



## Filter Wizard

Created by Richard Tobias on 4/20/2017



# Filter Wizard Design Report

Filter Requirements for Low-Pass, 3rd order Chebyshev 1.09 dB

Specifications: Optimize for Specific Components, +Vs= 9, -Vs= 0

Gain: 0 dB

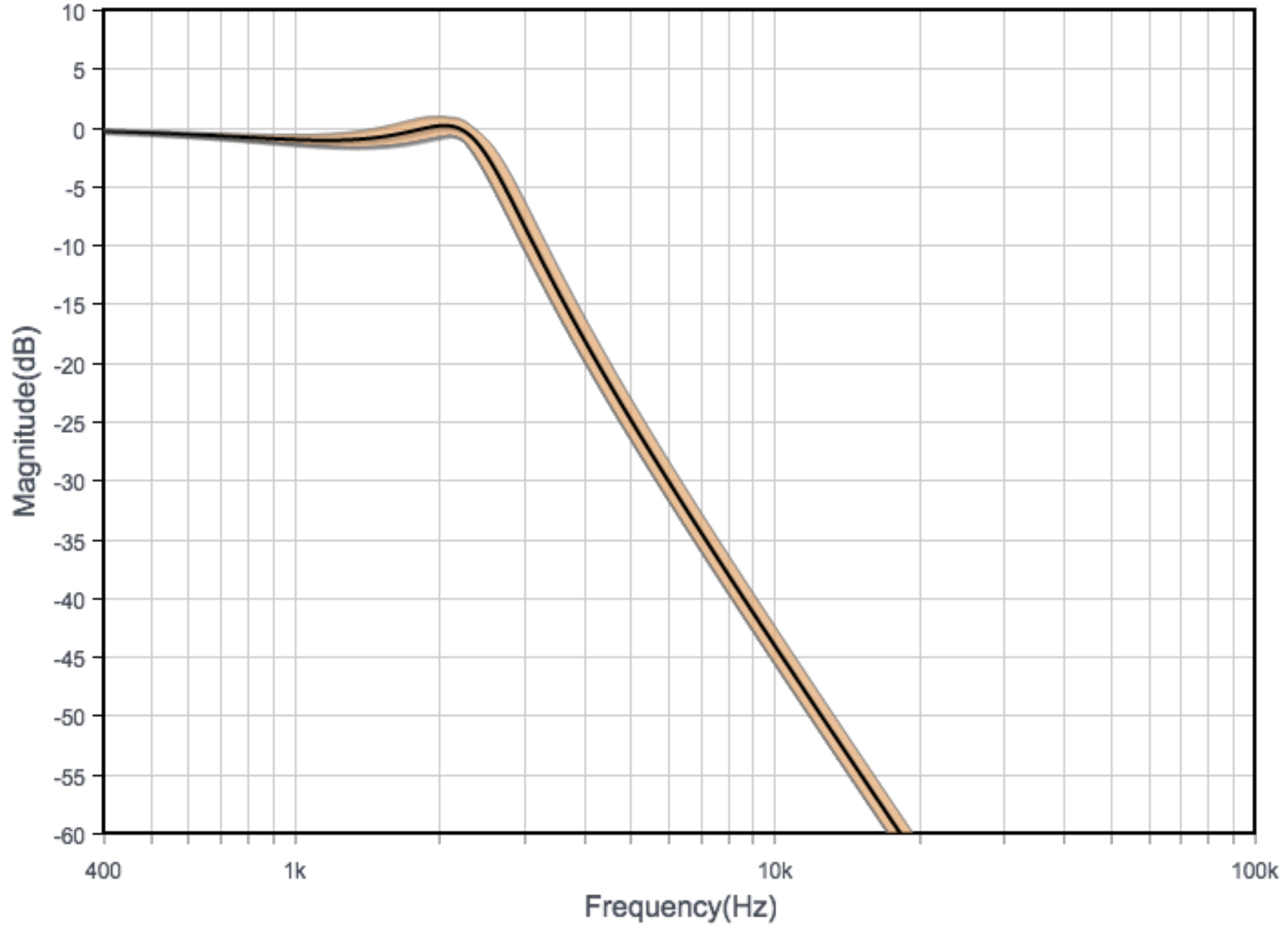
Passband: -18dB at 4kHz

Stopband: -40dB at 10kHz

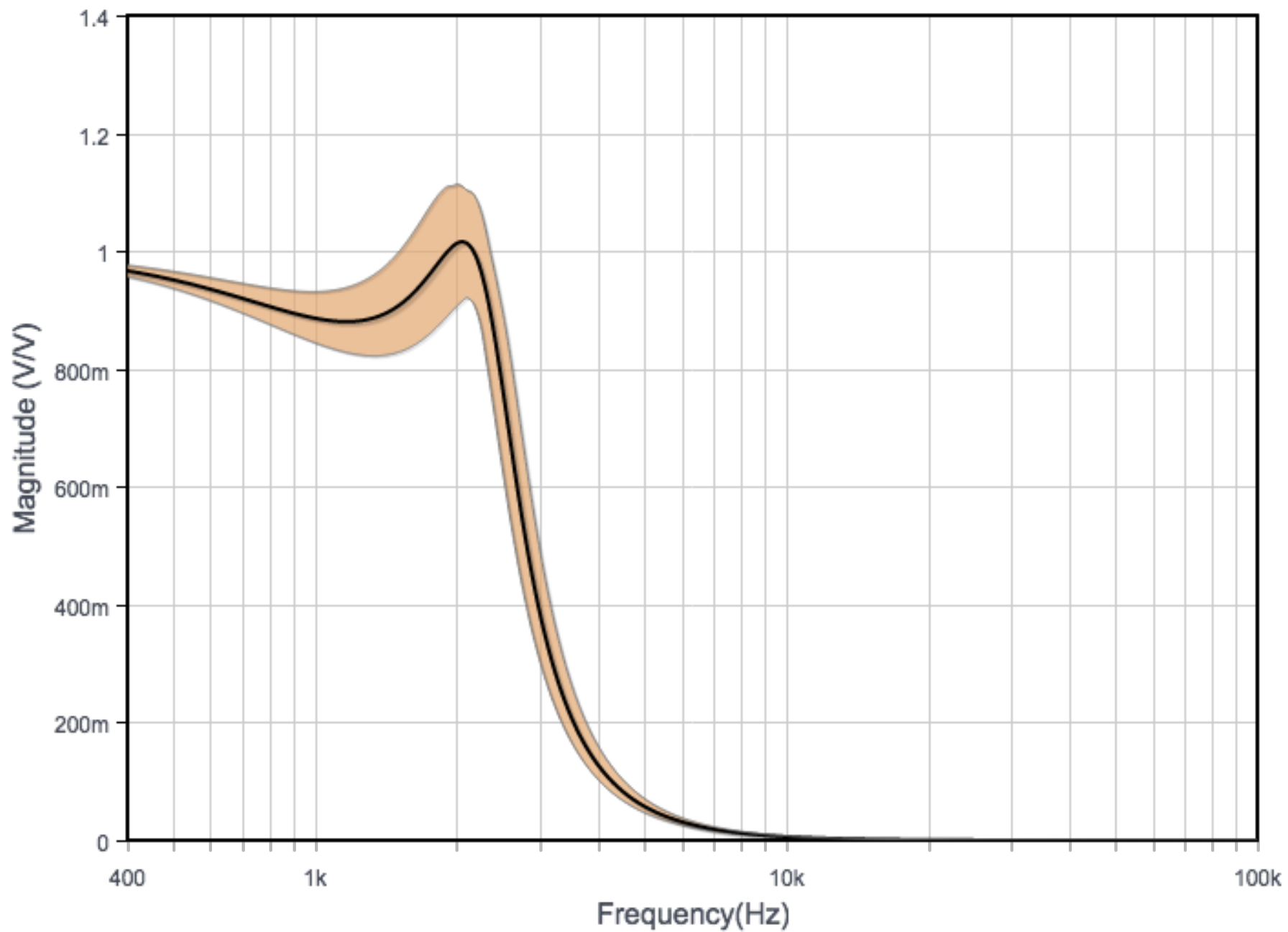
Component Tolerances: Capacitor = 5%; Resistor = 1%; Inductor = 5%; Op Amp GBW = 20%

BOM: refer to BOM.csv file

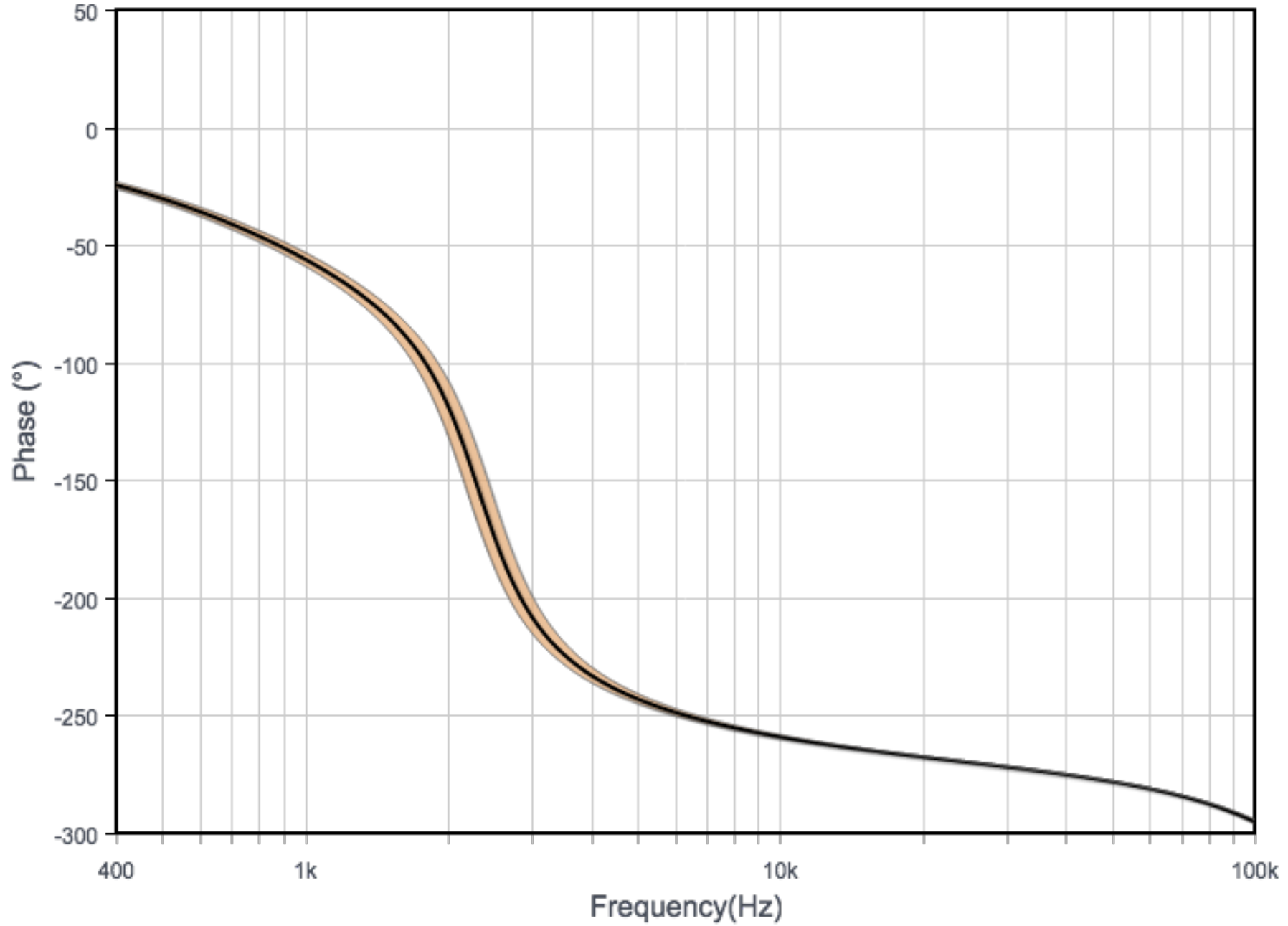
Magnitude(dB)



