

# CURRENT SERIES FEEDBACK AMPLIFIER

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## Description:

Current series feedback amplifier is also called as series fed amplifier or transconductance amplifier. In this circuit, current sampling and series mixers are used. When the part of the output current is sampled and given to the feedback circuit, where the fraction of current is converted into a proportional voltage and then given as input signal. By this technique, the input resistance and bandwidth increase but the output gain decrease.

## Schematic diagram:

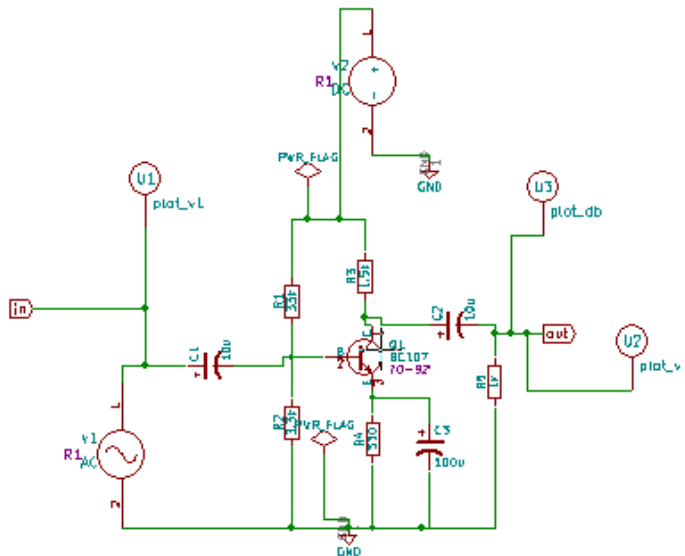


Figure1: Schematic diagram of current series feedback amplifier

## Python plot:

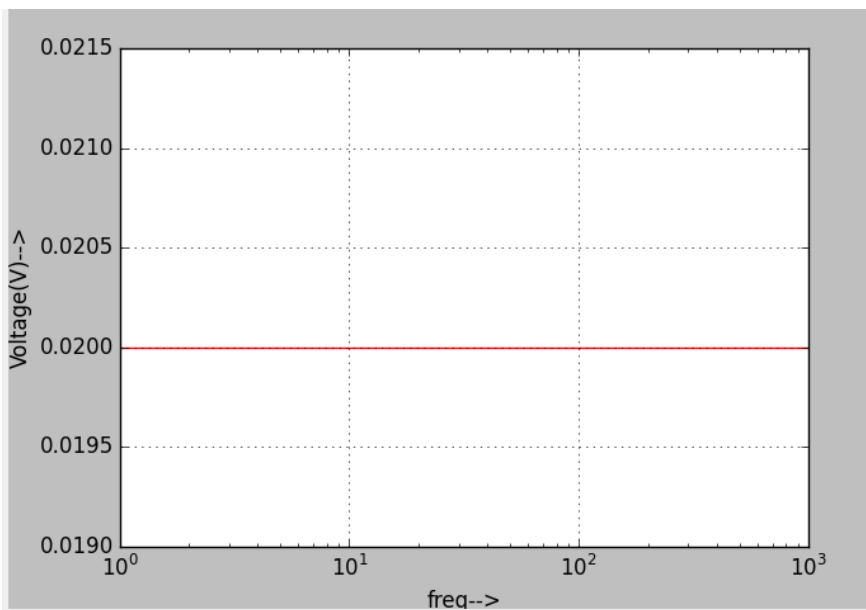


Figure 2: Python input plot

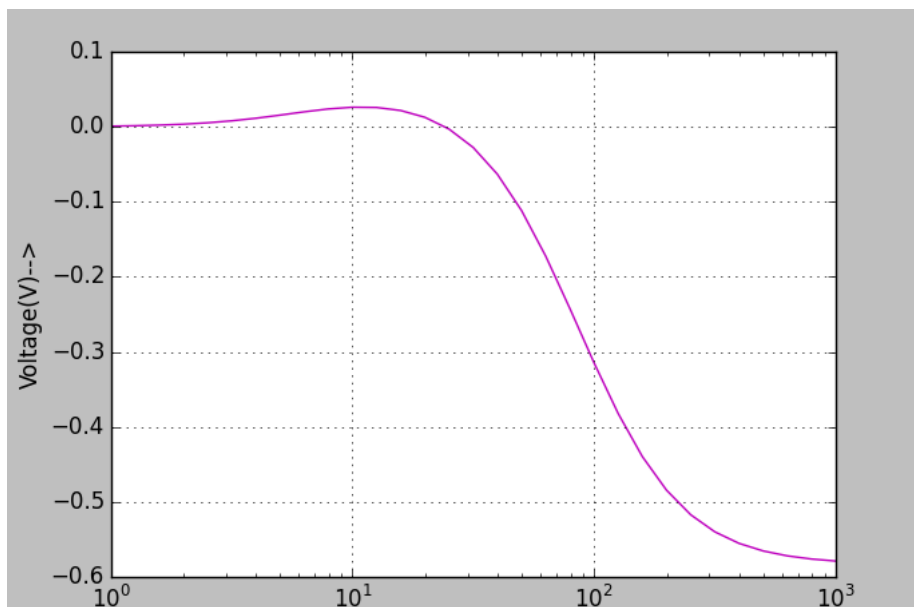


Figure 3: Python output plot

## Ngspice plot:

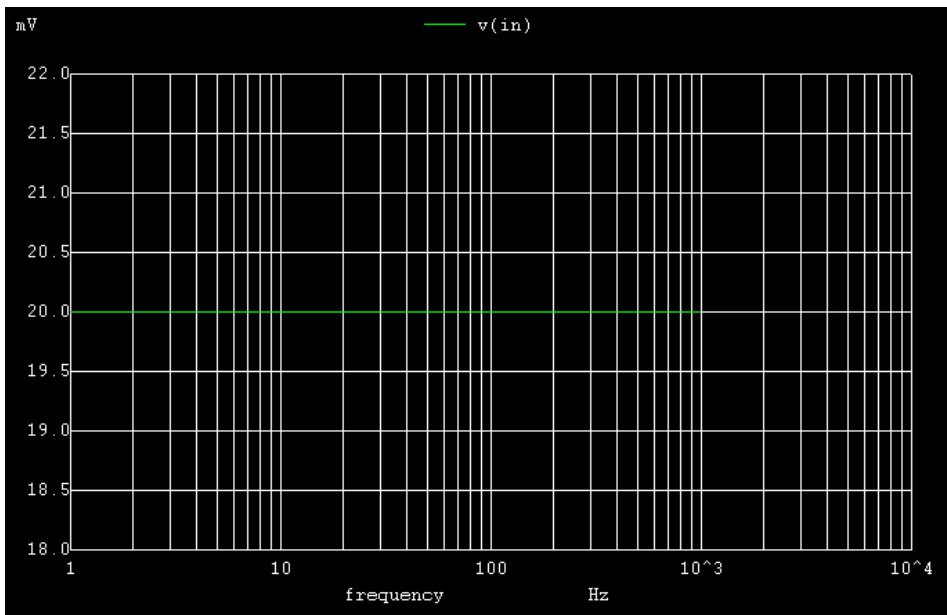


