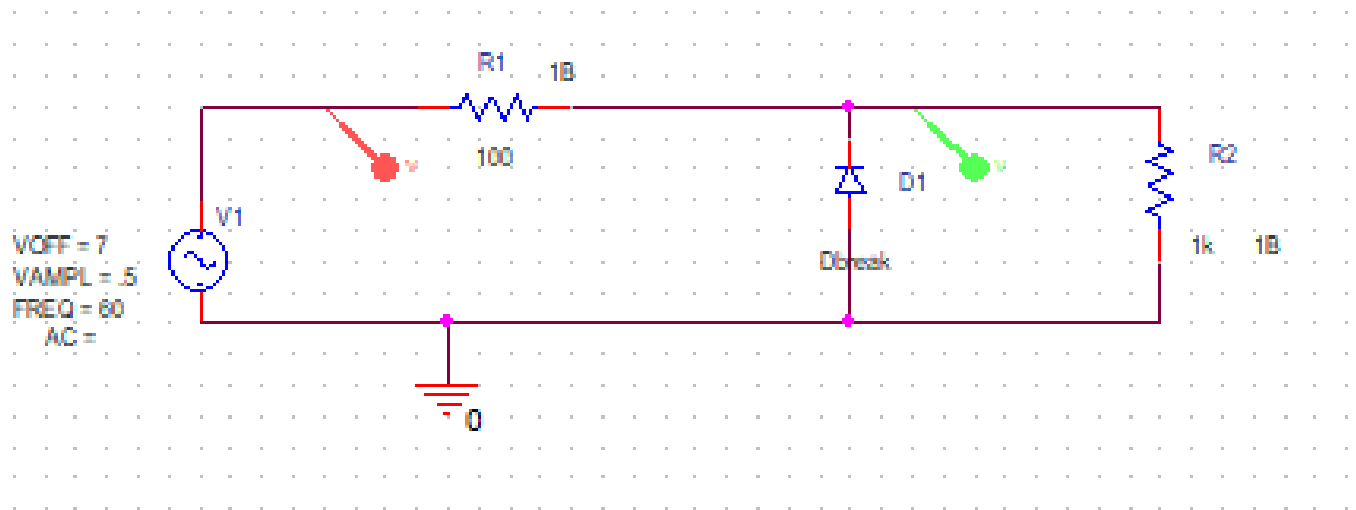
a-rs = 0

b-rs = 16

accodring to the ration between the r of the circuit and the rs internal the change has an bigger impact on the voltage wave plotted
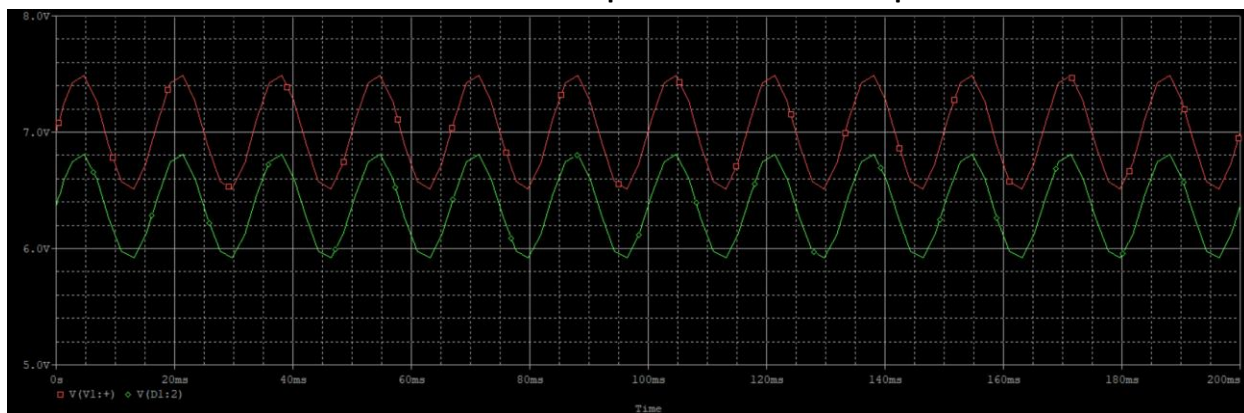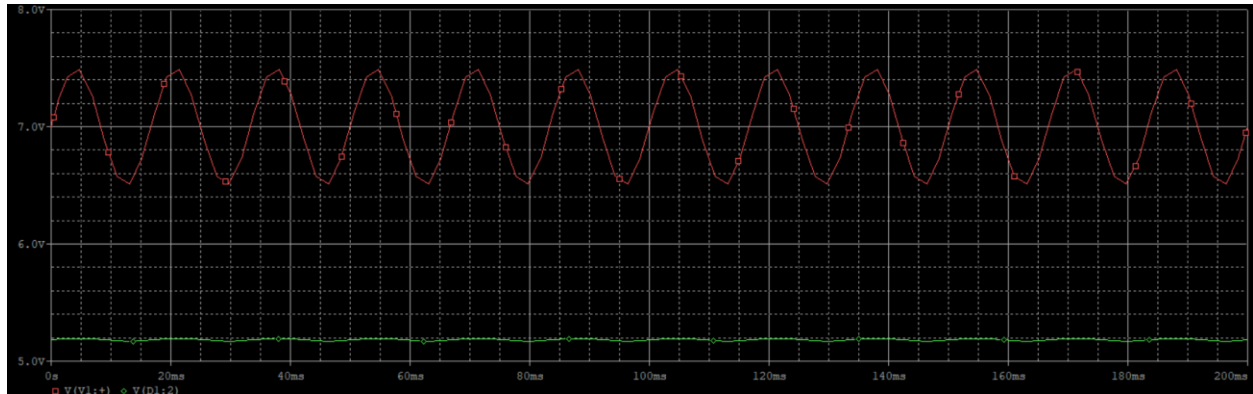

