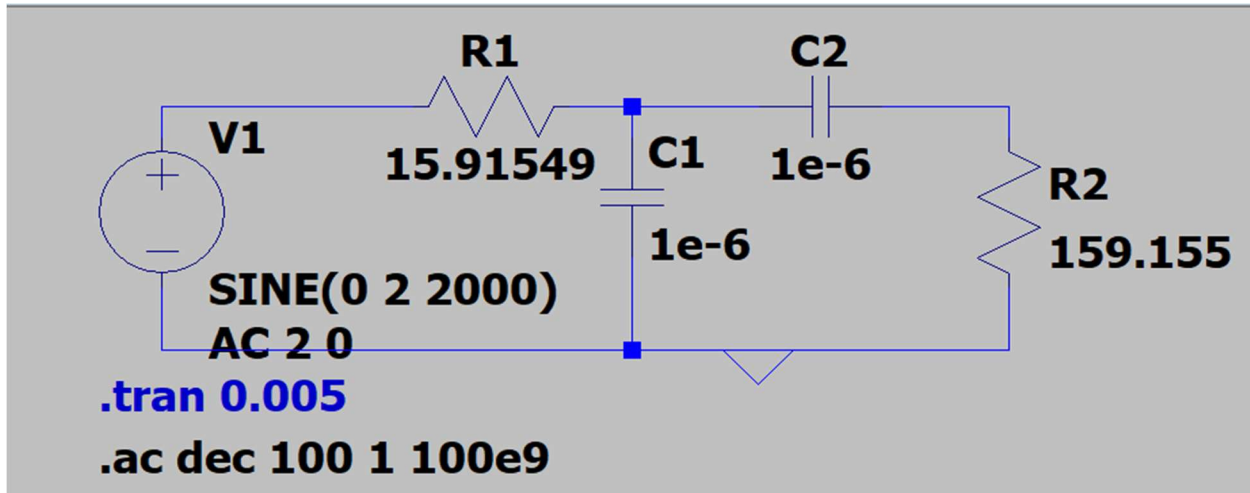


Bandpass filter:

A band-pass filter is a frequency-selective circuit that allows signals within a specific range of frequencies to pass while attenuating signals below and above this range. It can be made by cascading an high pass filter of lower frequency and a low pass filter of high frequency. The output signal is much smaller than input signal due to voltage division.



f_L = lower cutoff frequency (Hz)

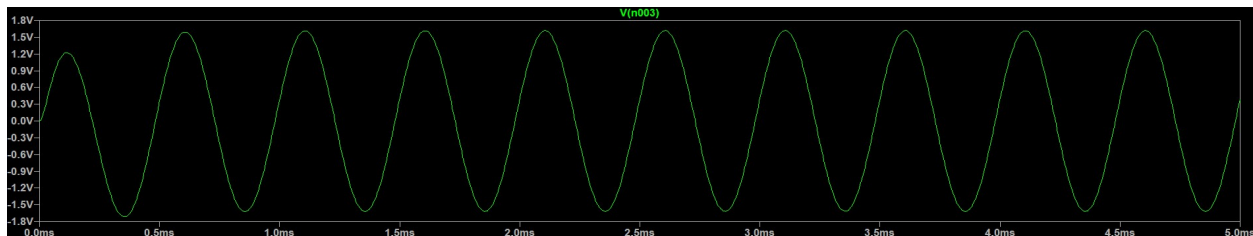
f_H = upper cutoff frequency (Hz)

$$f_l = \frac{1}{2\pi RC} = \frac{1}{2\pi \times 159.155 \times 10^{-6}} = 1kHz$$

$$f_h = \frac{1}{2\pi RC} = \frac{1}{2\pi \times 15.9155 \times 10^{-6}} = 10kHz$$

The filter allows signals of 1kHz to 10kHz to pass with much attenuation.

Simulation Waveform:



Bode plot:

