Filter Wizard

Filter Wizard Design

Created on 11/08/2025

ANALOG DEVICES

Filter Wizard Design Report

Filter Requirements for Band-Pass, 2nd order Bessel

Specifications: Optimize: Specific Parts; +Vs: 2.75; -Vs: -2.75

Gain: 3 dB

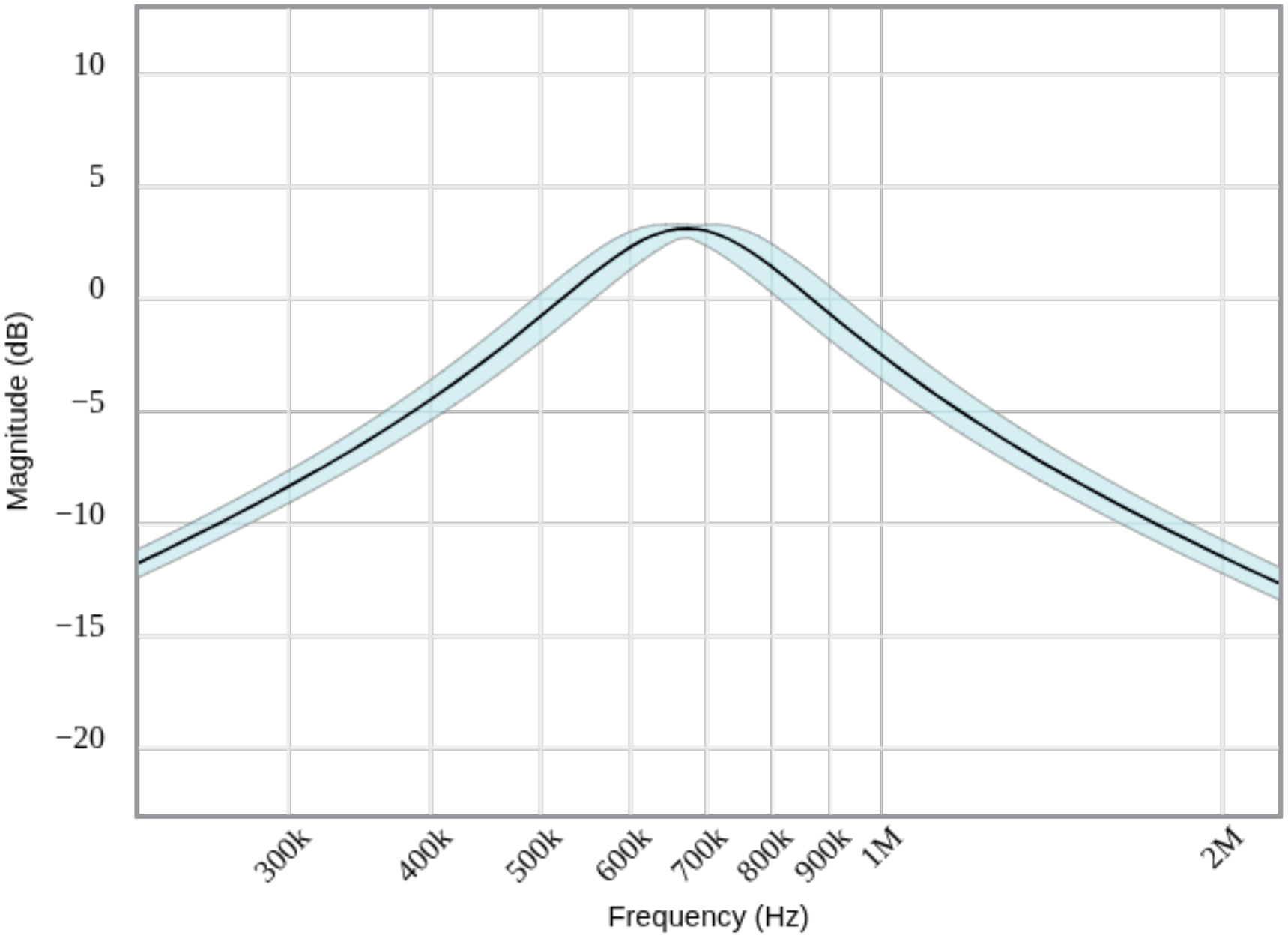