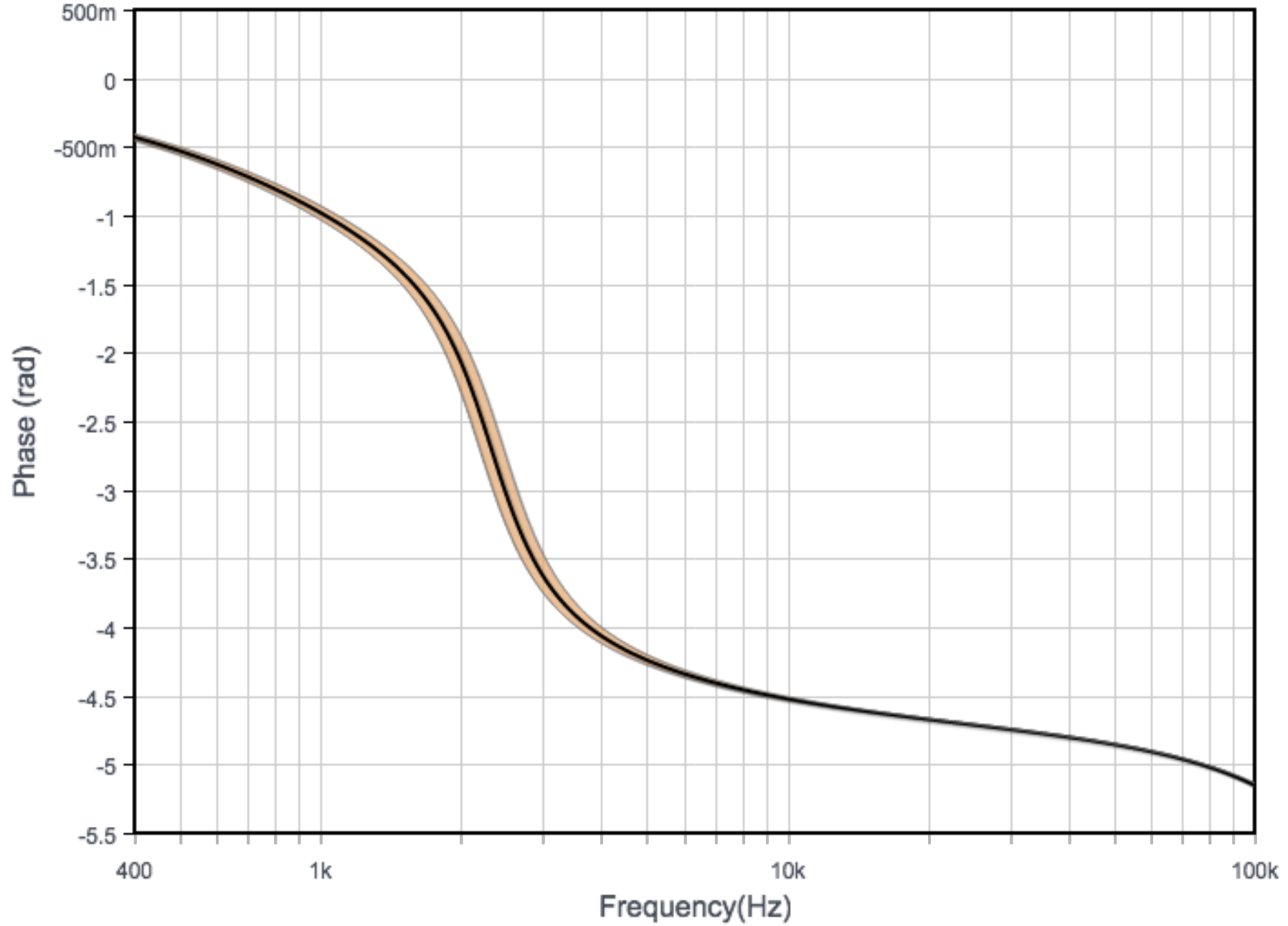
Magnitude(Volts per Volt)



