



## Filter Wizard

Created by Richard Tobias on 4/17/2017



# Filter Wizard Design Report

Filter Requirements for Low-Pass, 3rd order Bessel

Specifications: Optimize for Power,  $+V_s = 5$ ,  $-V_s = -5$

Gain: 0 dB

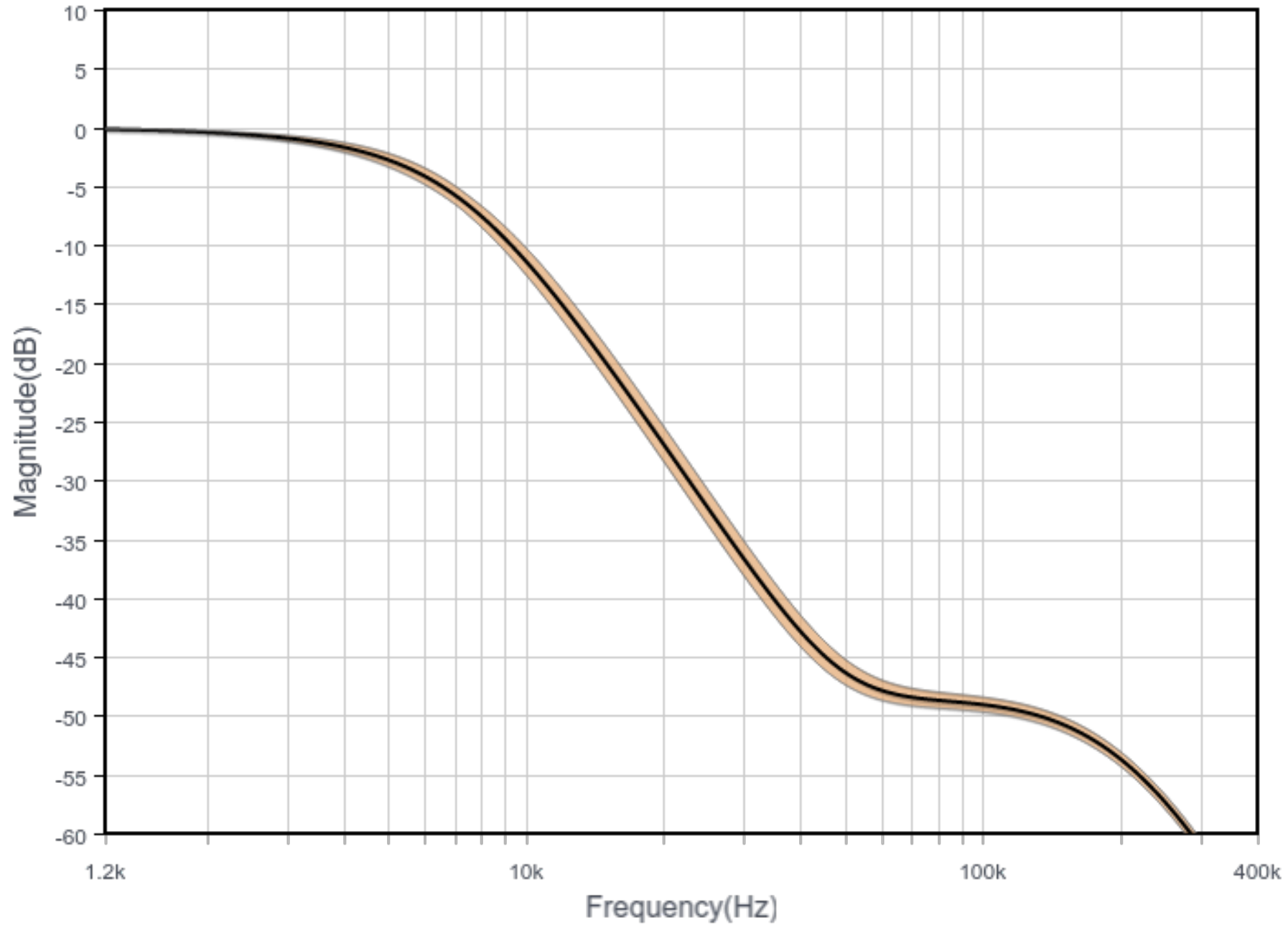
Passband: -15dB at 12kHz

Stopband: -40dB at 40kHz

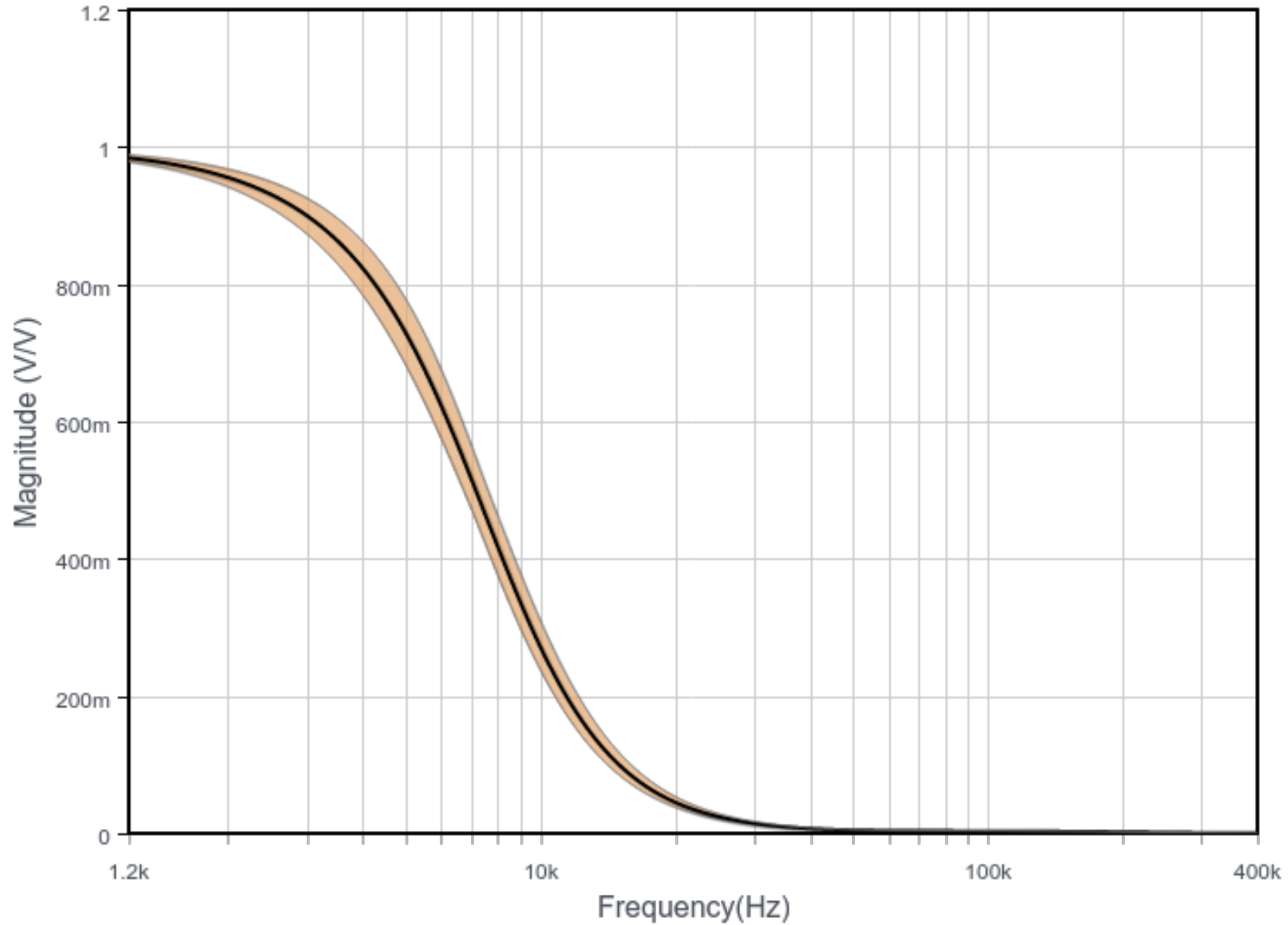
Component Tolerances: Capacitor = 5%; Resistor = 1%; Inductor = 5%; Op Amp GBW = 20%

