TITLE

DC Voltage Regulator using zener diode.

THEORY

A voltage regulator is an electronic circuit that provides a stable DC voltage independent of the load current, temperature and input DC voltage variations. It has a very wide application range and it can be used to control the speed of a motor, the brightness of a LED or lamp, etc. Practically, it can be used in any application that uses a regulated DC supply.

STIMULATION CIRCUIT

The circuit schematic of the DC Voltage Regulator in eSim is as shown below:

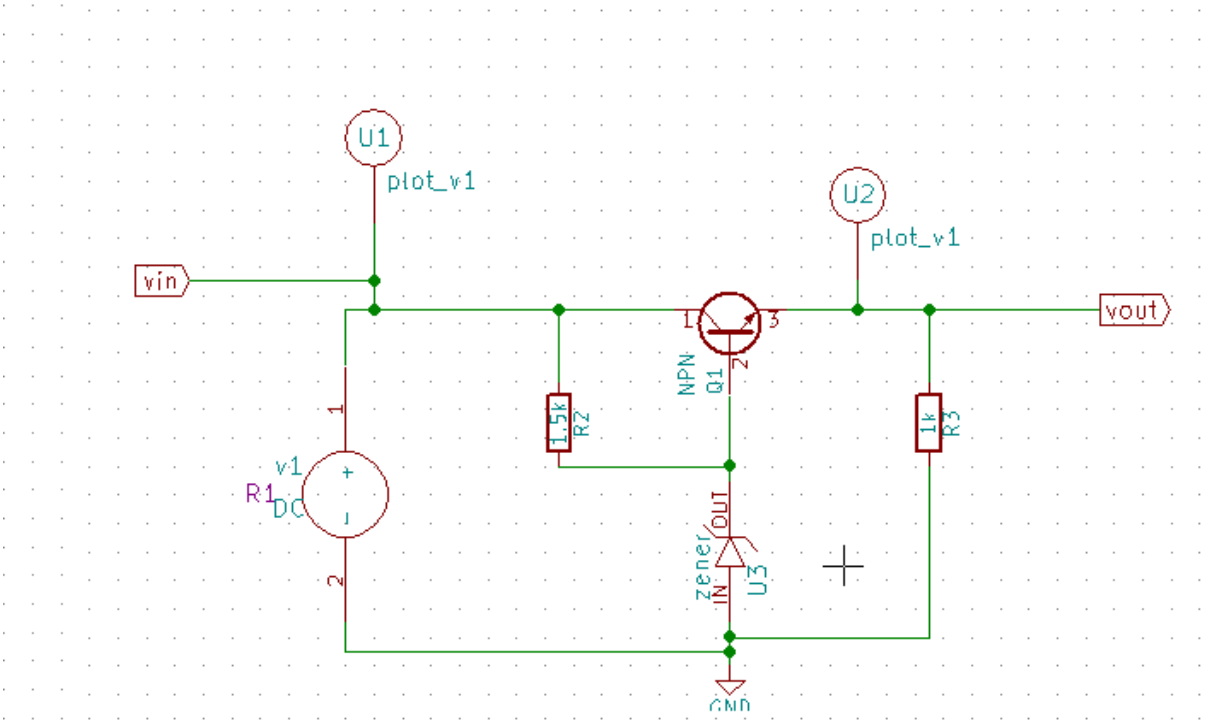

Figure: 1 Series Voltage Regulator

SIMULATION RESULTS:

1. Ngspice Plots:

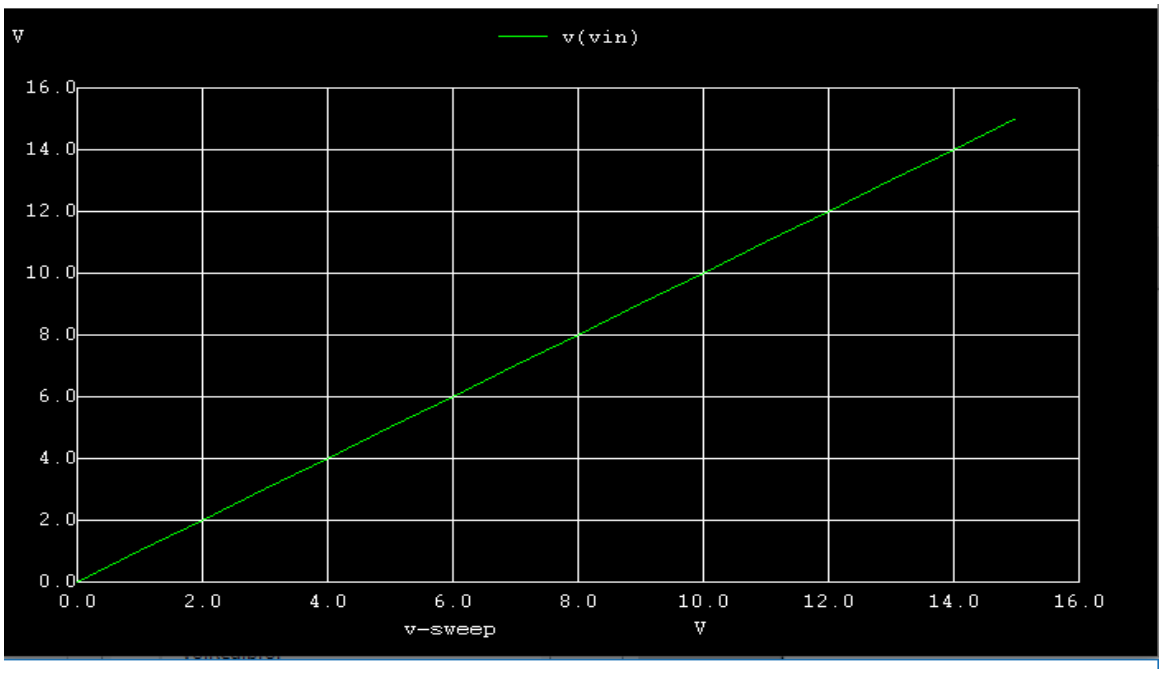

Figure: 2 Ngspice Input Plot

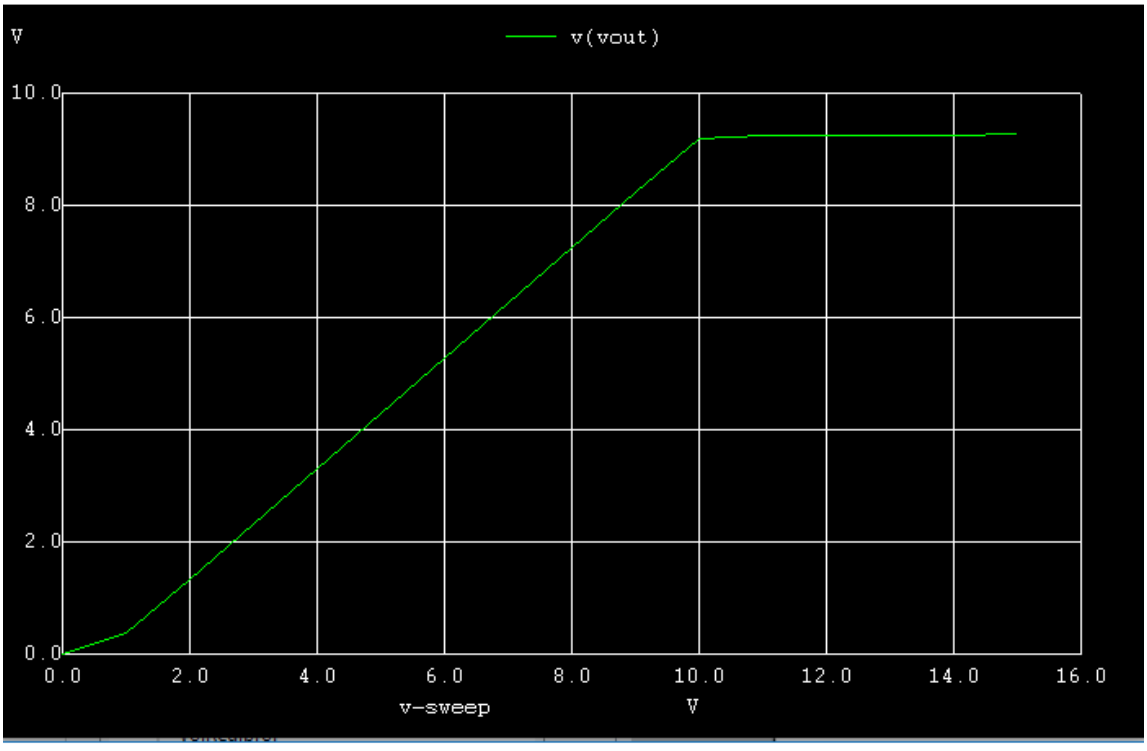

Figure: 3 Ngspice Output Plot

2. Python plot:

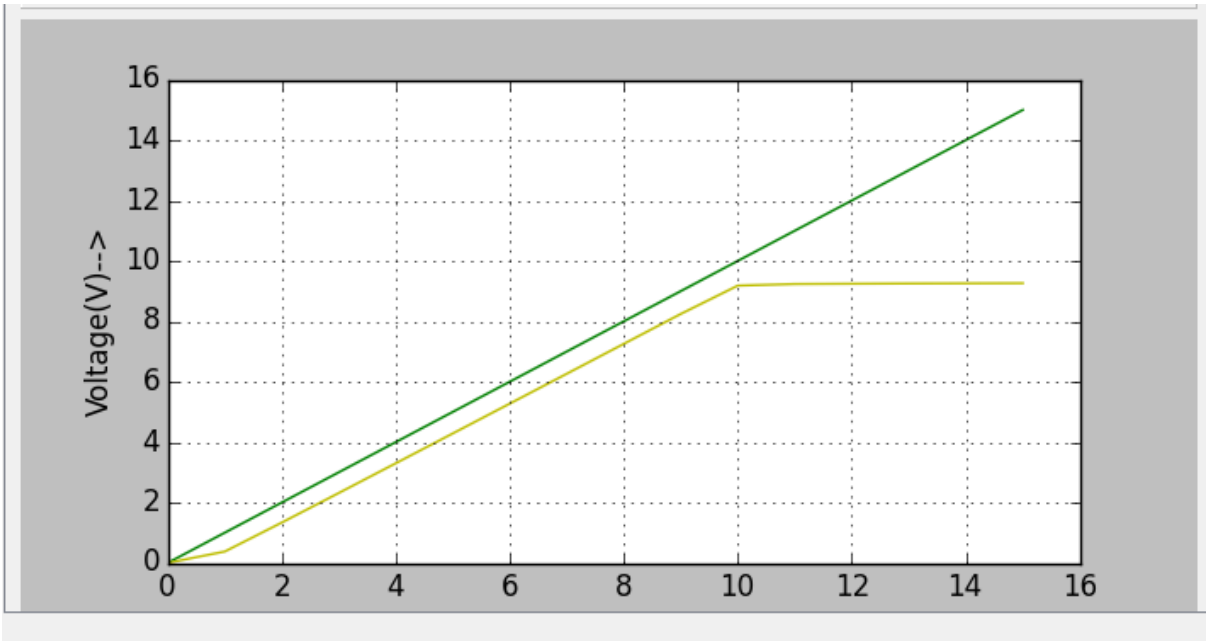

Figure: 4 Python Plot of DC Voltage Regulator

CONCLUSION:

Thus, we have studied the DC Voltage Regulator using eSim and we get the appropriate waveforms.

REFERENCE:

1. https://electronicspost.com/transistor-series-voltage-regulator/
2. http://www.visionics.a.se/html/curriculum/Experiments/Voltage%20Regulator/Series%20Voltage%20Regulator1.html

TEAM MEMBERS:

1. GOWTHAM C 2. SATHISH KUMAR M 3. SETHURAM S

UG Scholars at Dr. Mahalingam College of Engineering & Technology (Autonomous) , Pollachi-642 003.