5- second circuit

6-without changing

In this case diode used to make the voltage near to be a constant at the resisitor the same wave in input and the output
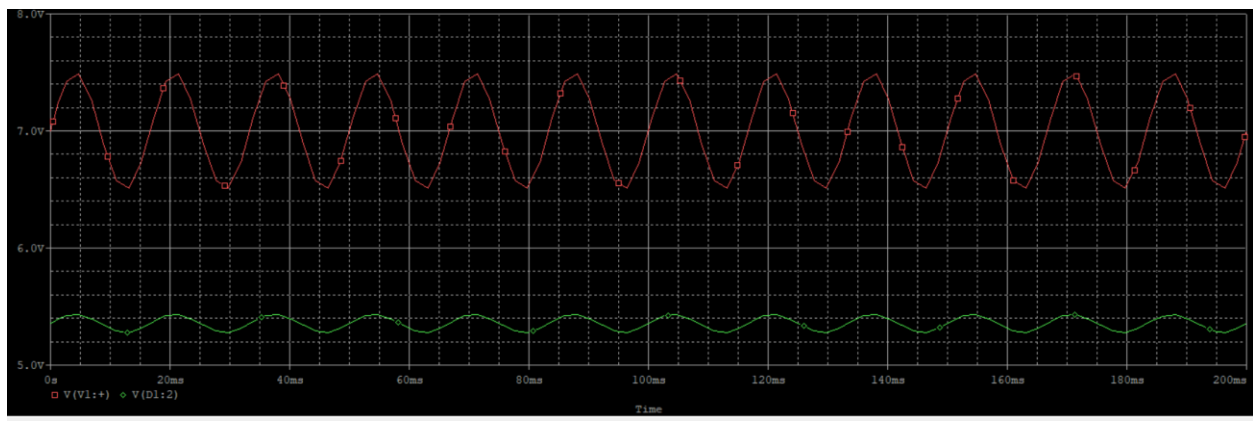

a-BV=4.7 RS=0

when we change the value of the break down voltage we t=get the plot as shown the input in sin wave and the output with same value of the bv put with negative
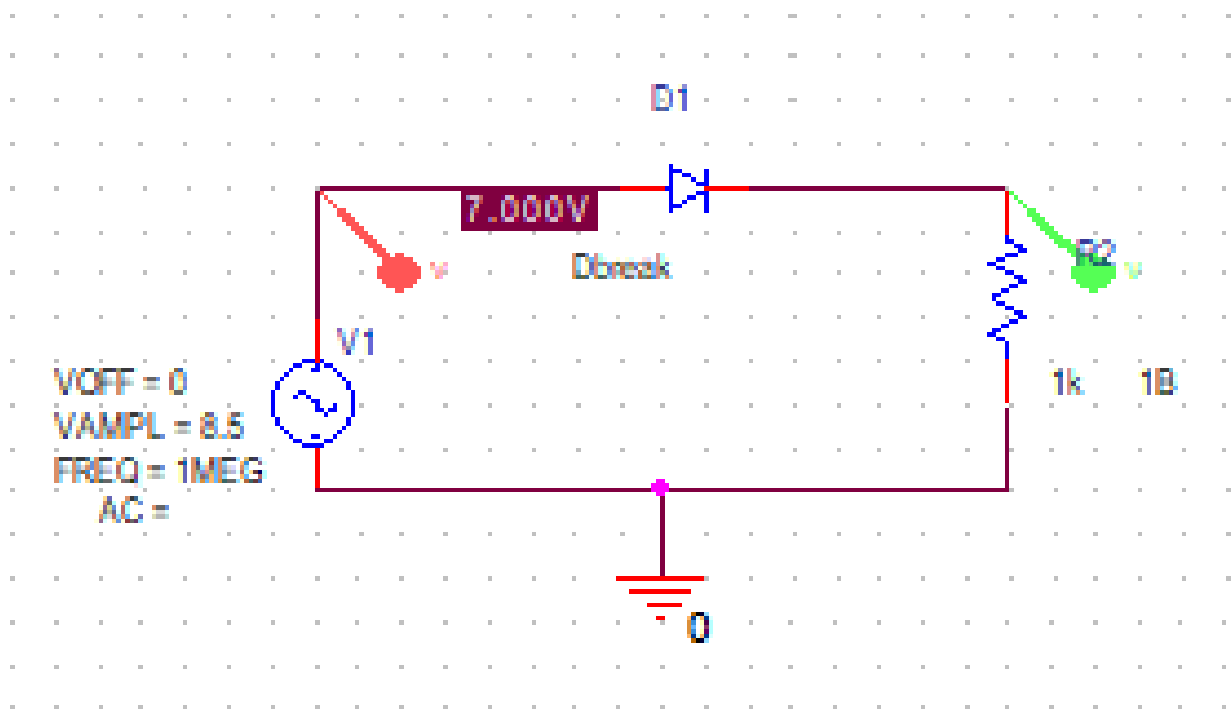

