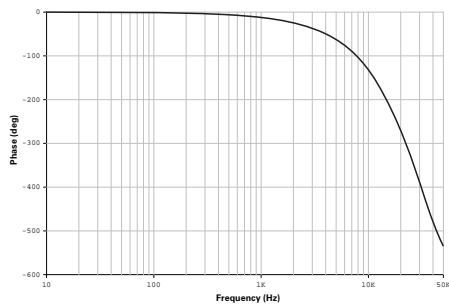
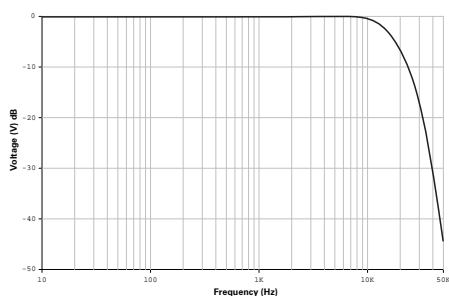


Elite Series Amplitude/Phase Frequency Response



Applicable Equipment:

Elite Series CPL190/CPL290 and DMT model Capacitive Sensors

Applications:

High-speed applications where bandwidth response (amplitude/phase) is critical.

Summary:

Details the output amplitude and phase for each of the standard bandwidth settings (100Hz, 1kHz, 10kHz, 15kHz). Because of a constant time delay, output phase and frequency have a linear relationship.

Output Amplitude Response

Bandwidth filters used in the Elite Series capacitive sensors (and previous DMT models) reduce the amplitude of higher frequency signals. System designers who require a particular bandwidth or need to understand the output signal as a function of frequency will find this information useful.