BOM: refer to BOM.csv file

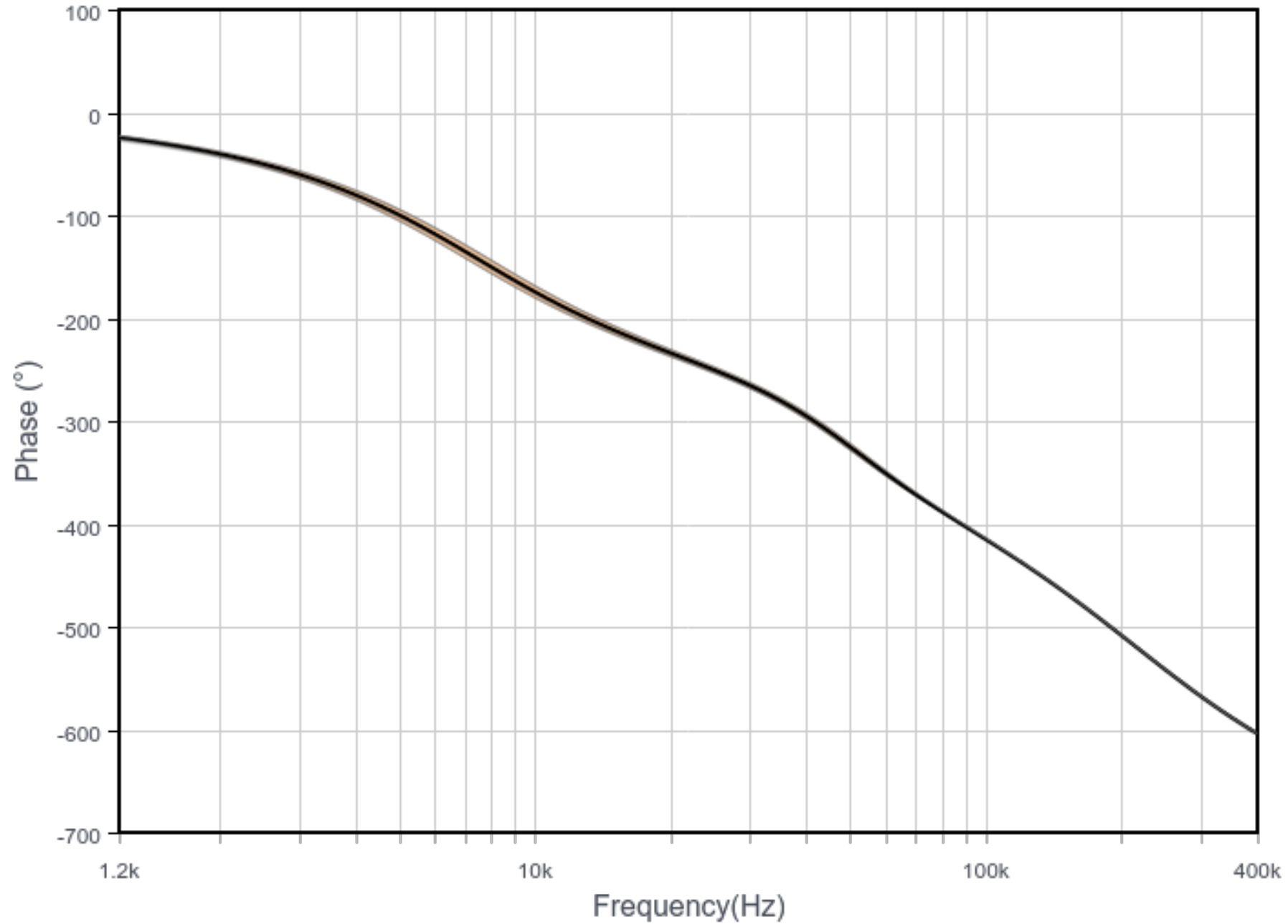
Magnitude(dB)



