SIMPLE WHITE NOISE GENERATOR

THEORY:

Transistor BC108 is getting the bias current through the 10V Zener diode which is placed in reverse bias with the transistor base. The 10V Zener diode is acting as a Noise source. Other two resistors are connected for current control. The 4.7uf Capacitor is working as a filter capacitor. The circuit needs fairly high voltage to provide noise at the output. We provided 26V as the input voltage of the circuit.

SCHEMATIC DIAGRAM:

The circuit schematic of simple white noise generator in eSim is as shown below:

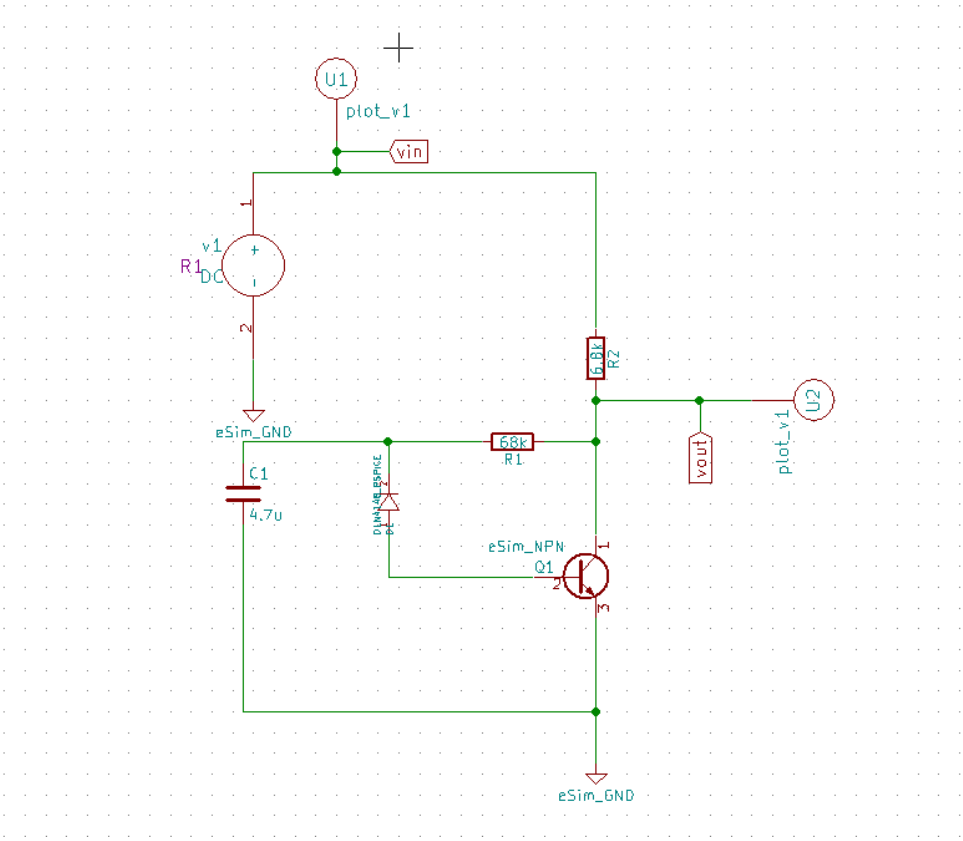

Fig 1:Simple white noise generator

SIMULATION RESULTS:

1. PYTHON PLOTS:

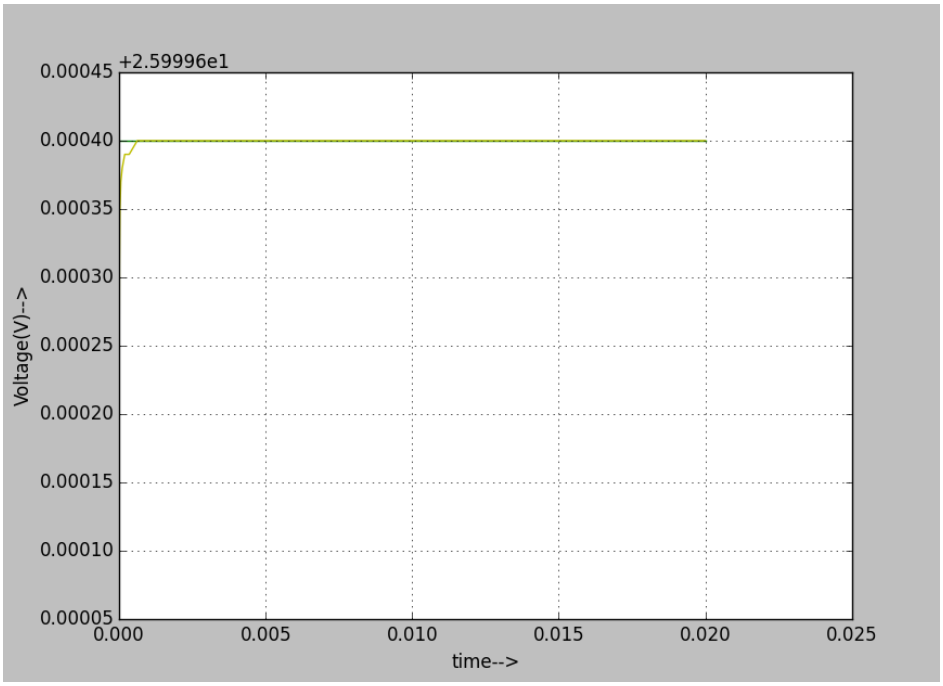

Fig 2: Python plot input and output

VIN : GREEN

VOUT : YELLOW

2. NGSPICE PLOTS:

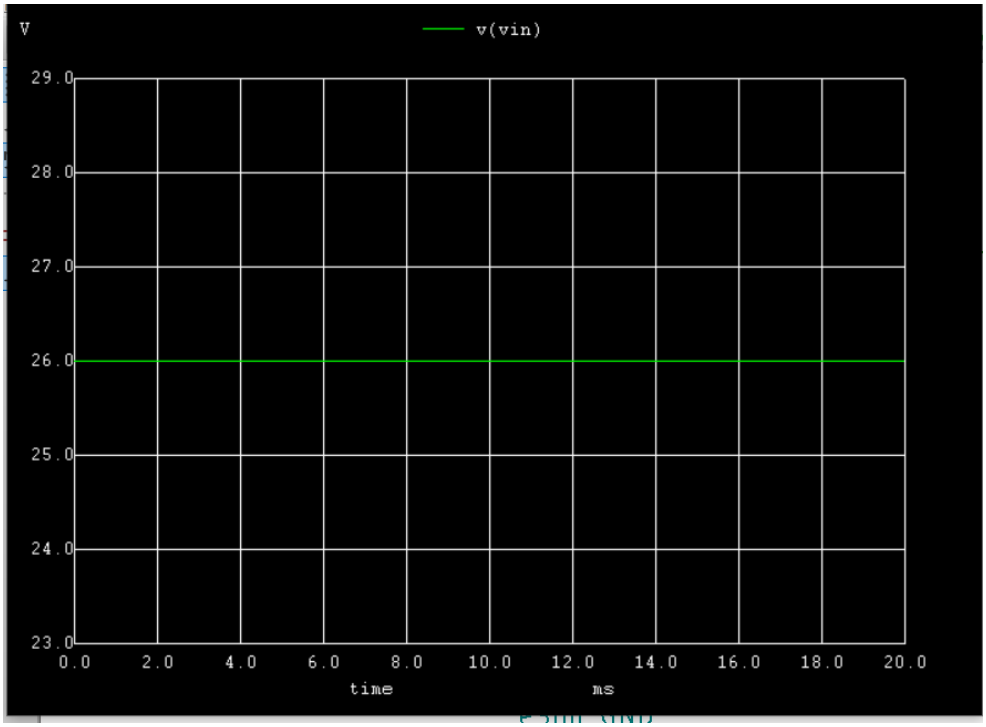

Fig 3: Ngspice plot input.

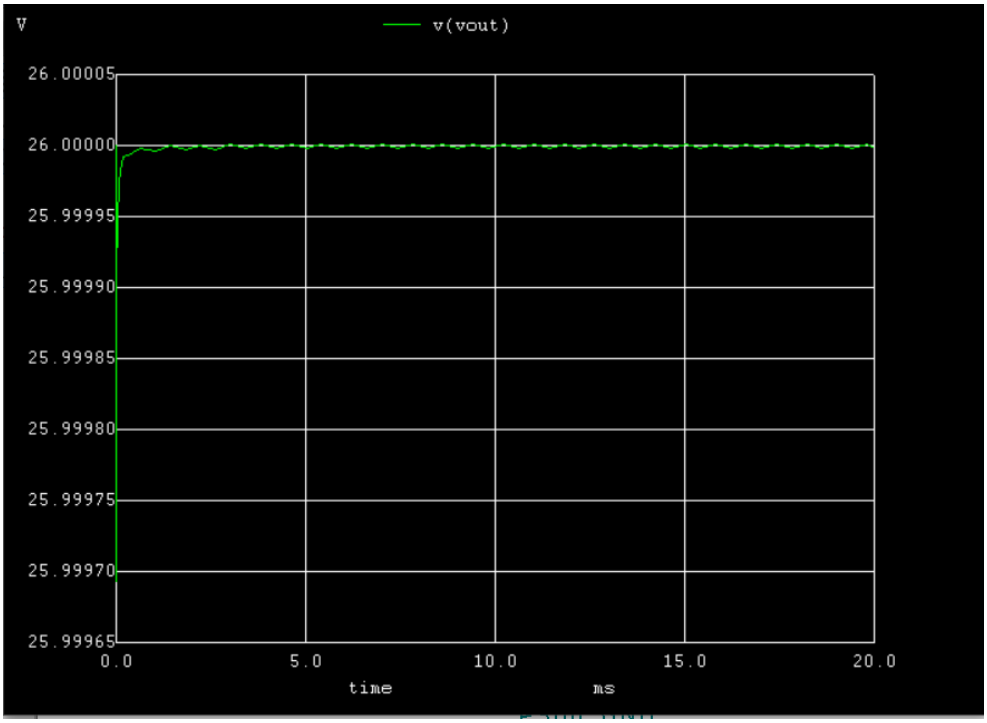

Fig 4: Ngspice plot output.

REFERENCES: https://circuitdigest.com/electronic-circuits/simple-white-noise-generator-circuit-diagram