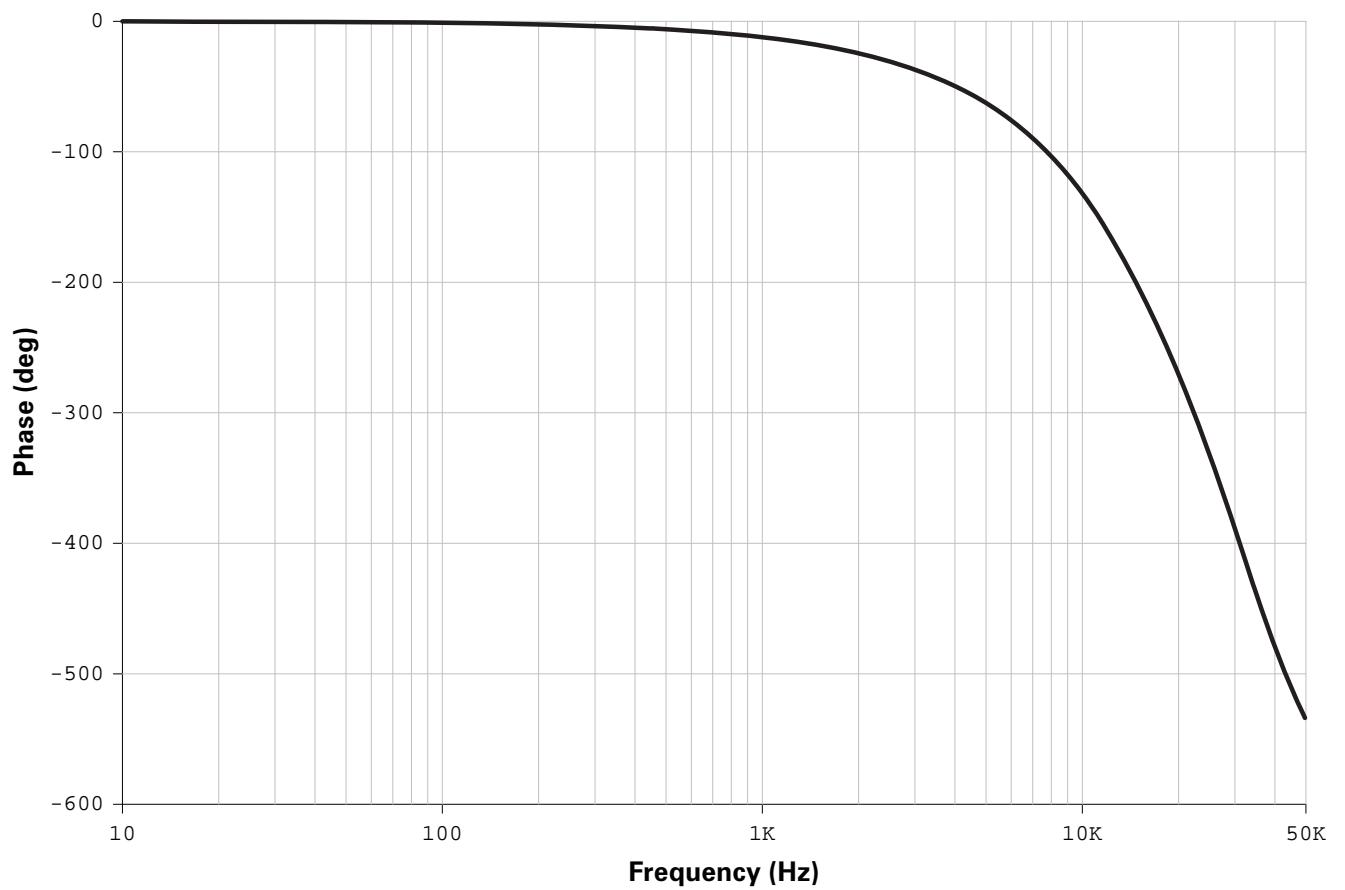
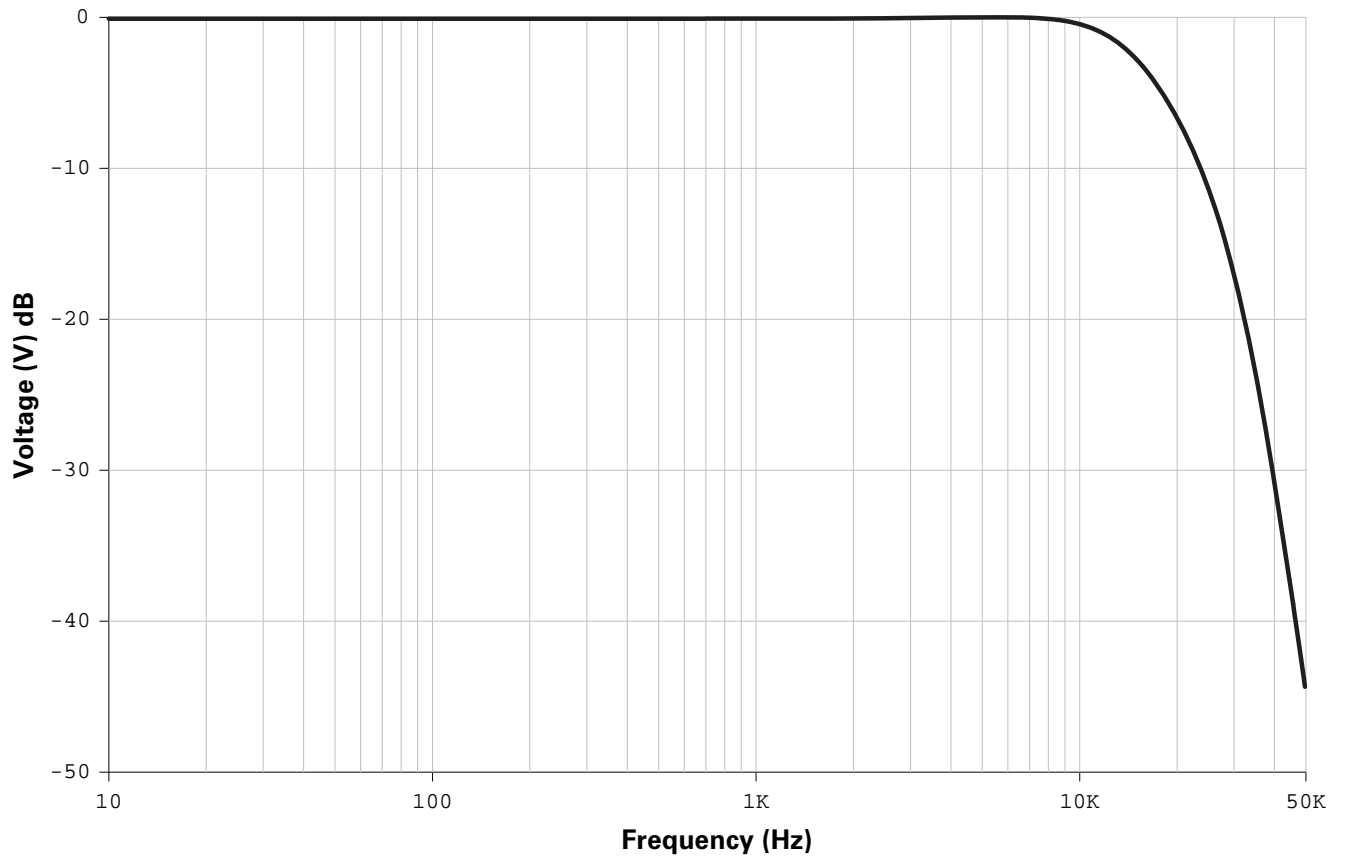
Output Phase Response

Bandwidth filters used in the Elite Series capacitive sensors (and previous DMT models) create a time delay which appears as a frequency-dependant phase shift in the sensor output. Because the time delay is a constant, the relationship between frequency and phase is linear. The linear relationship between phase and frequency is critical to servo system designers. System designers using the sensor output to control position or process require this phase information to ensure that the system will not oscillate or adjust incorrectly.

