

## Expt. No. 6 Simulation of Series Inverter

**Aim :** To perform transient analysis of series inverter

**Components required with references:**

1. DC source (DC)
2. Switch (analogswitch)
3. Resistor (R)  $500\Omega$
4. Pulse source (pulse)
5. Voltmeter (vplot)
6. Ground (gnd)

**Procedure :**

1. Create the schematic of the series inverter as shown in Fig. 6.1.
2. Annotate the schematic.
3. Test Electric rules.
4. Generate the netlist.
5. Insert analysis for transient analysis from 0 to 40 ms with a step time of  $40\ \mu\text{s}$ .
6. Convert KiCad netlist to Ngspice netlist.
7. Simulate the Ngspice netlist using Ngspice simulator.

**Conclusion :** Transient analysis of Series inverter is performed

**FreeEDA schematic of Series Inverter :**

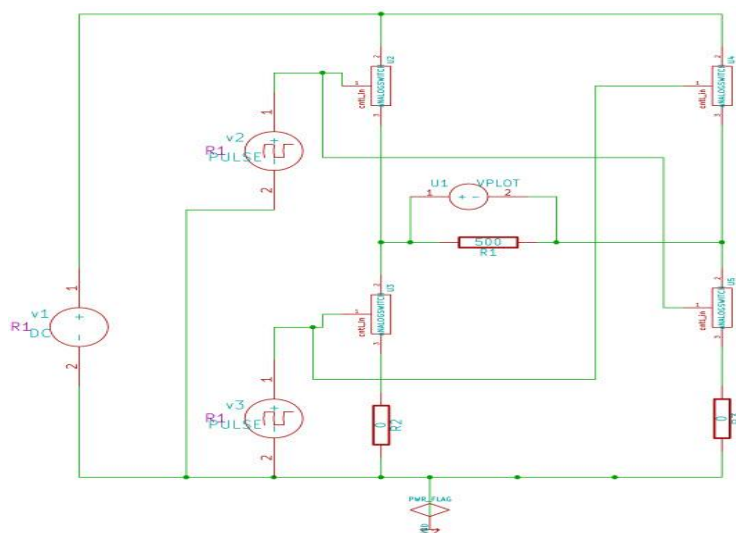


Fig. 6.1 Schematic of series inverter

**Parameters of input:**

**Parameters of DC source : 10**

## Parameters of pulse 1 :

Initial : 0  
Pulsed : 5  
Delay : 0  
Rise time : 0  
Fall time : 0  
Pulse width : 5m  
Pulse period : 10m

## Parameters of pulse 2 :

Initial : 0  
Pulsed : 5  
Delay : 5m  
Rise time : 0  
Fall time : 0  
Pulse width : 5m  
Pulse period : 10m

## Parameters of analogswitch :

On voltage : 1  
Off voltage : 0.01  
On resistance : 0.0125  
Off resistance : 1M

## Simulation Results :

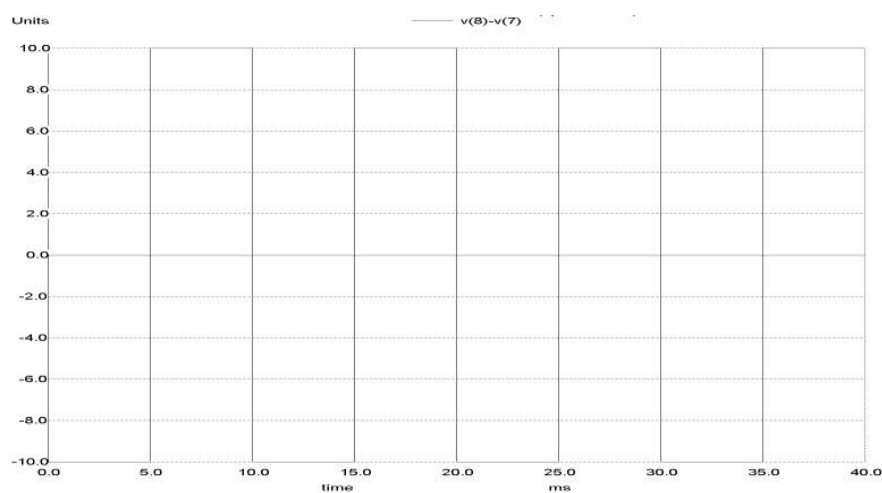


Fig. 6.2 Load voltage