Figure 4: Ngspice input plot

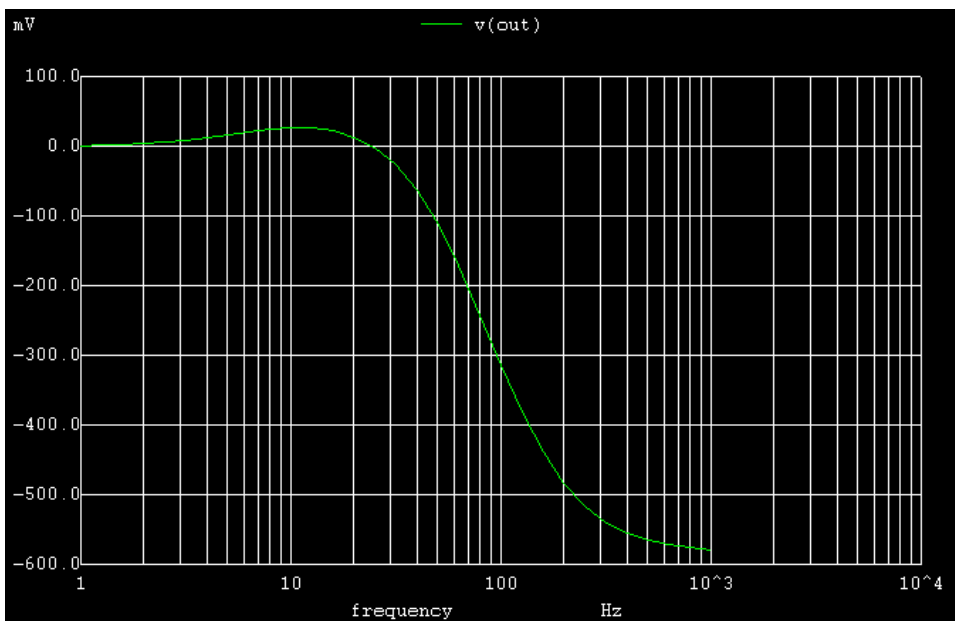


Figure 5: Ngspice output plot

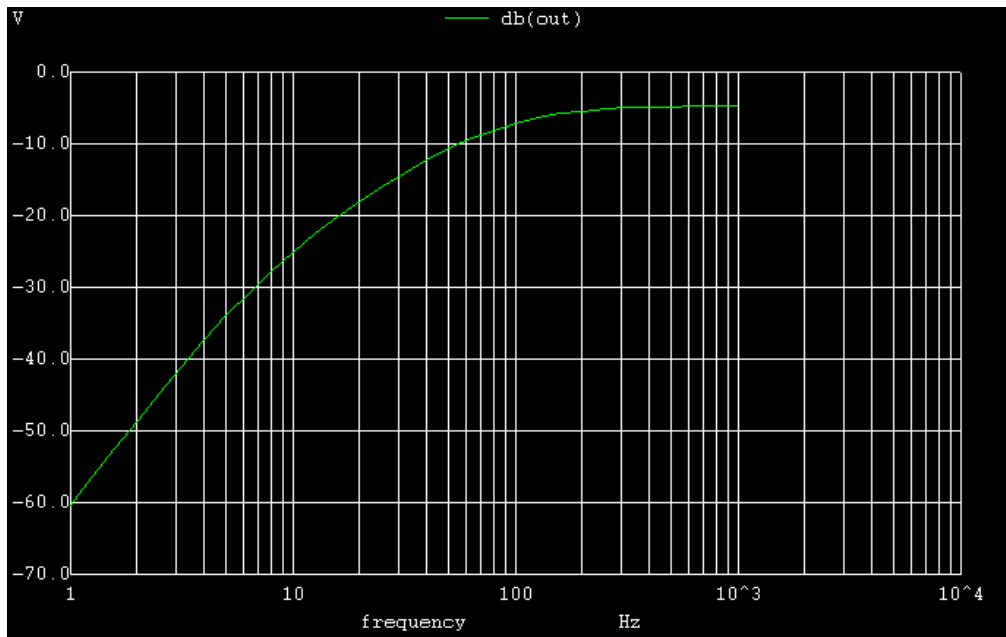


Figure 6: Ngspice output plot1

### Result:

Thus, the current series feedback amplifier was designed and implemented using eSim software and I got the appropriate input and output waveform.

### Reference:

<https://unacademy.com/lesson/current-series-feedback/3K3T9G78>