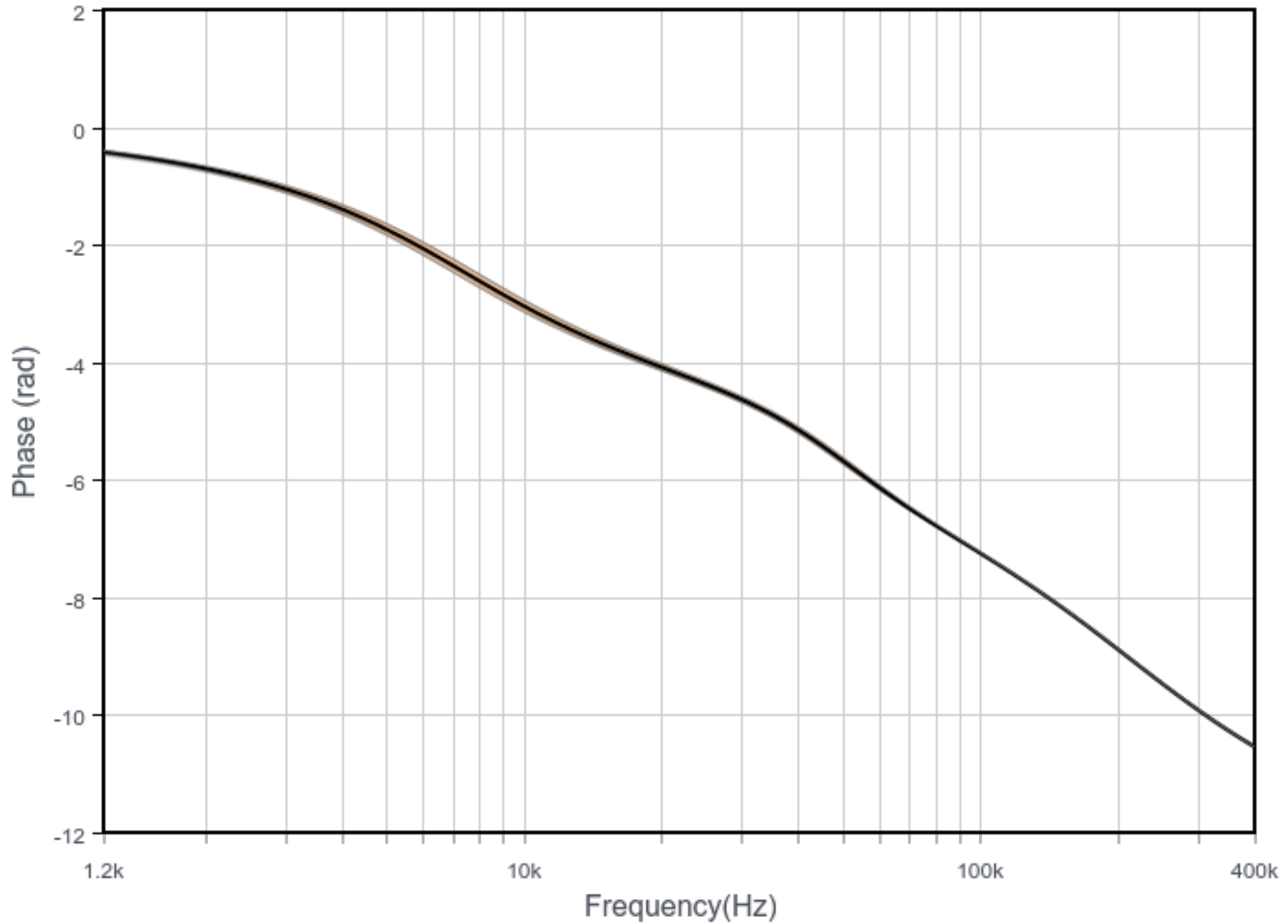
Magnitude(Volts per Volt)