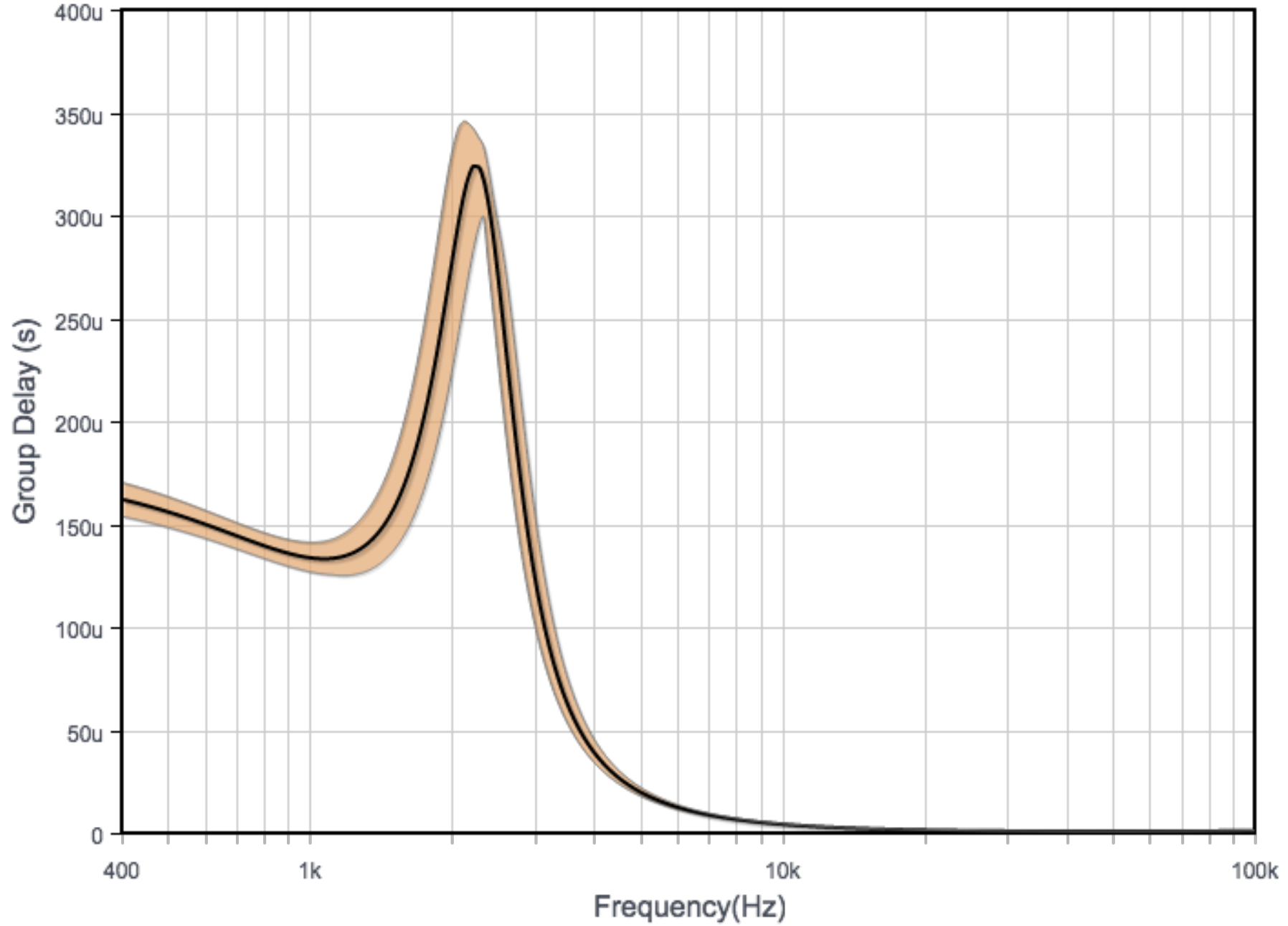
Phase(degrees)



Phase(radians)

