Filter Wizard

Created by mike stebbins on 12/12/2015

Filter Wizard Design Report

Filter Requirements for Band-Pass, 4th order Chebyshev 0.18 dB

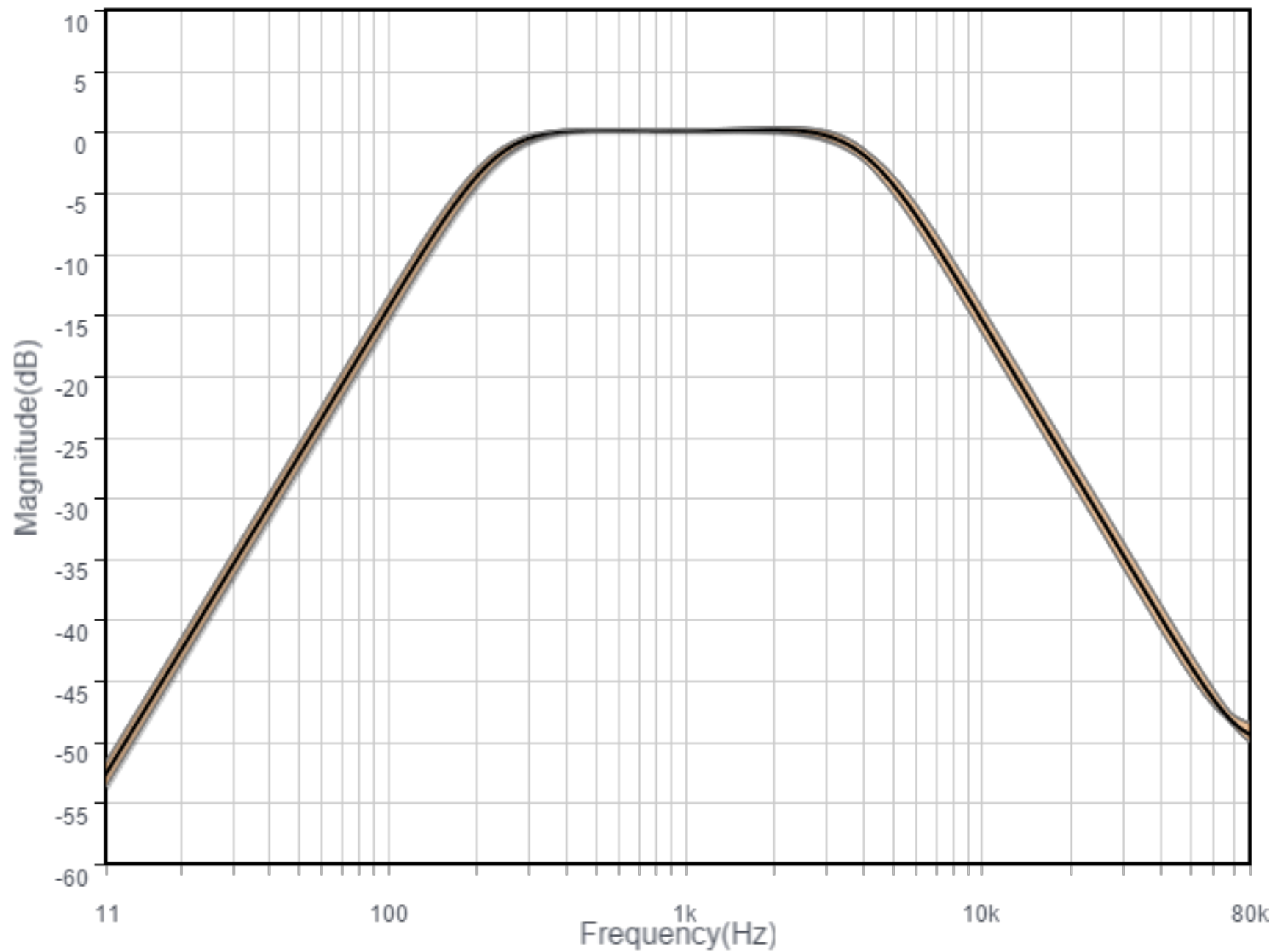Specifications: Optimize for Voltage Range, +Vs= 5, -Vs= 0