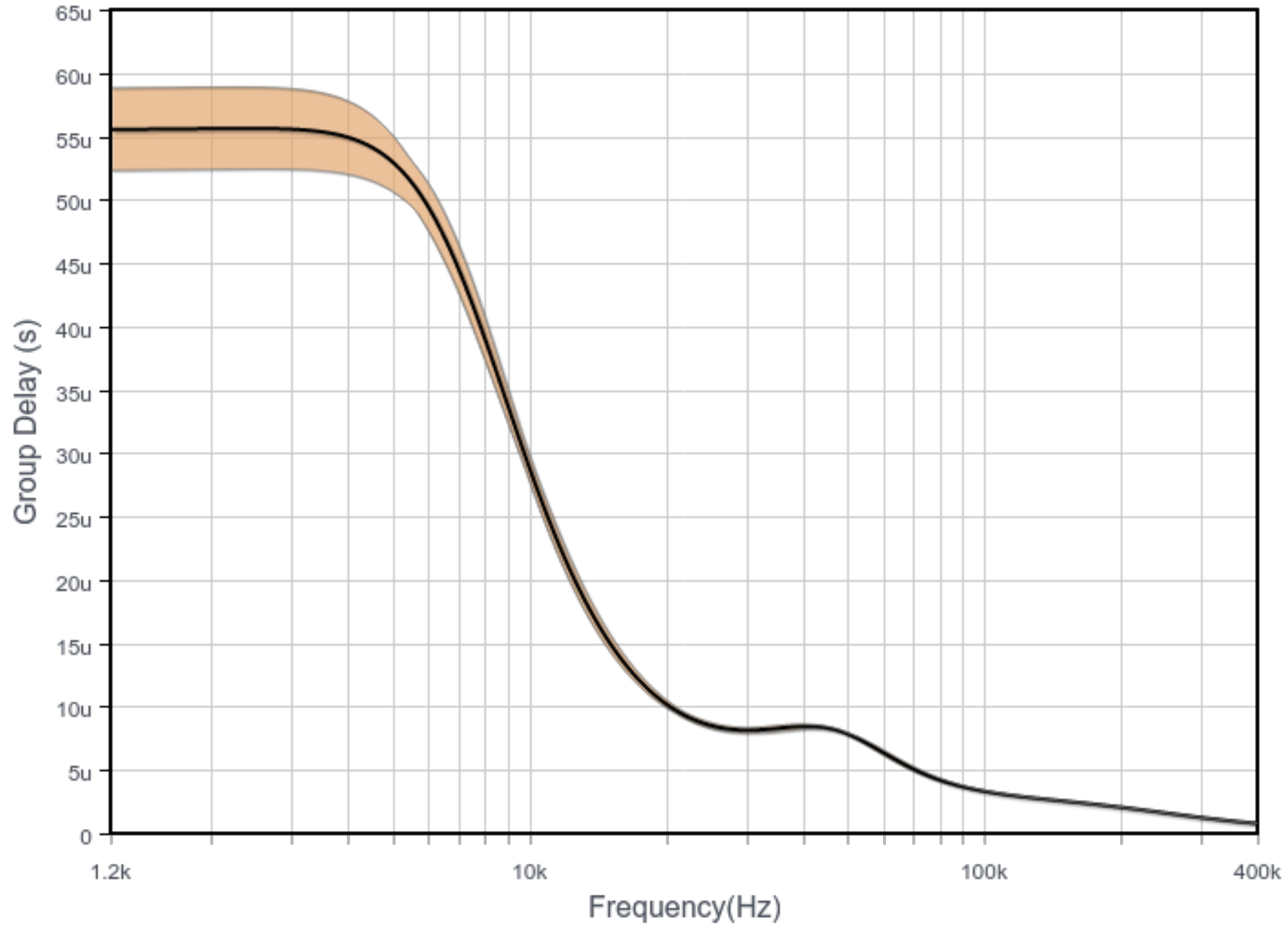
Phase(degrees)