b- BV = 4.7 RS=16

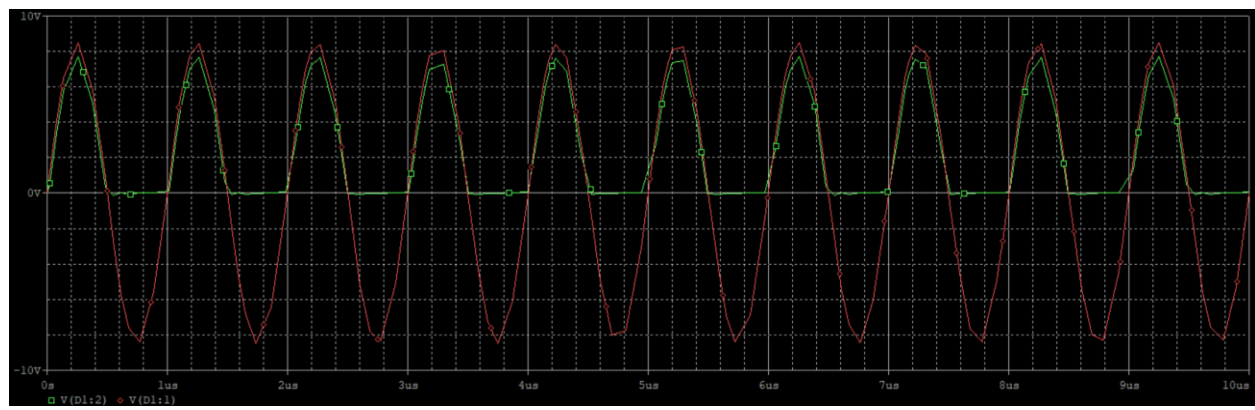when we change the rs internal of the diode it takes some voltage and makes the amplitude of the output wave increases

7-3rd circuit

D1

7.000V

Dbreak

V1

VOFF = 0
VAMPL = 8.5
FREQ = 1MEG
AC =

1k   1B

0

8- M= .5 Vj =.75 Cj=20pf

Amplitude of the input is 8.5 sinewave the out is unidierectional near to the max value of the input amplitude and doesn't lower to the negative values

9-a-TT=0

When we chnge parameters of the diode we get some changes of the vltage on it we get the state of forward low voltage value and for the negative we get a normal output like the input entered but with some attenuation because of the internal barrier voltage and resisitance
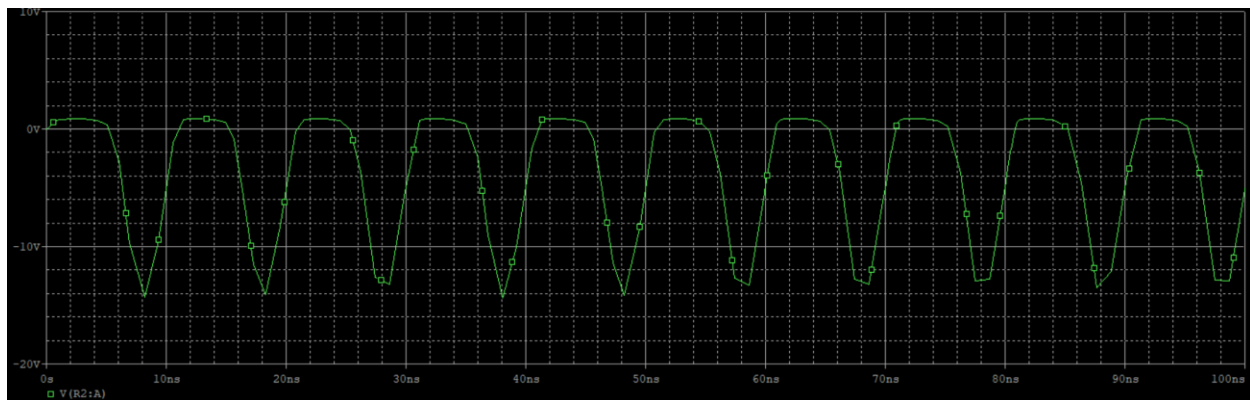
b-TT=12

when we change TT parameter to 12 we get the positive side is increased