Gain: 1 V/V

Passband: -3dB at 4.2kHz
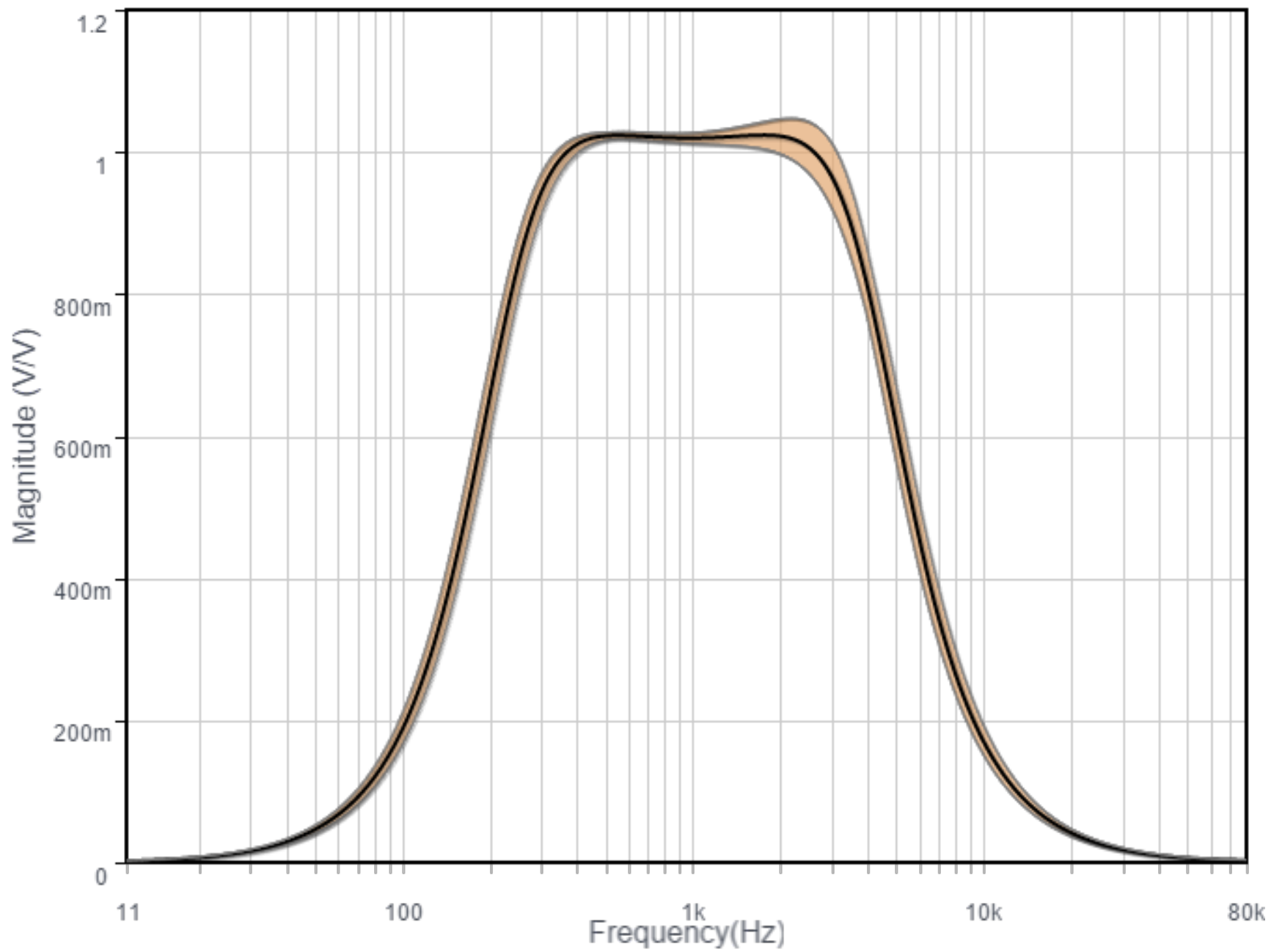
Stopband: -40dB at 40kHz