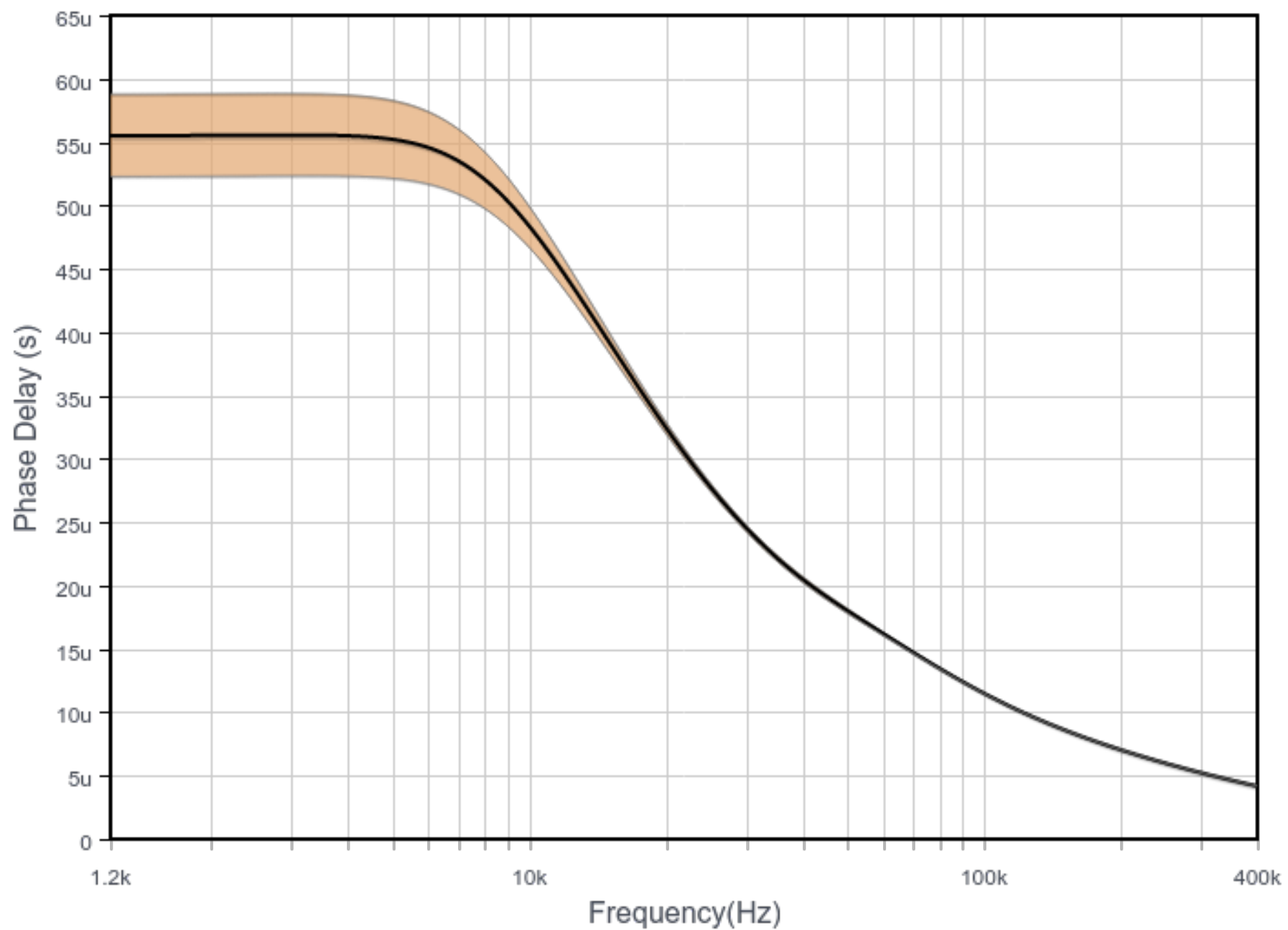
Phase(radians)