Passband: -4.5dB at 500kHz

Stopband: -6dB at 1MHz

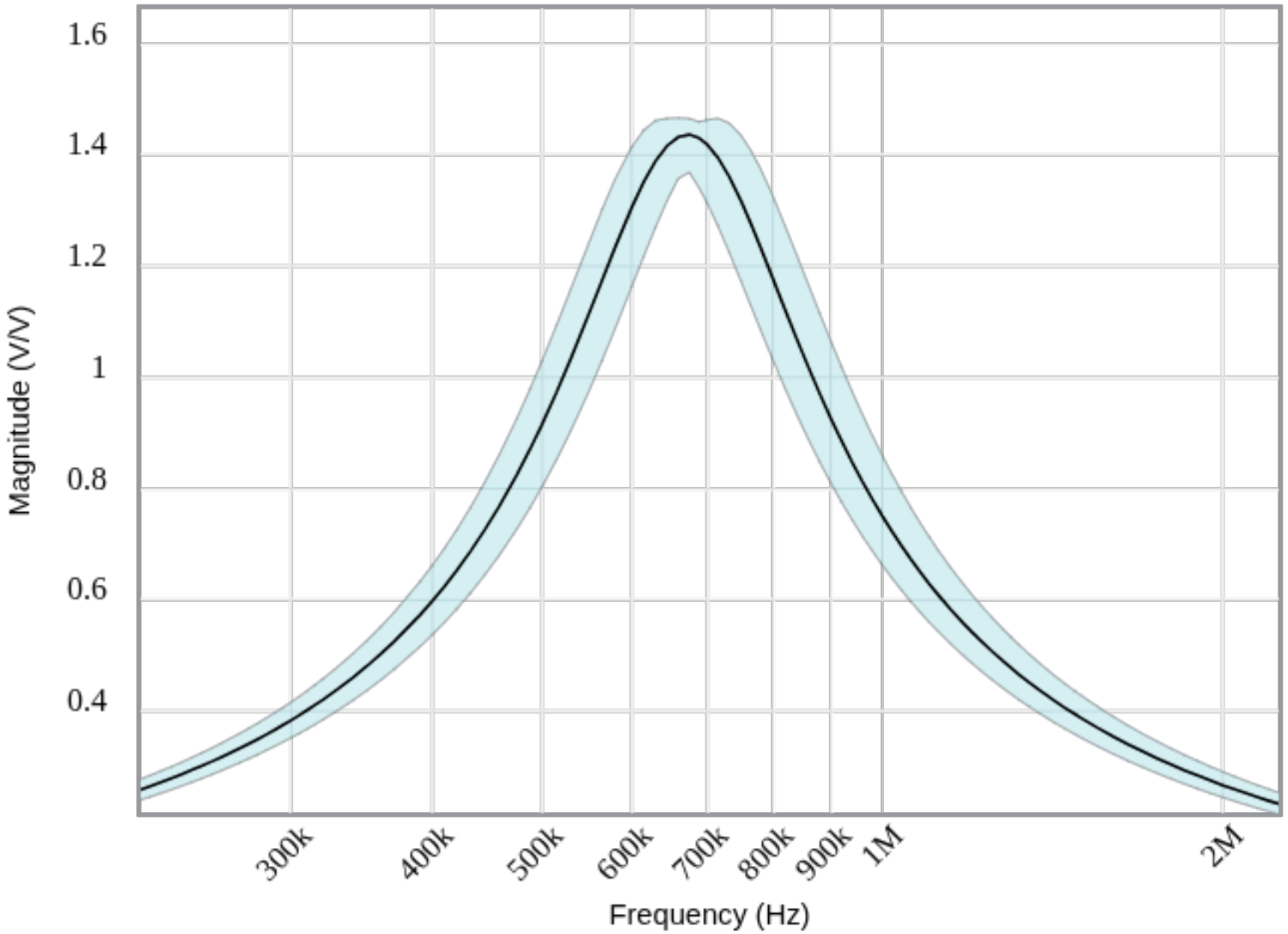
Component Tolerances: Capacitor = 5%; Resistor = 1%; Inductor = 5%; Op Amp GBW = 20%

BOM: refer to BOM.csv file

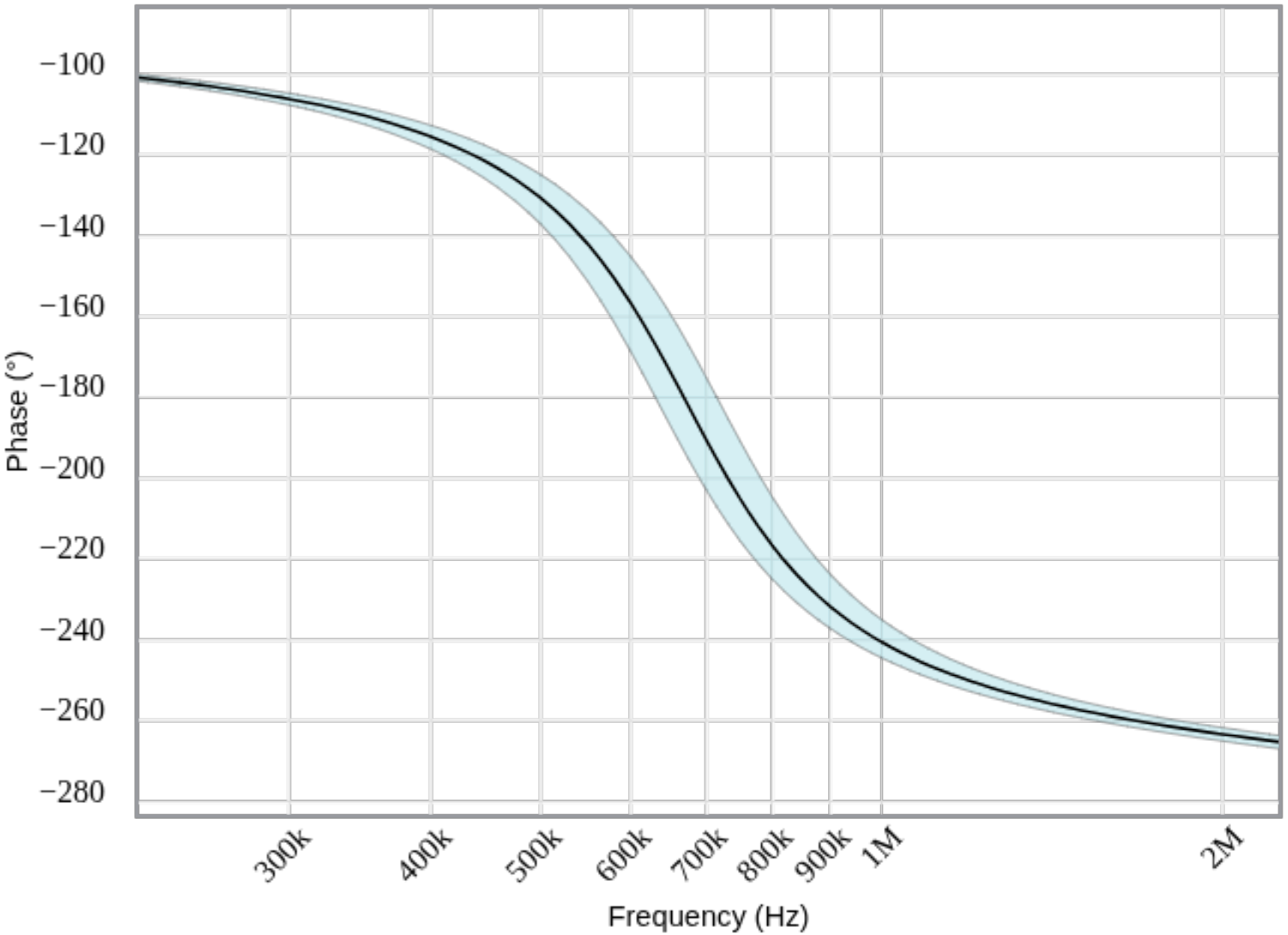
Magnitude(dB)