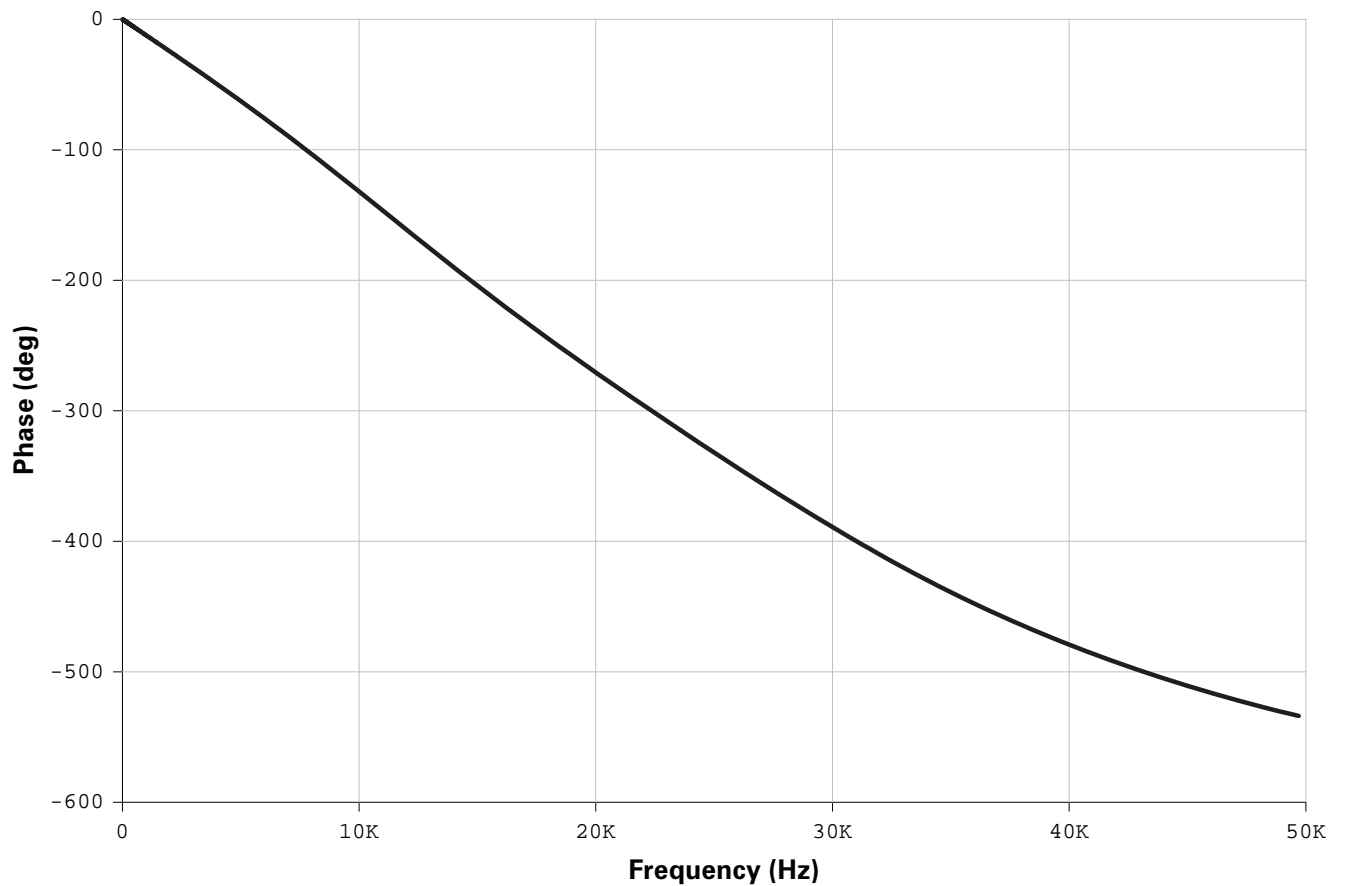
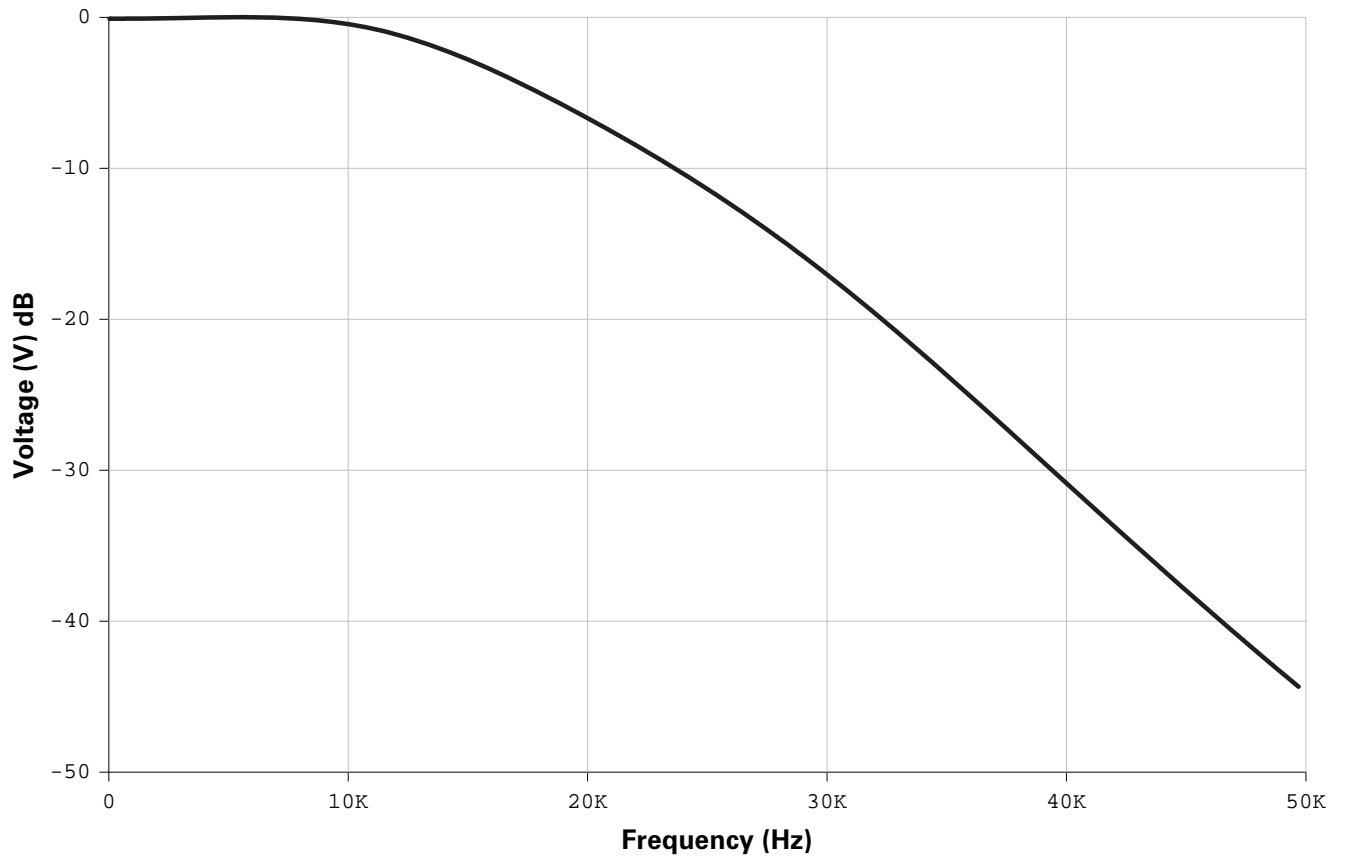
The following pages contain graphs charting the output amplitude and phase against frequency. A separate set of charts are presented for each of the standard bandwidth options (100Hz, 1kHz, 10kHz, 15kHz).