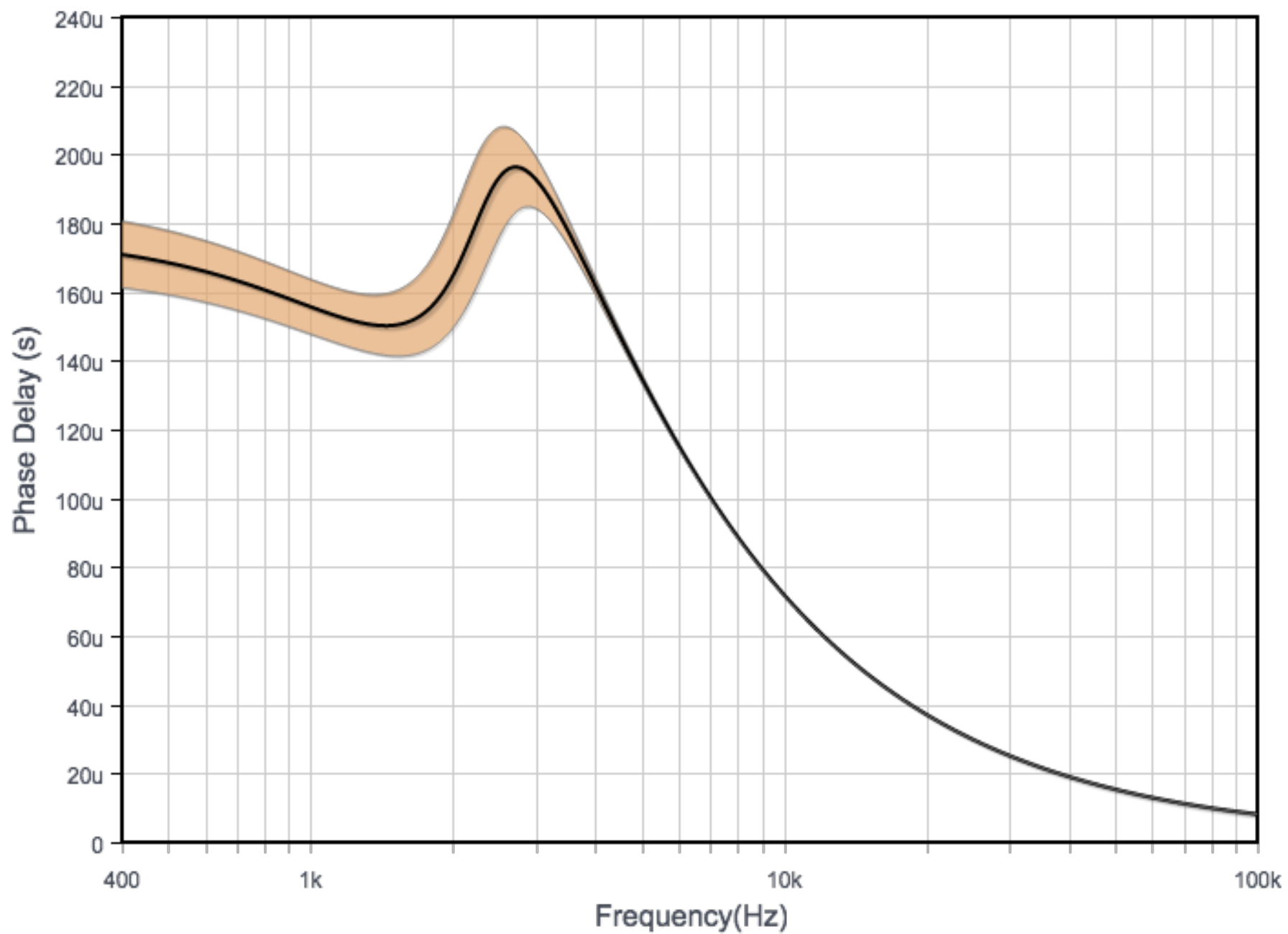


Group Delay



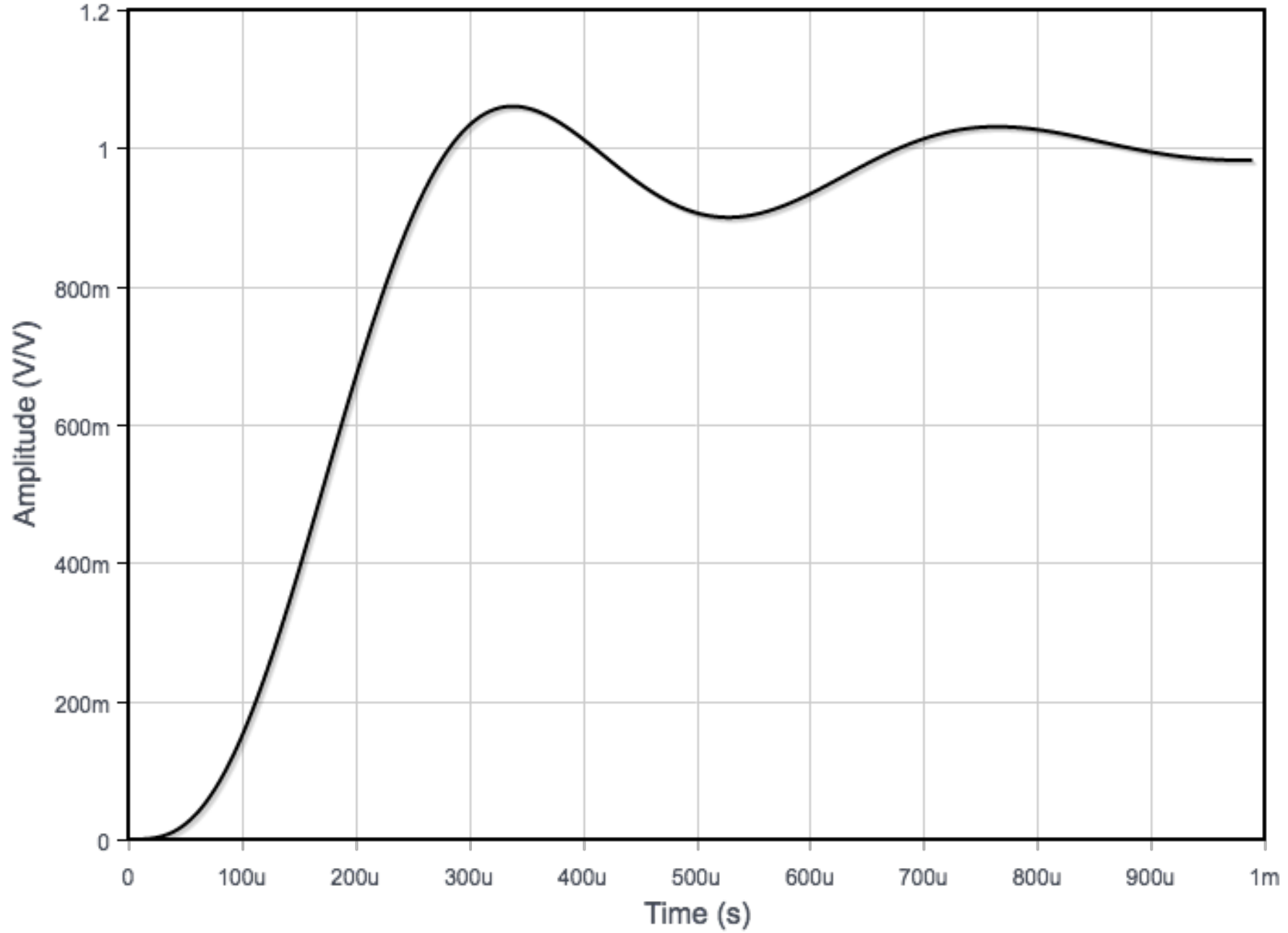


Phase Delay

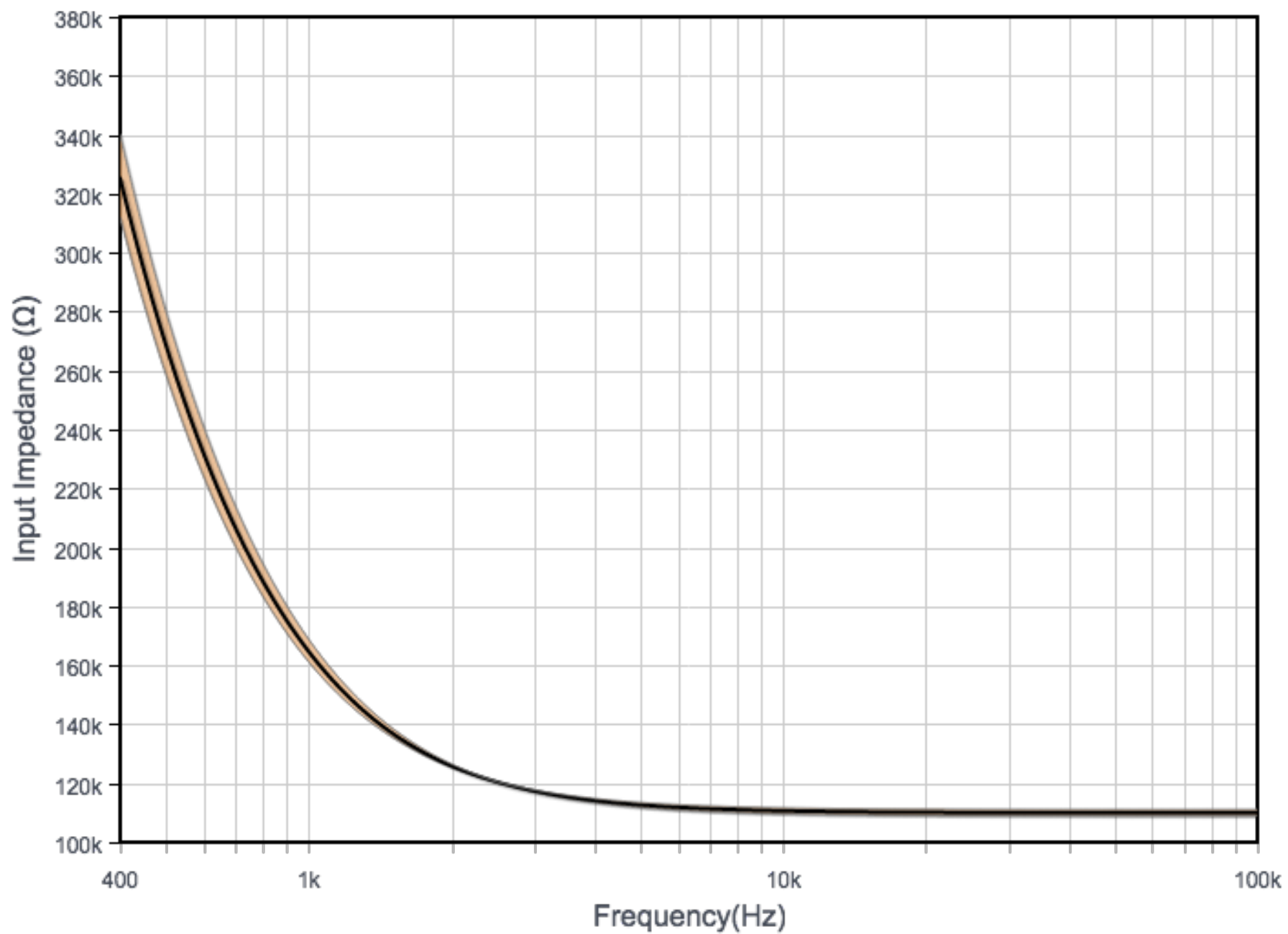