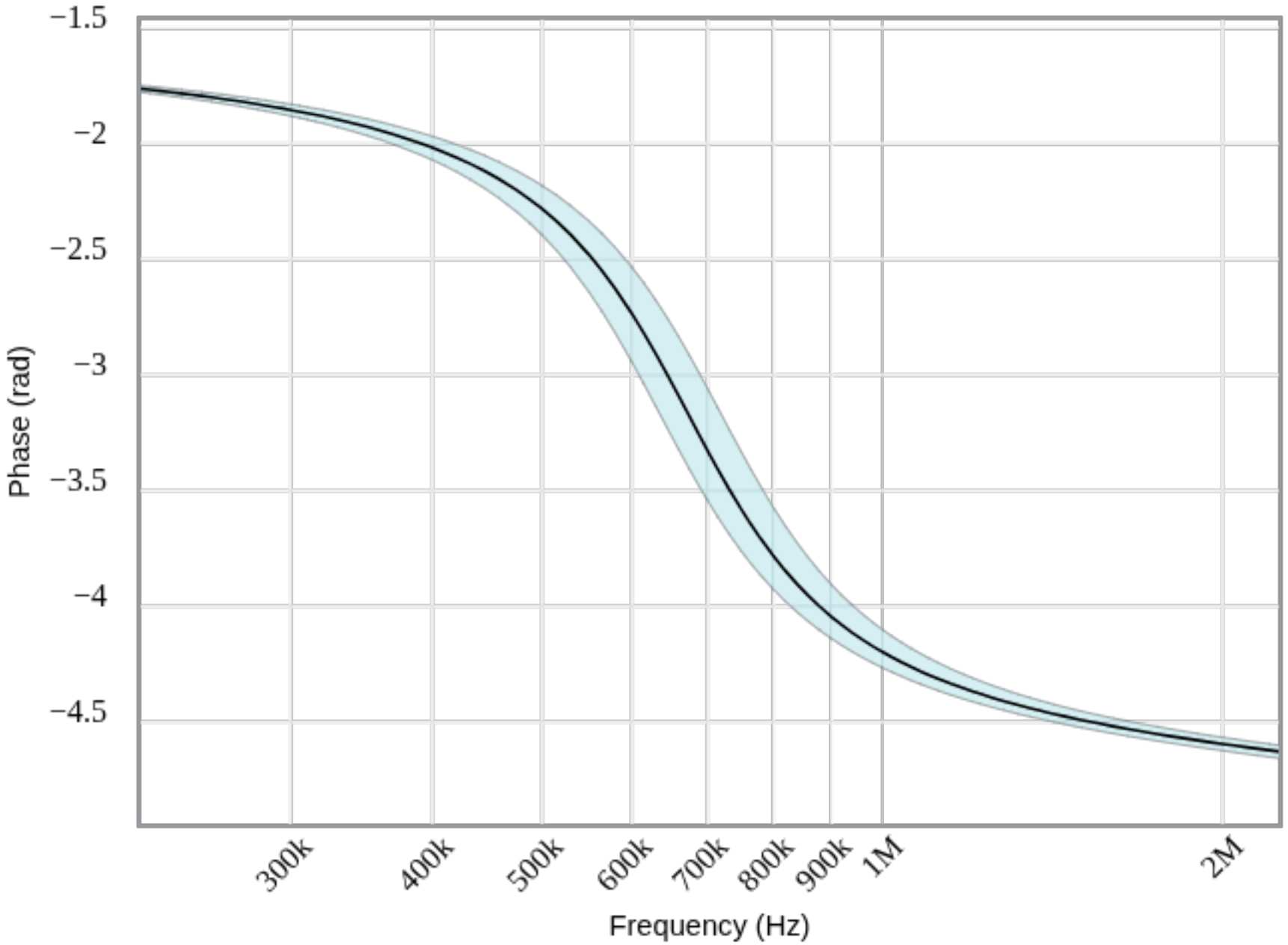
Magnitude(Volts per Volt)