The charts are presented in linear and logarithmic scales.

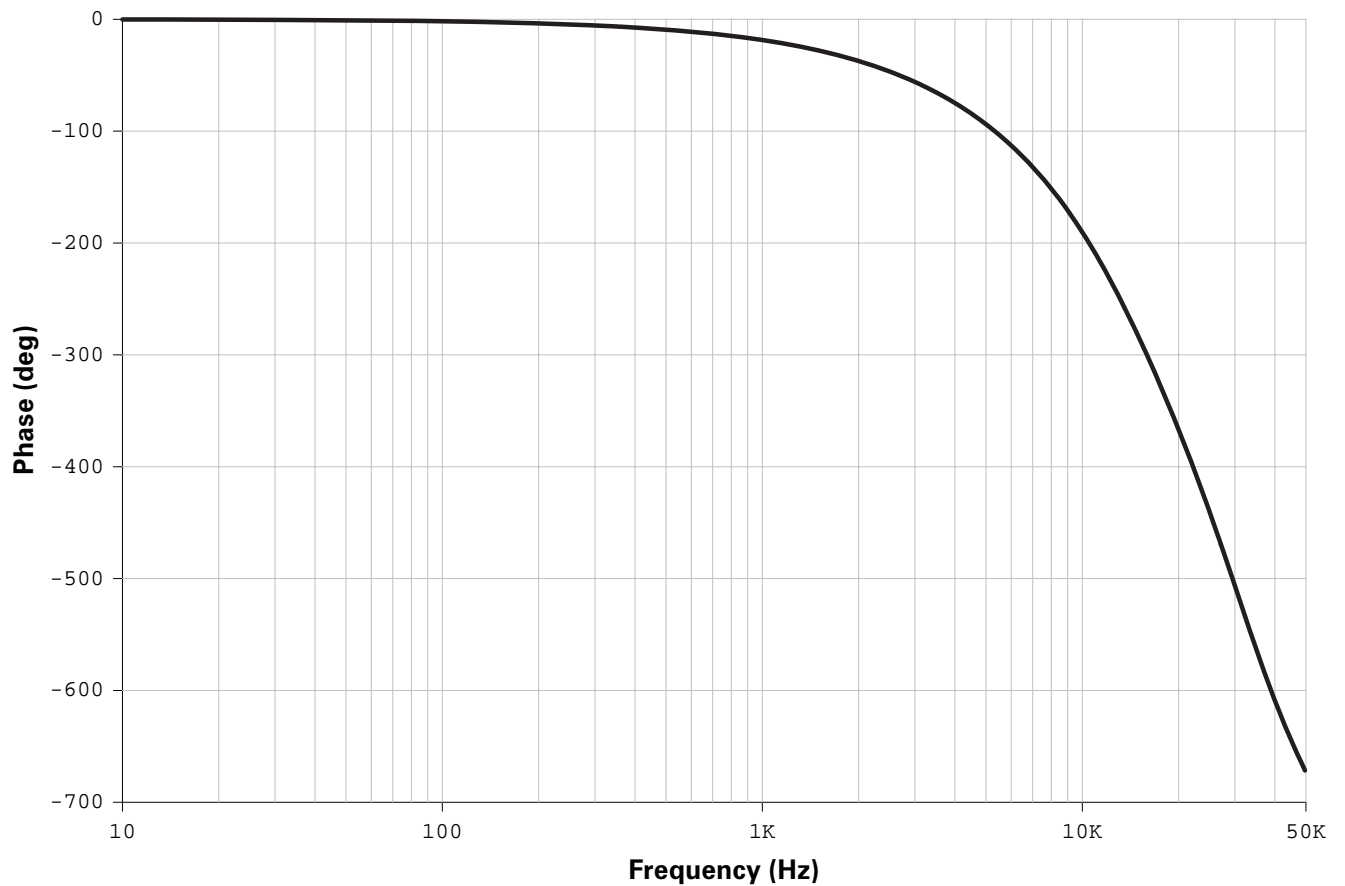
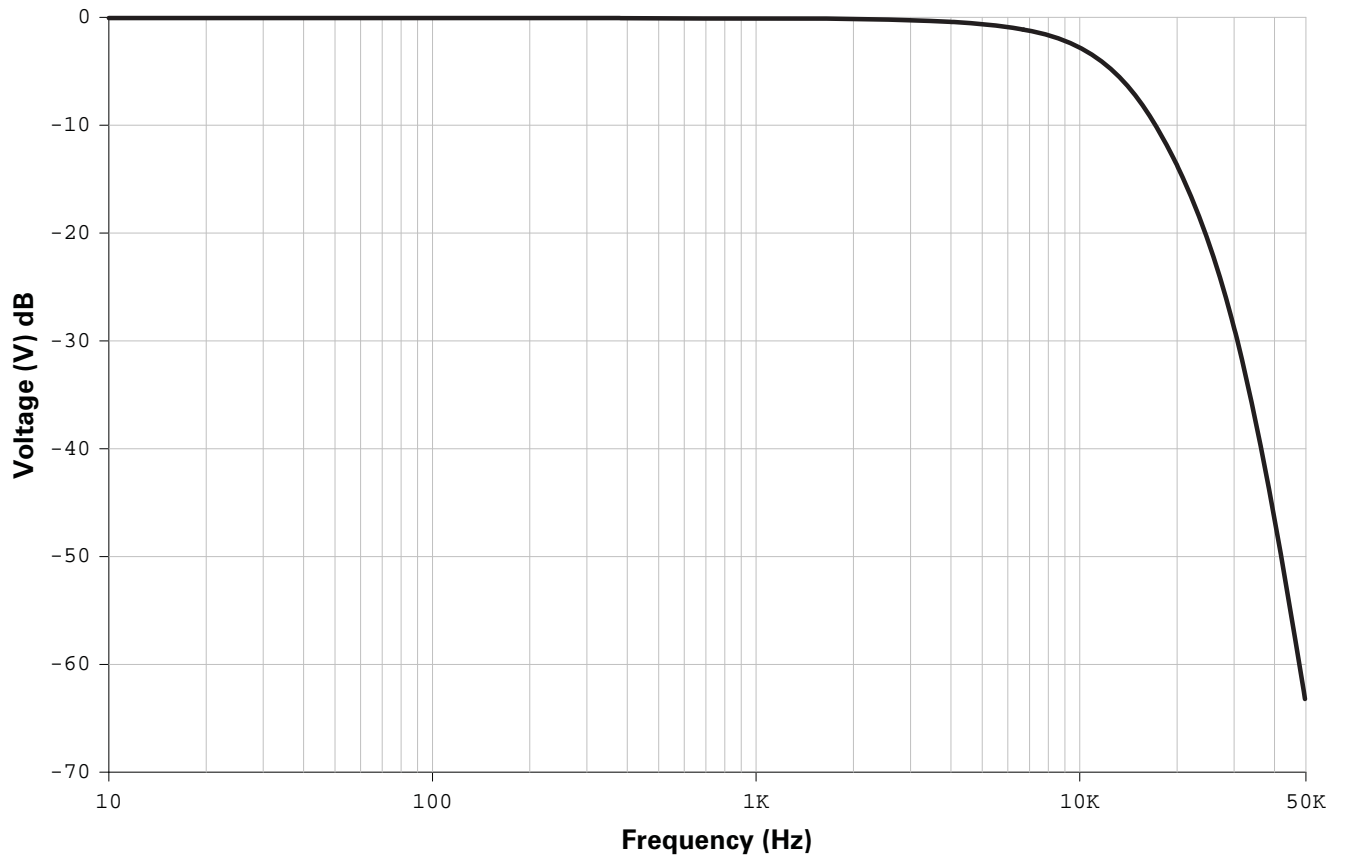
15kHz (Logarithmic)