Group Delay

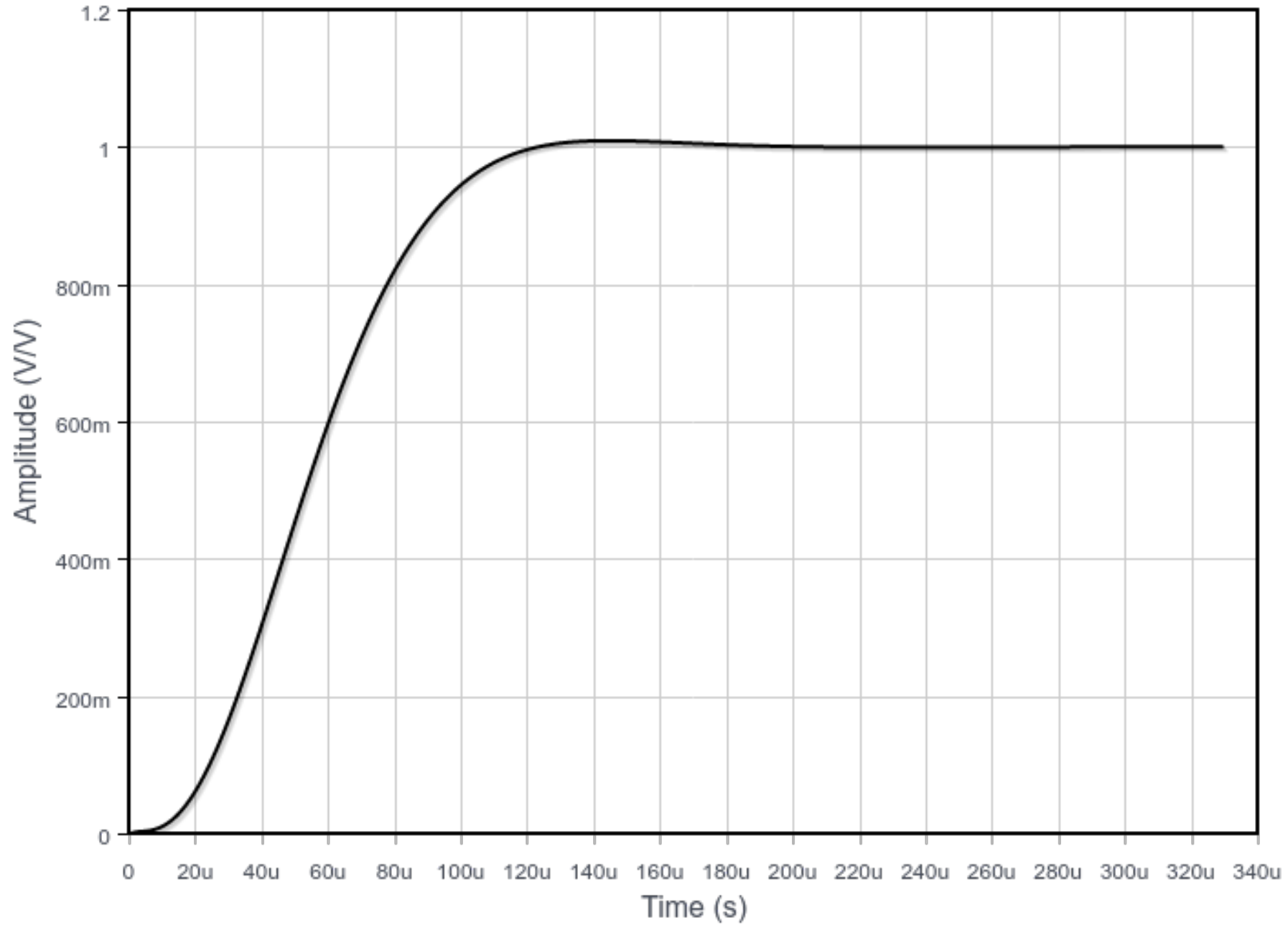


Phase Delay

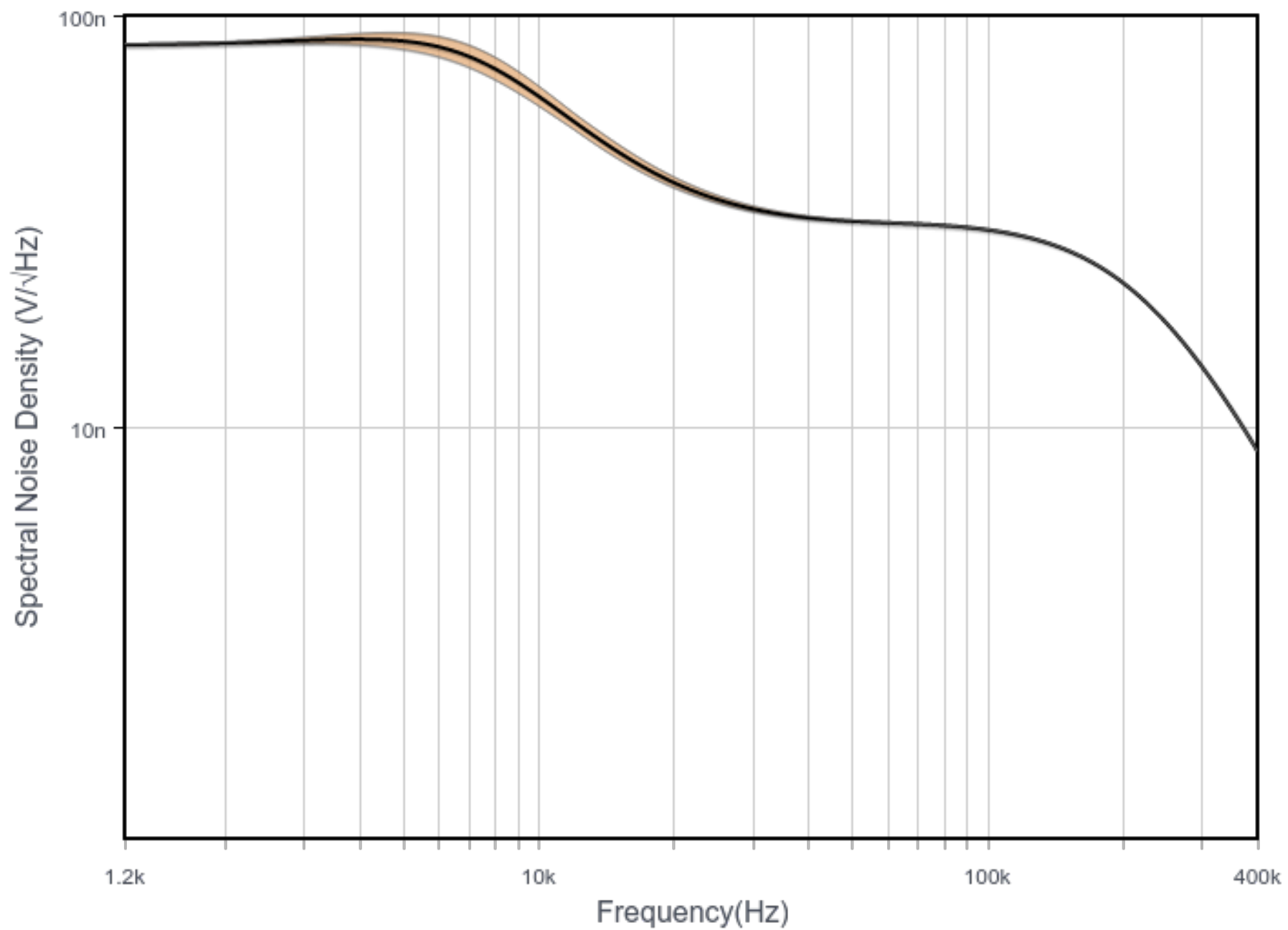




## Step Response



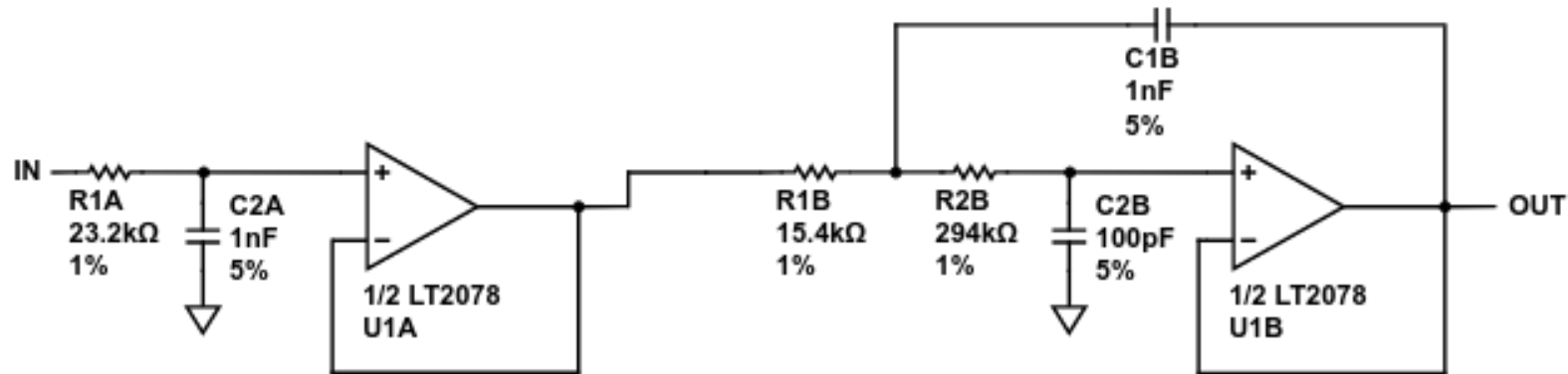
# Noise



# Circuit

Stage A  
1st order  
Low-Pass  
First Order

Stage B  
2nd order  
Low-Pass  
Sallen Key



C9A  
100nF  
20%



C0A  
100nF  
20%



C9B  
100nF  
20%



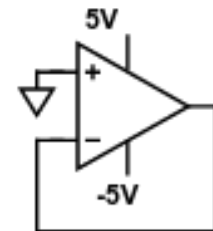
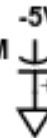
C0B  
100nF  
20%



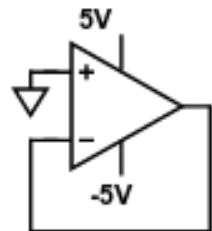
C101M  
10uF  
20%



C100M  
10uF  
20%



1/2 LT2078  
U1A



1/2 LT2078  
U1B