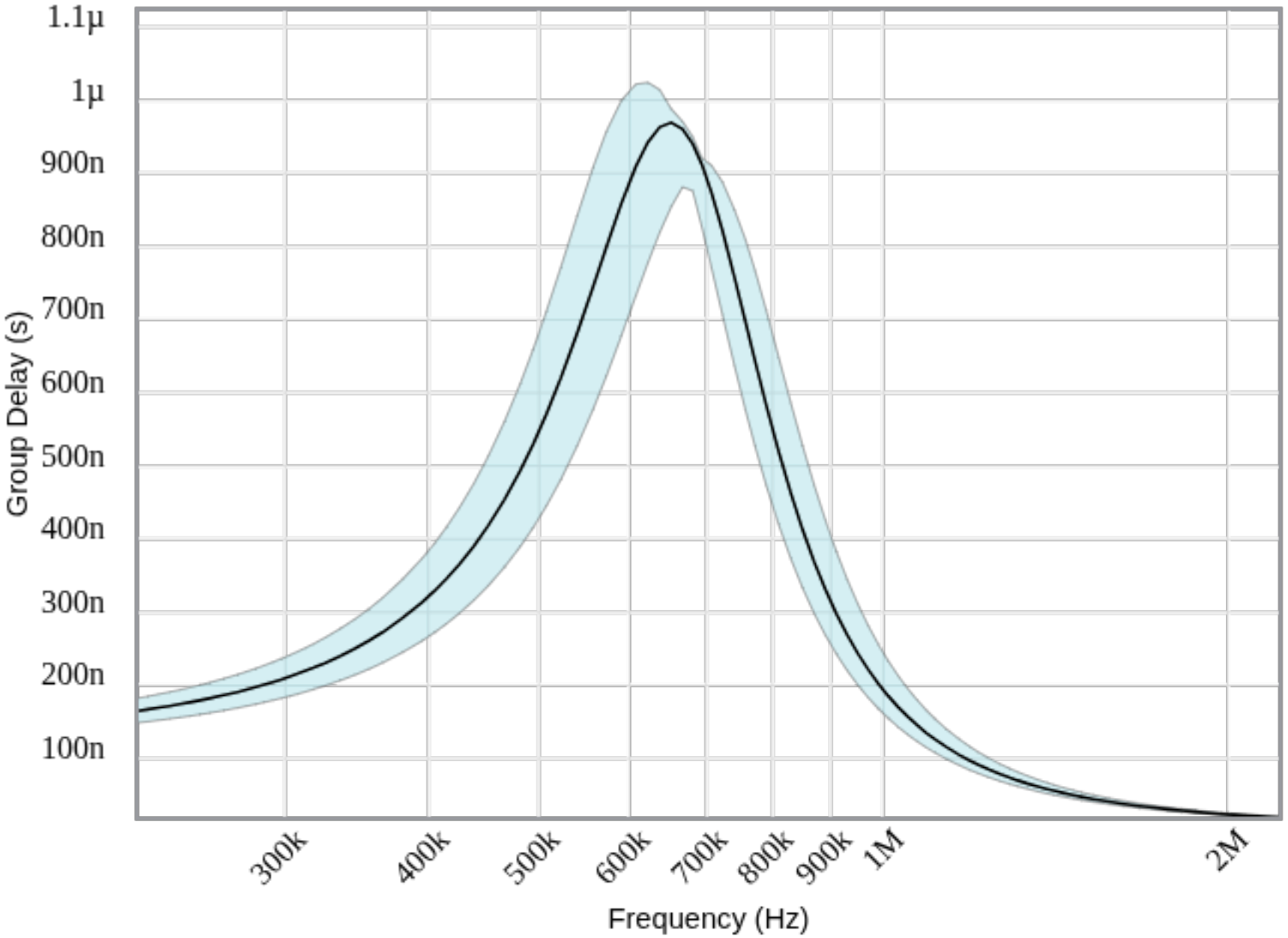
Phase(degrees)