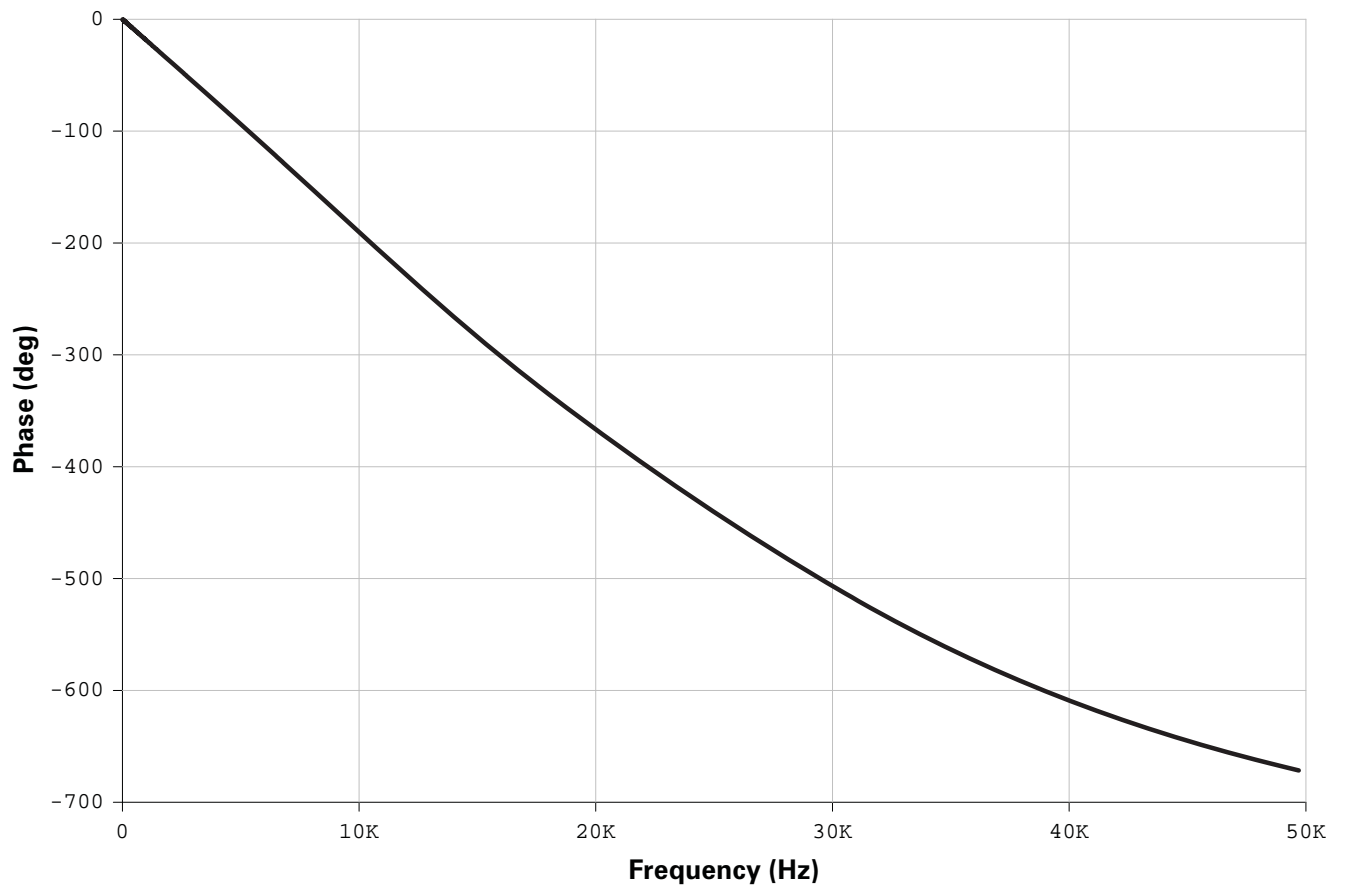
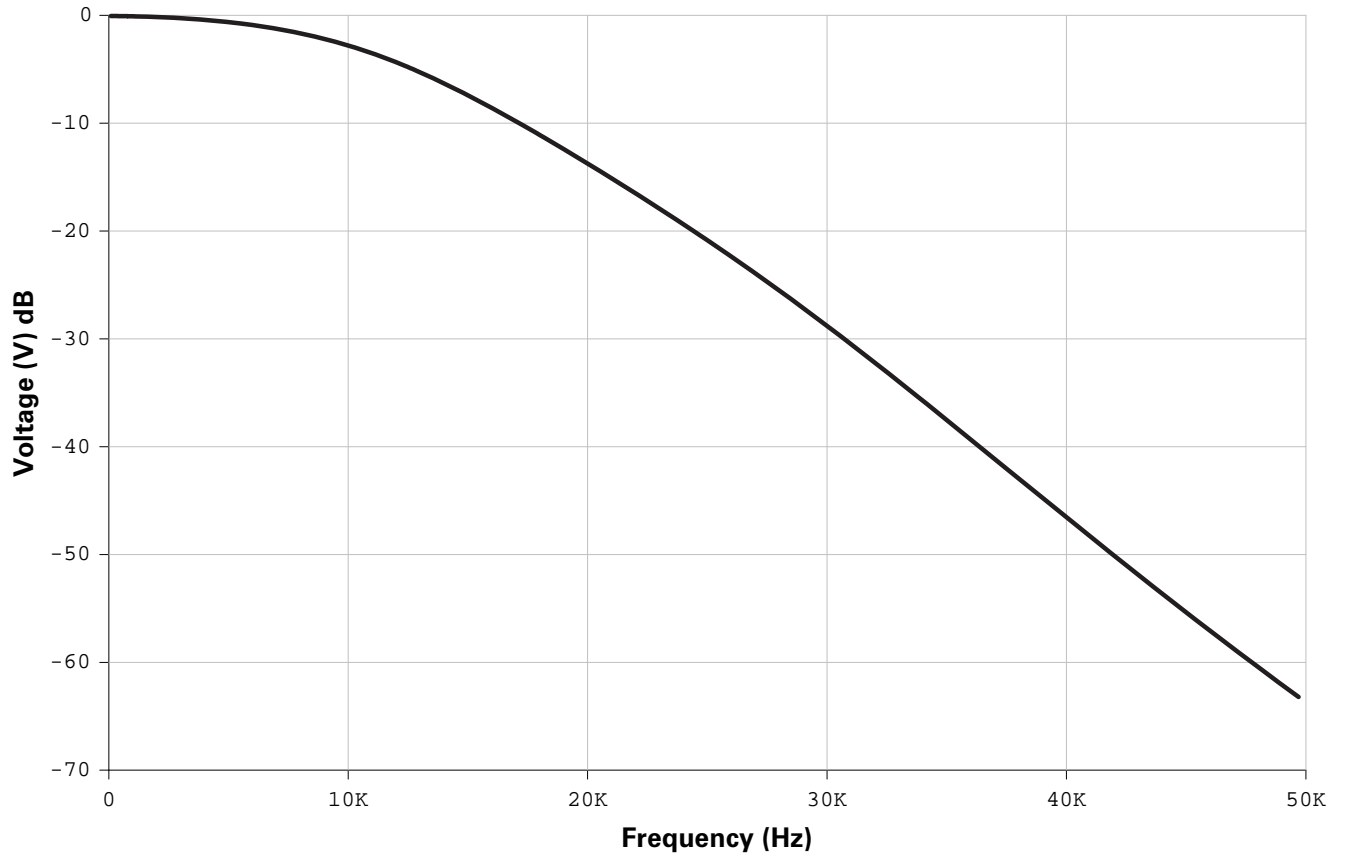
15kHz (Linear)