Component Tolerances: Capacitor = 5%; Resistor = 1%; Inductor = 5%; Op Amp GBW = 20%
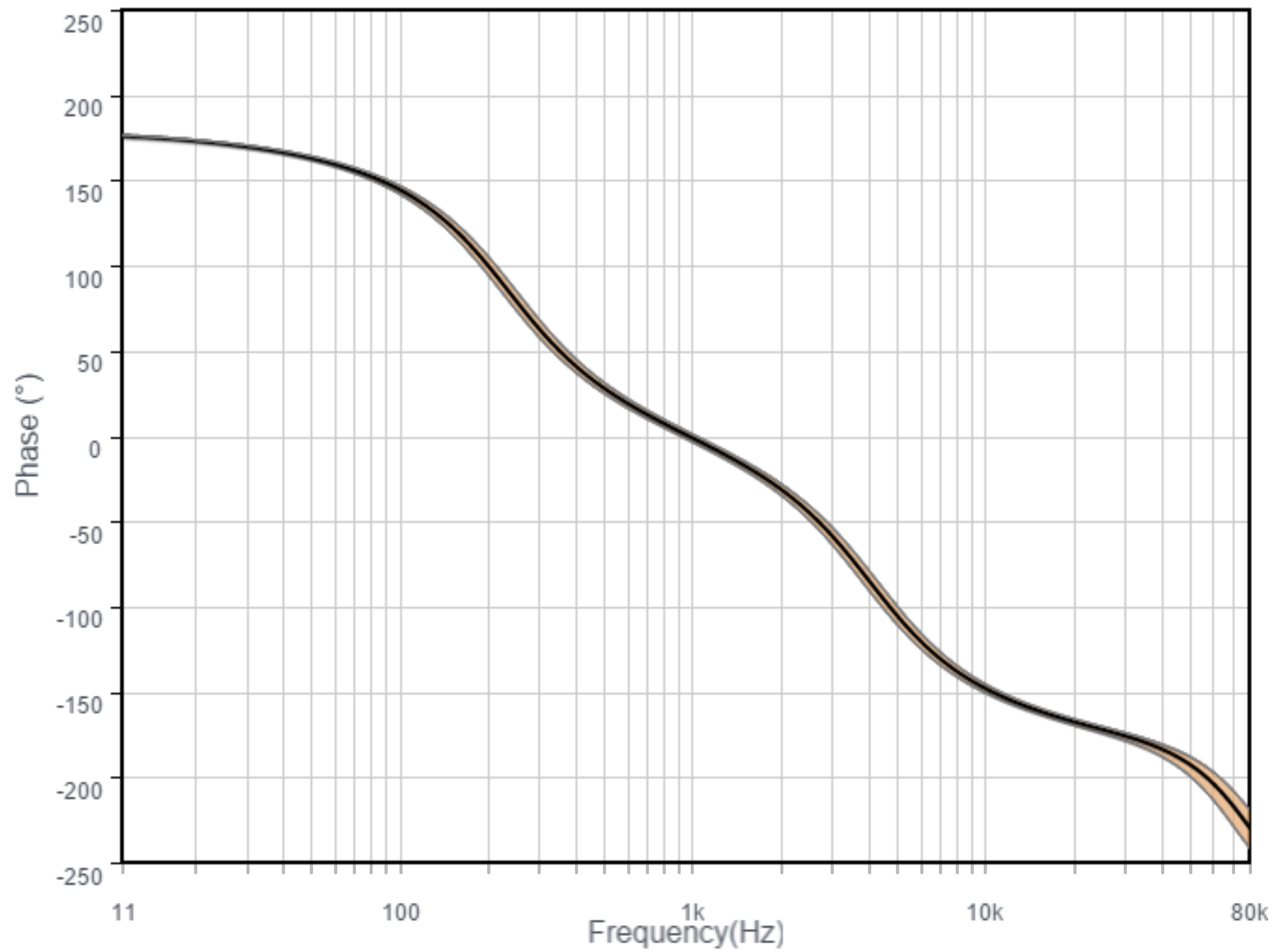
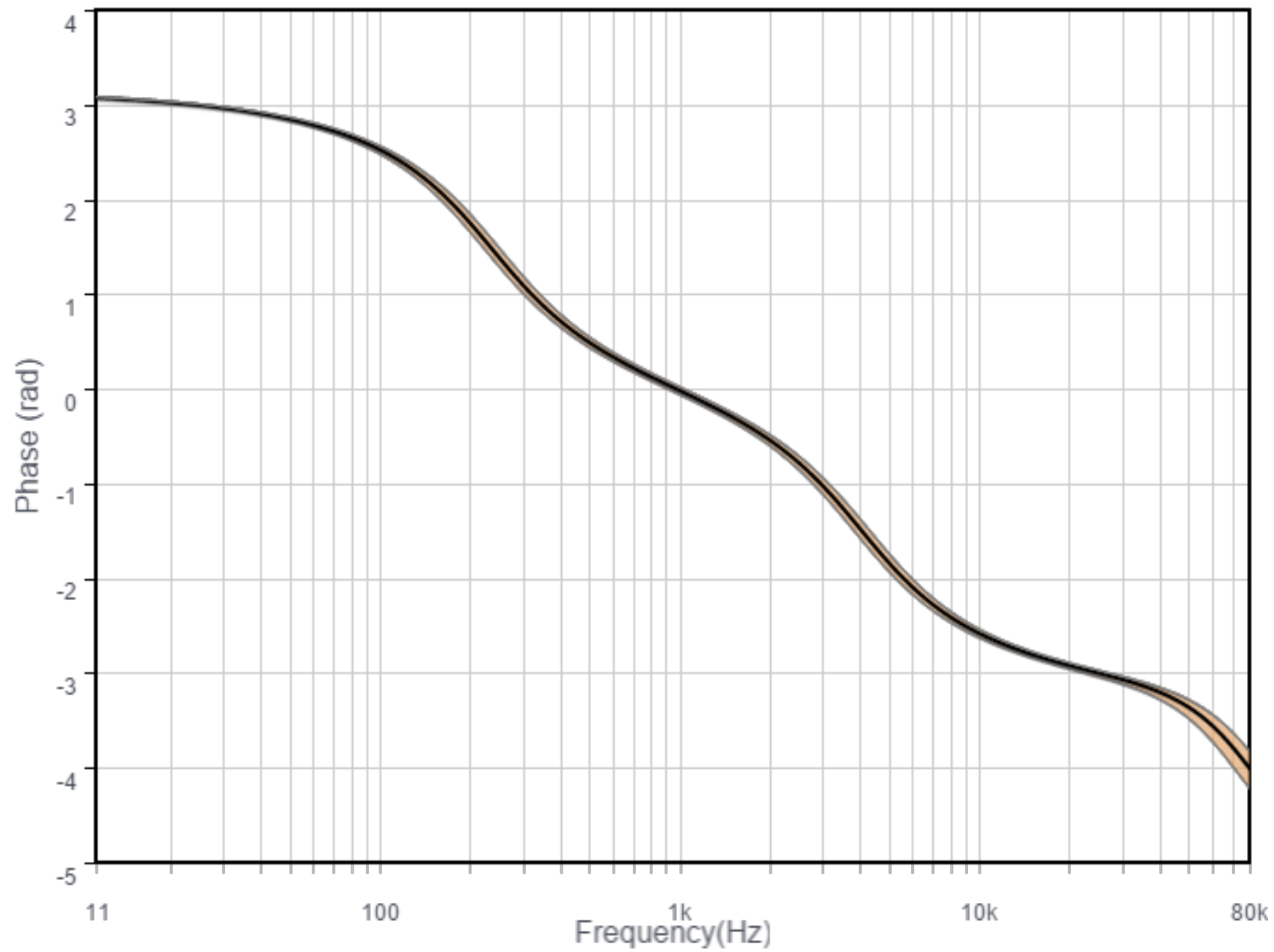BOM: refer to BOM.csv file
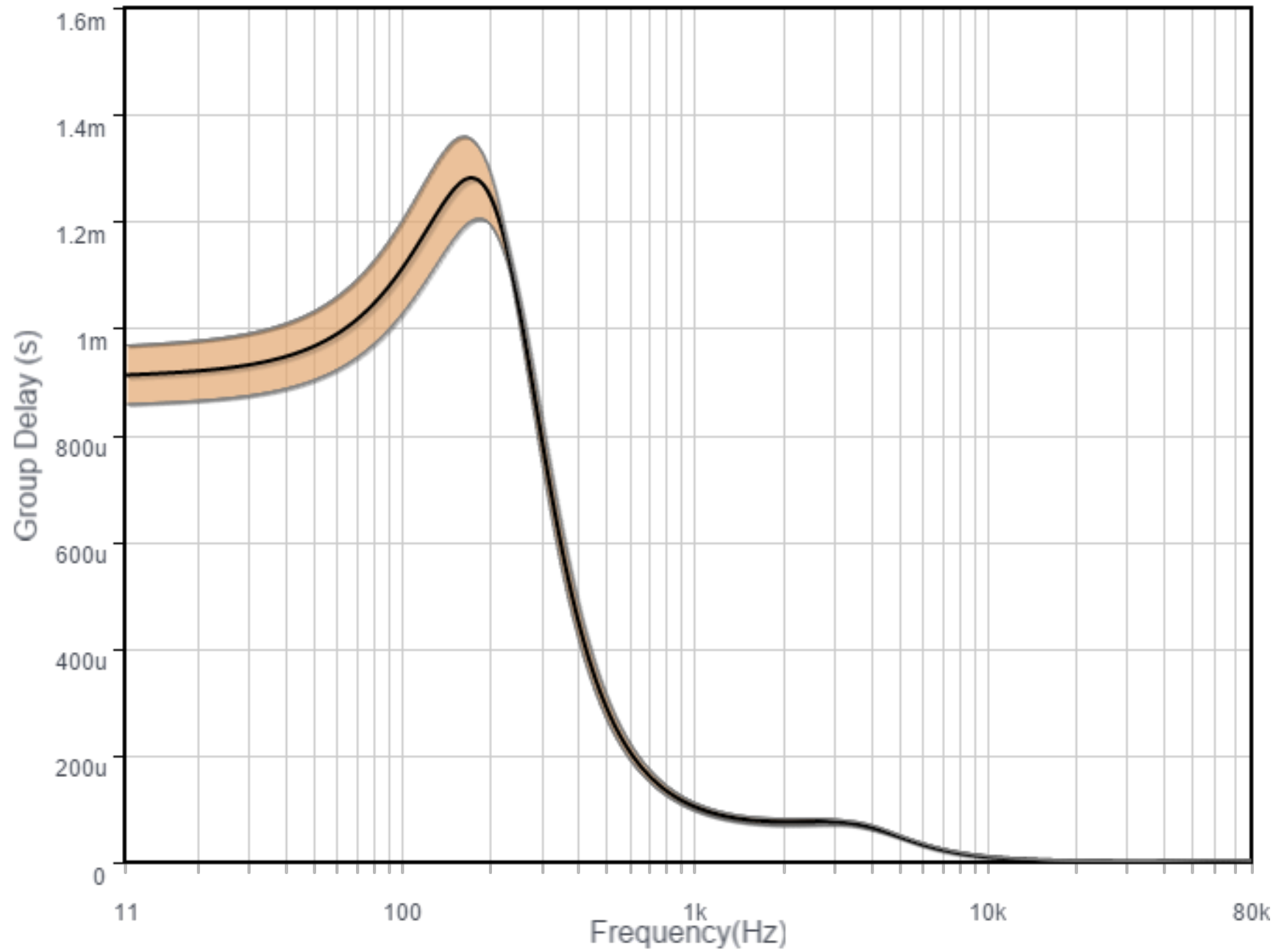
Magnitude(dB)
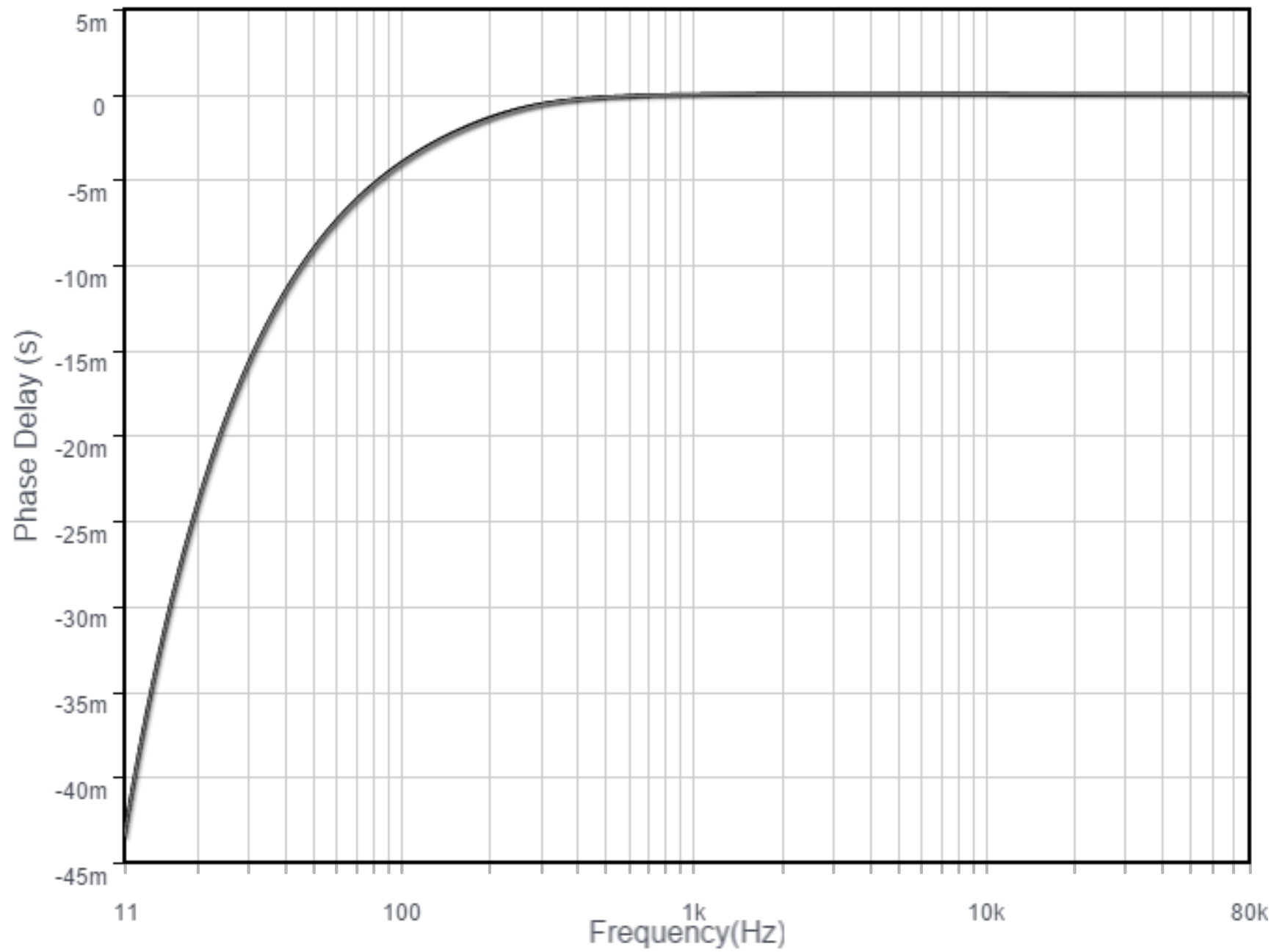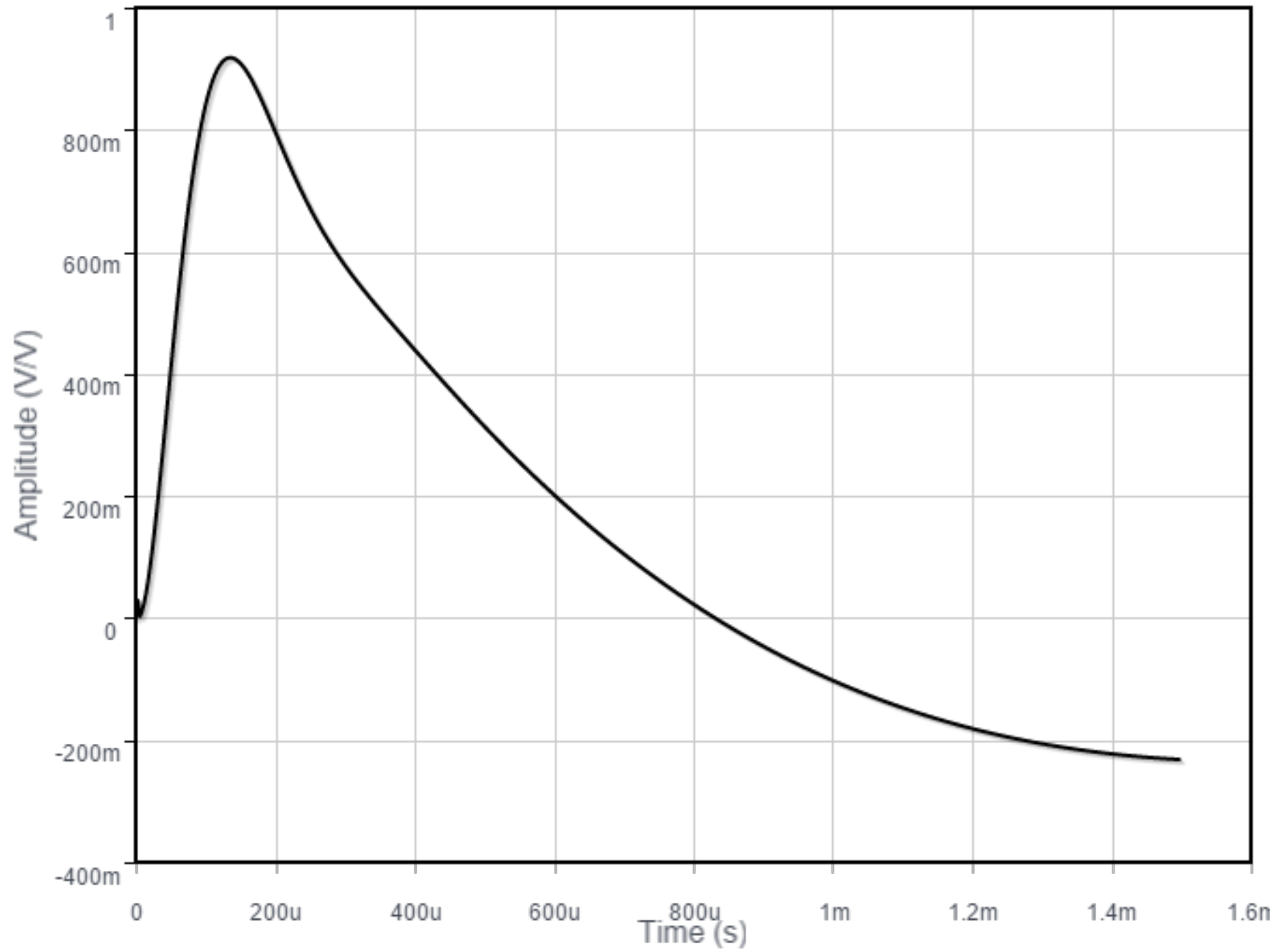