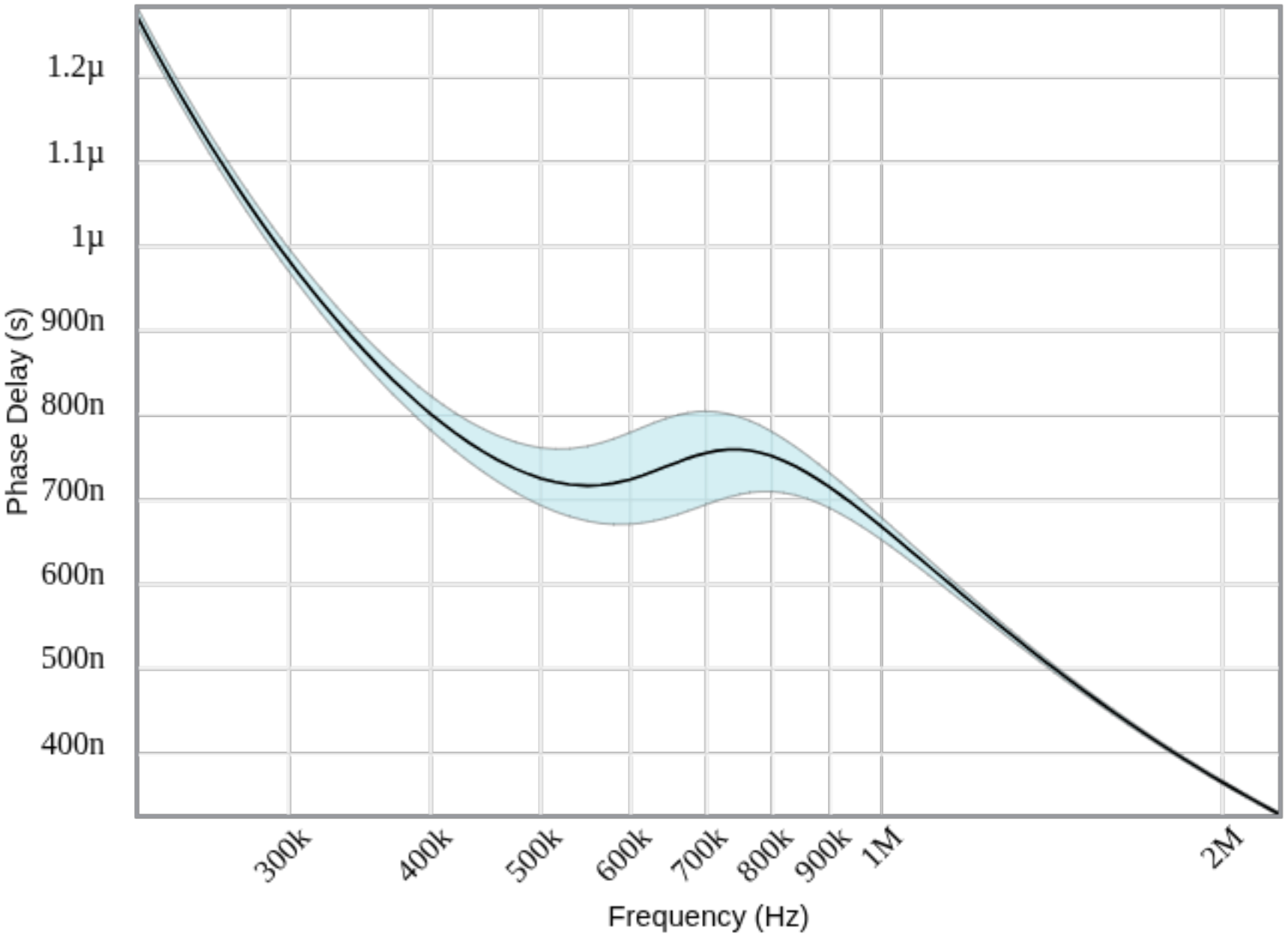
Phase(radians)



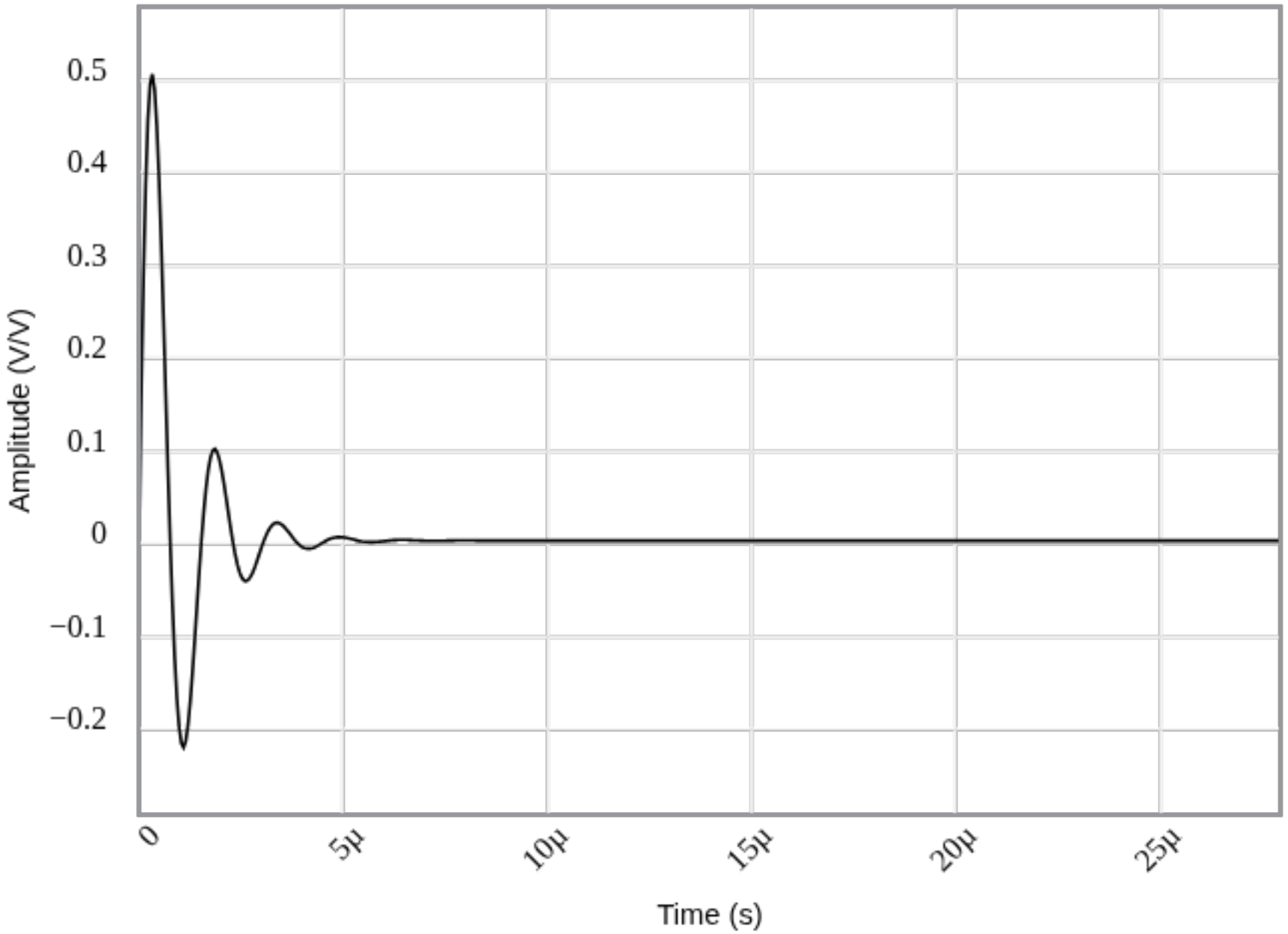
Group Delay


1.1µ
1µ
900n
800n
700n
600n
500n
400n
300n
200n
100n
Group Delay (s)
300k
400k
500k
600k
700k
800k
900k
1M
2M
Frequency (Hz)