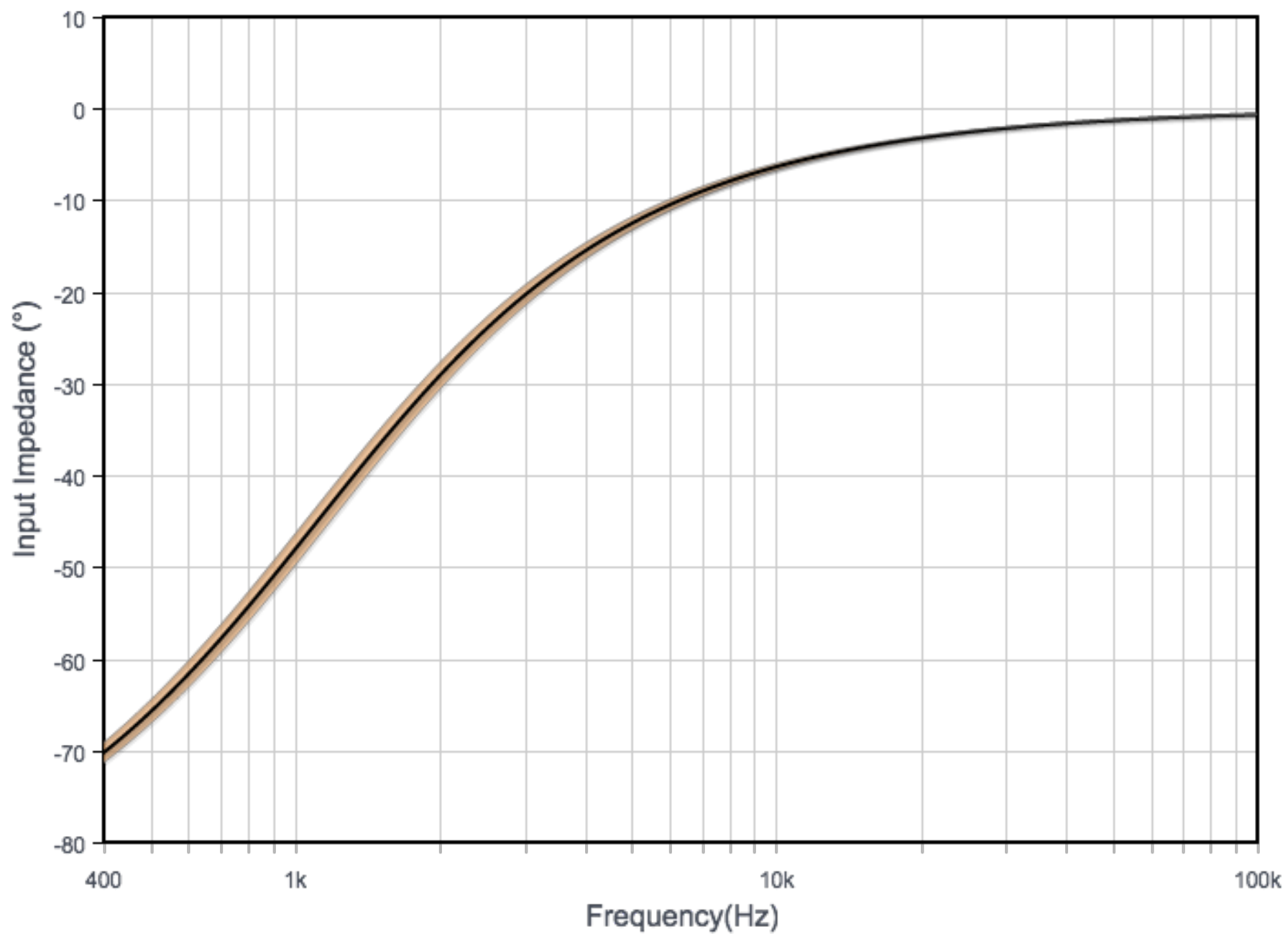
## Step Response



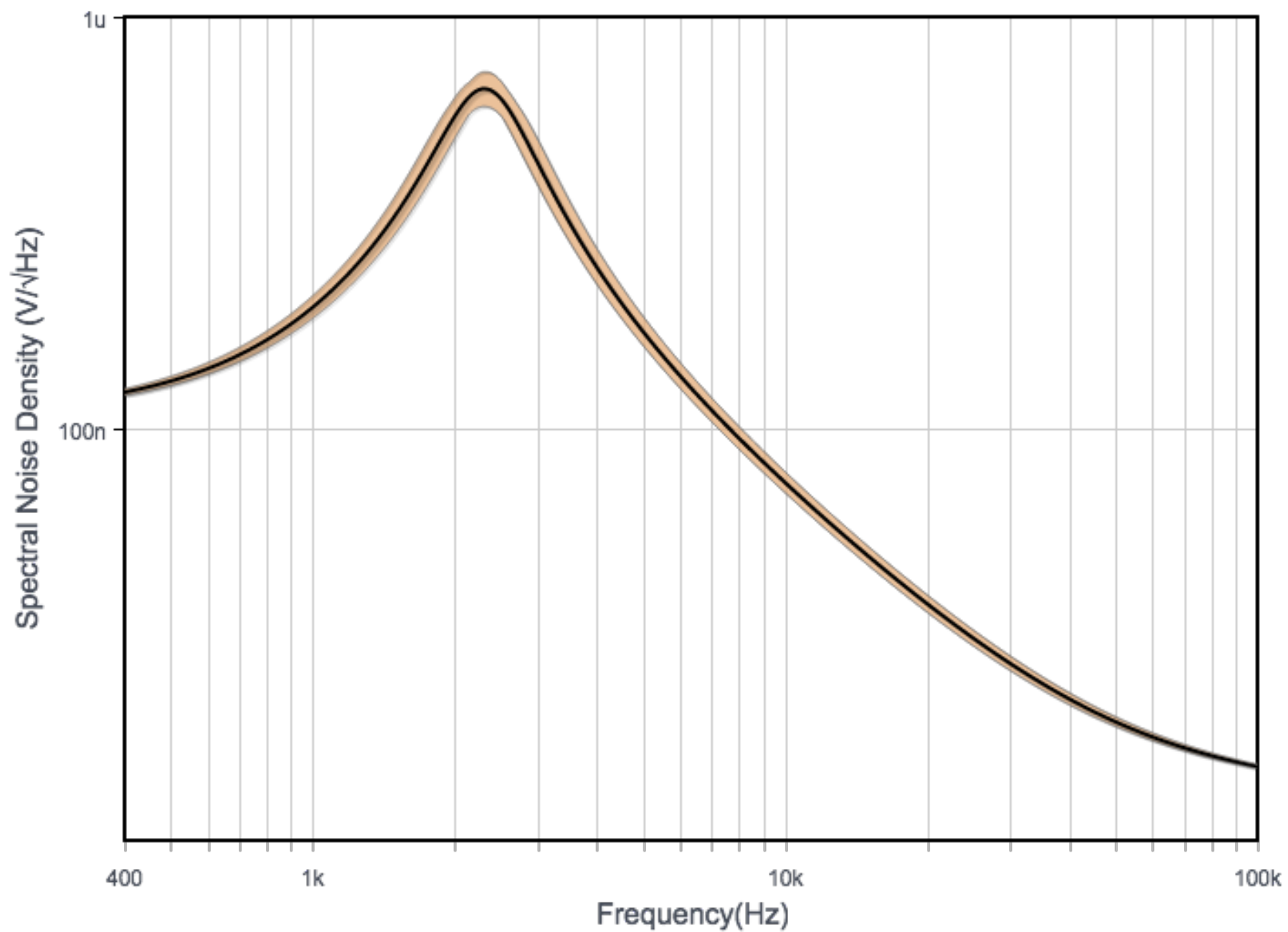
Input Impedance Magnitude