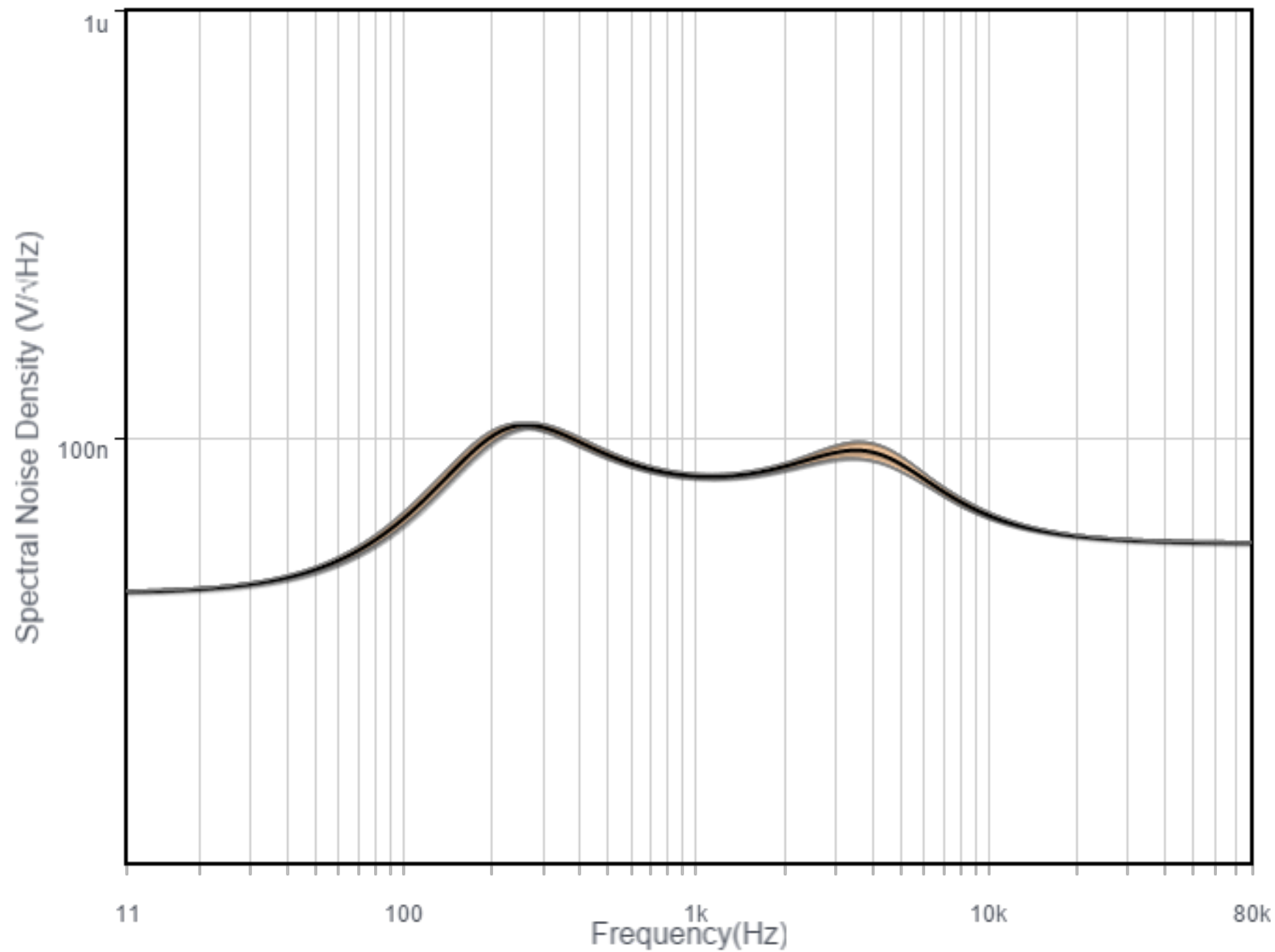Magnitude(Volts per Volt)

Phase(degrees)

Phase(radians)

Group Delay

Phase Delay

Step Response

Noise

Circuit

Stage A
2nd order
Low-Pass
Sallen Key

Stage B
2nd order
High-Pass
Sallen Key

C1A
3.9nF
5%

R1B
6.34kΩ
1%

IN

R1A
8.45kΩ
1%

R2A
118kΩ
1%

C2A
390pF
5%

REF

1/2 AD8542
U1A

C5B
68nF
5%

C6B
68nF
5%

R2B
15.8kΩ
1%

REF

OUT

1/2 AD8542
U1B

C9A
100nF
20%

5V

C9B
100nF
20%

5V

C101M
10uF
20%

5V

C9M
0.1uF
20%

5V

REF

5V

REF

5V

1/2 AD8542
U1A

1/2 AD8542
U1B

5V

R1M
10 kΩ
1%

5V

REF

C1M
10 uF
20%

C4M
0.1uF
20%

R2M
10 kΩ
1%

AD8031
U1M

C2M
10 uF
20%

C3M
0.1uF
20%

R3M
4.99 kΩ
1%