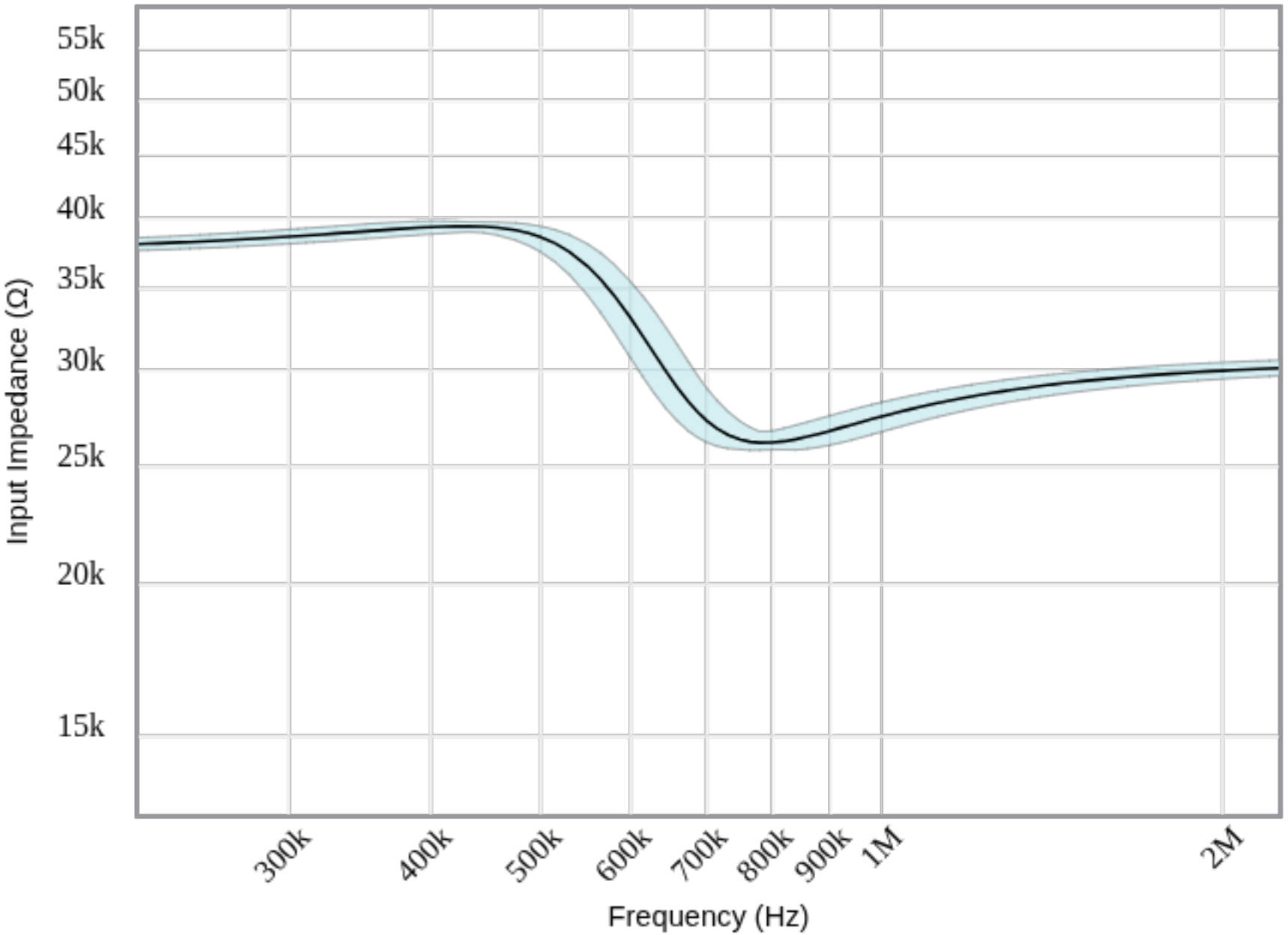
Phase Delay


1.2µ
1.1µ
1µ
900n
800n
700n
600n
500n
400n
Phase Delay (s)
300k
400k
500k
600k
700k
800k
900k
1M
2M
Frequency (Hz)