Input Impedance Phase



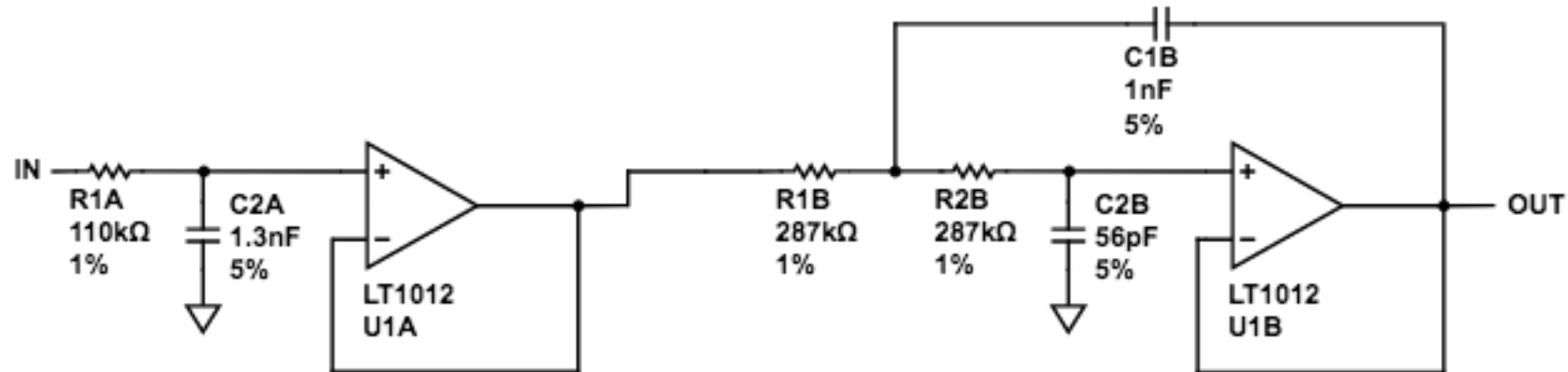
# Noise



# Circuit

Stage A  
1st order  
Low-Pass  
First Order

Stage B  
2nd order  
Low-Pass  
Sallen Key



C9A  
100nF  
20%

9V

C9B  
100nF  
20%

9V

C101M  
10uF  
20%

9V

C9M  
0.1uF  
20%

9V