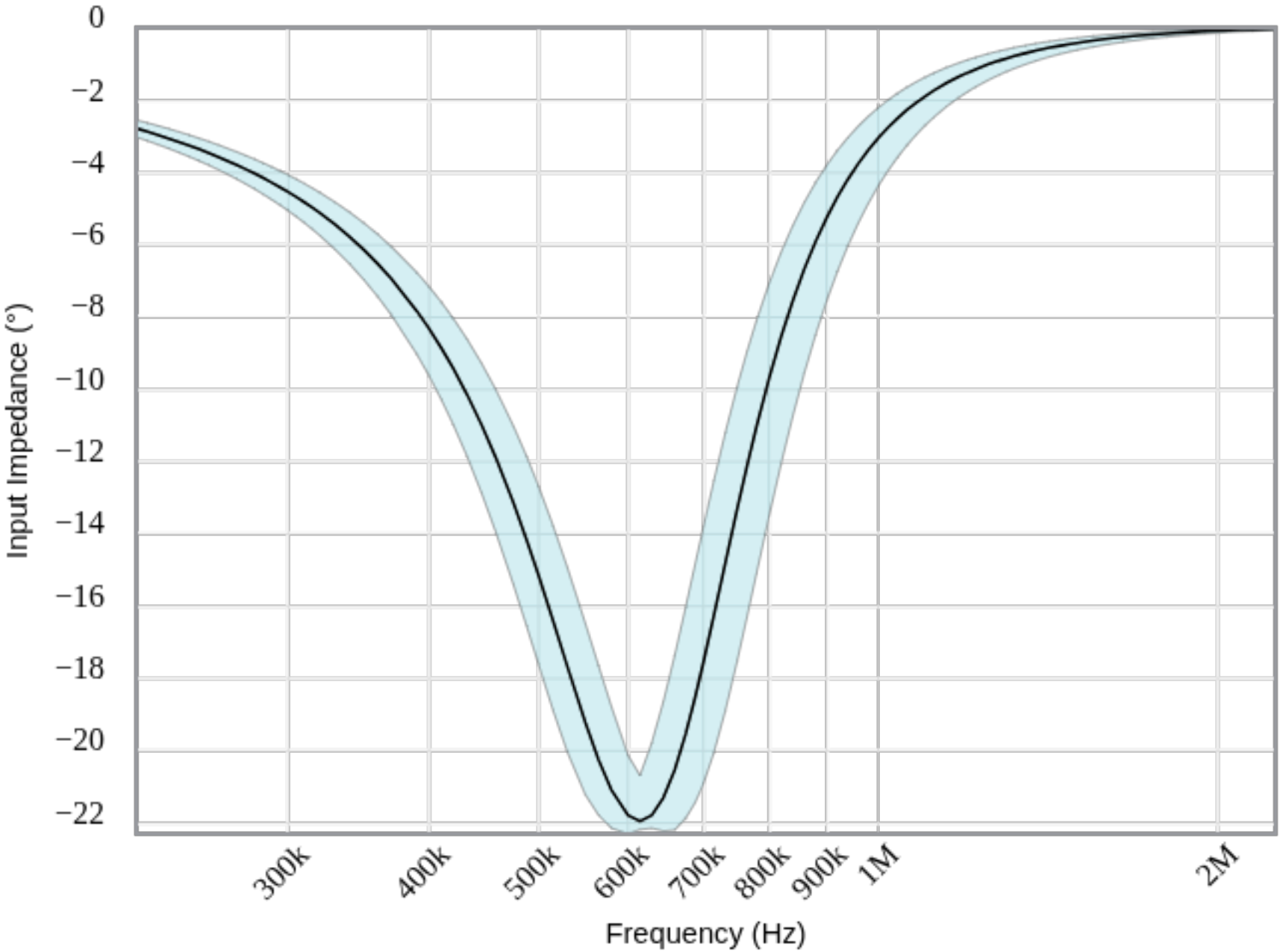
Step Response



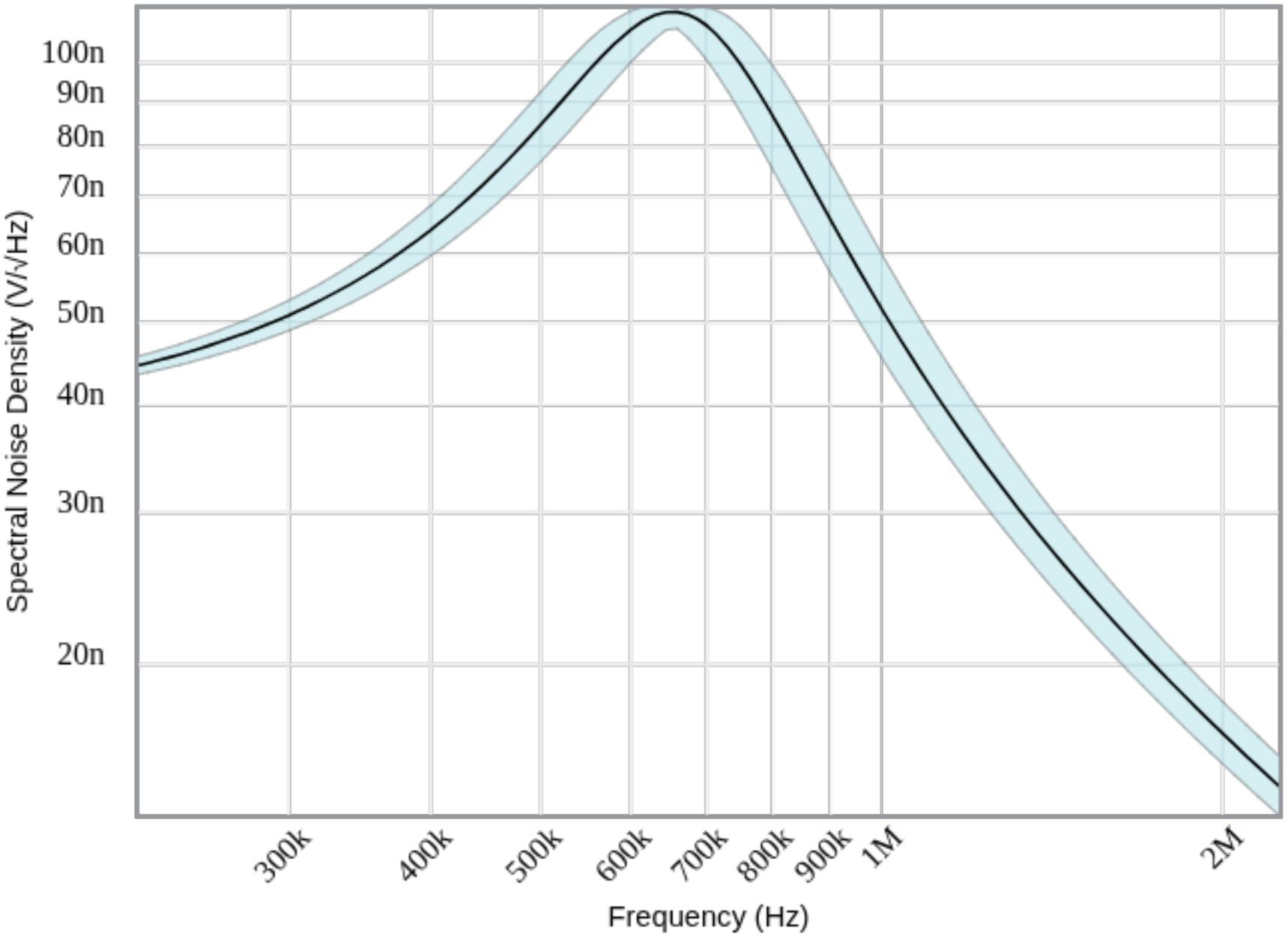
Input Impedance Magnitude



Input Impedance Phase



Noise

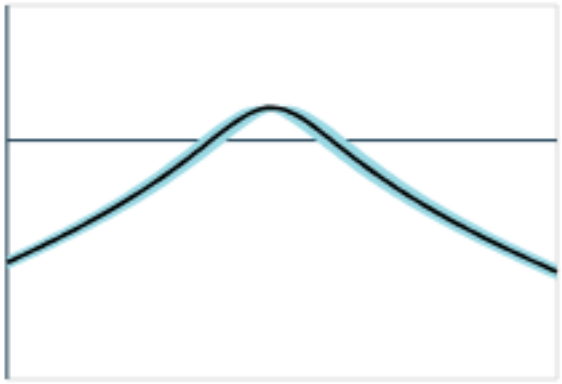

100n
90n
80n
70n
60n
50n
40n
30n
20n
Spectral Noise Density (V/√Hz)
300k
400k
500k
600k
700k
800k
900k
1M
2M
Frequency (Hz)

Stages

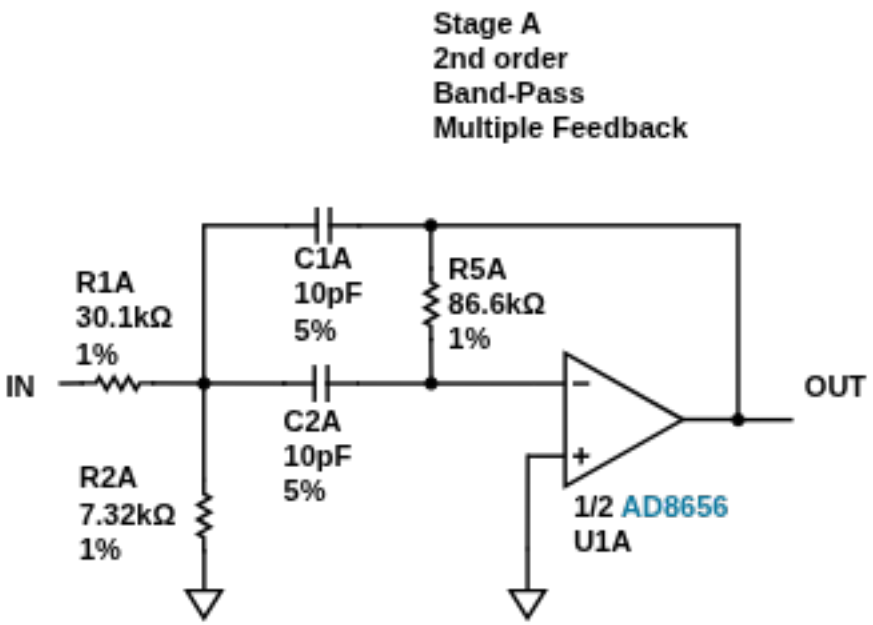
Your filter requires 1 op amp stage(s) with the following characteristics

2nd order Band-Pass Multiple Feedback

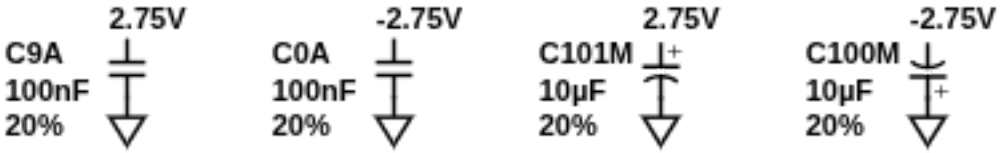
	Target	Simulated
Gain (V/V):	1.41	1.41 to 1.47
f_p (Hz):	707k	636k to 719k
Q:	1.91	1.98 to 2.03



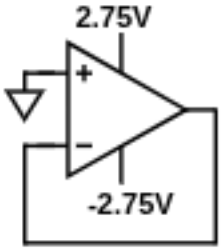
Circuit



BYPASS CAPACITORS



SPARES Why The Spares?



1/2 AD8656
U1A