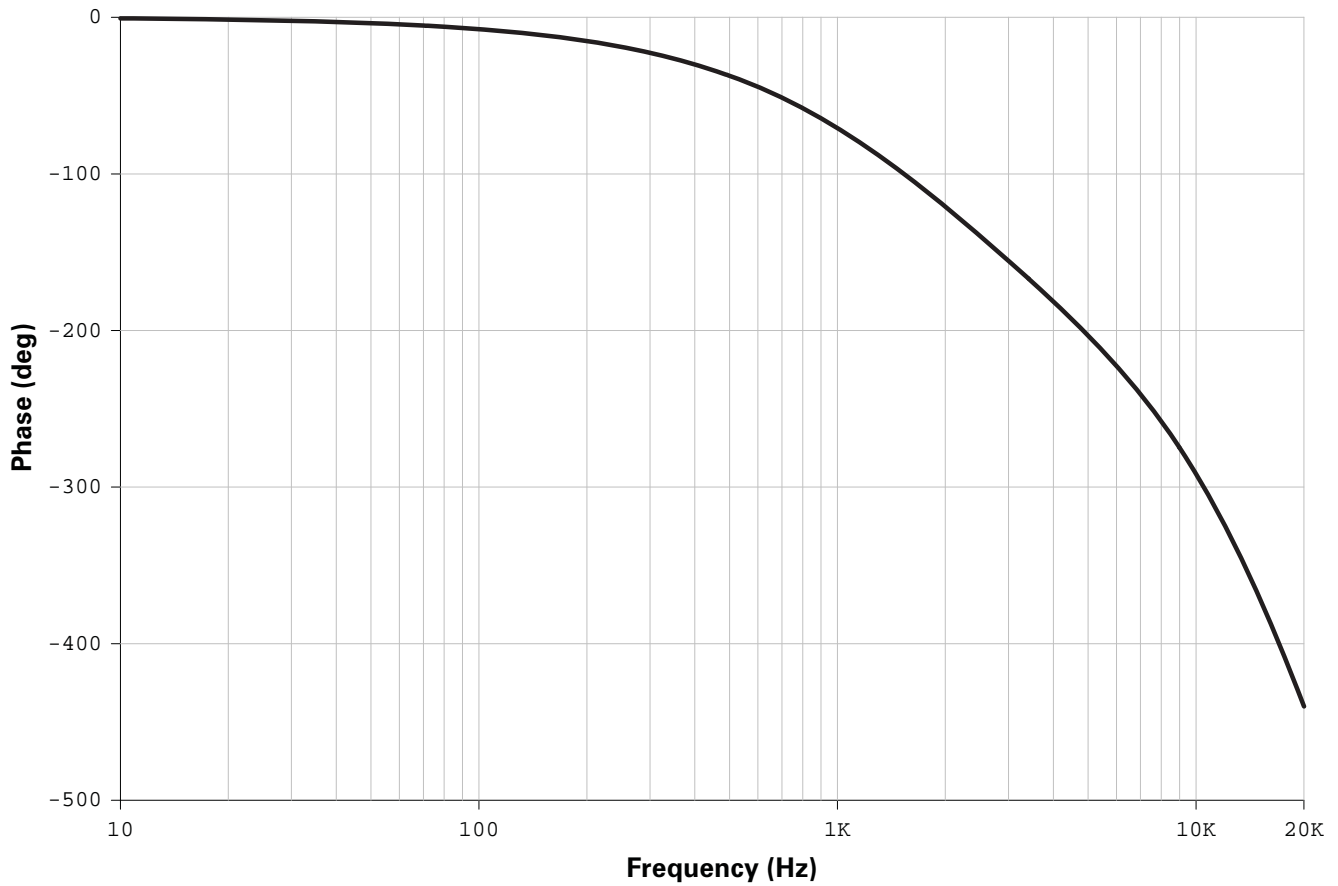
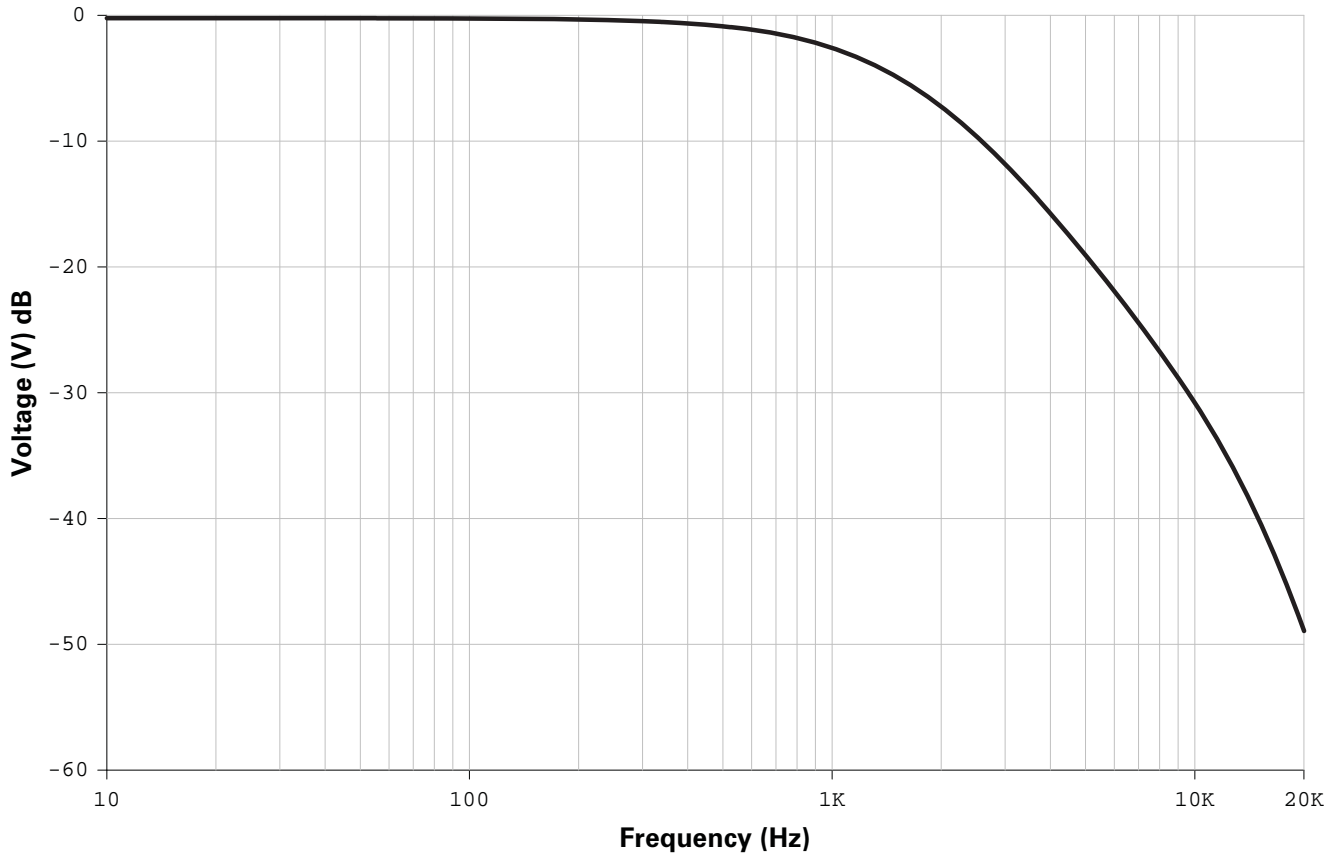
10kHz (Logarithmic)



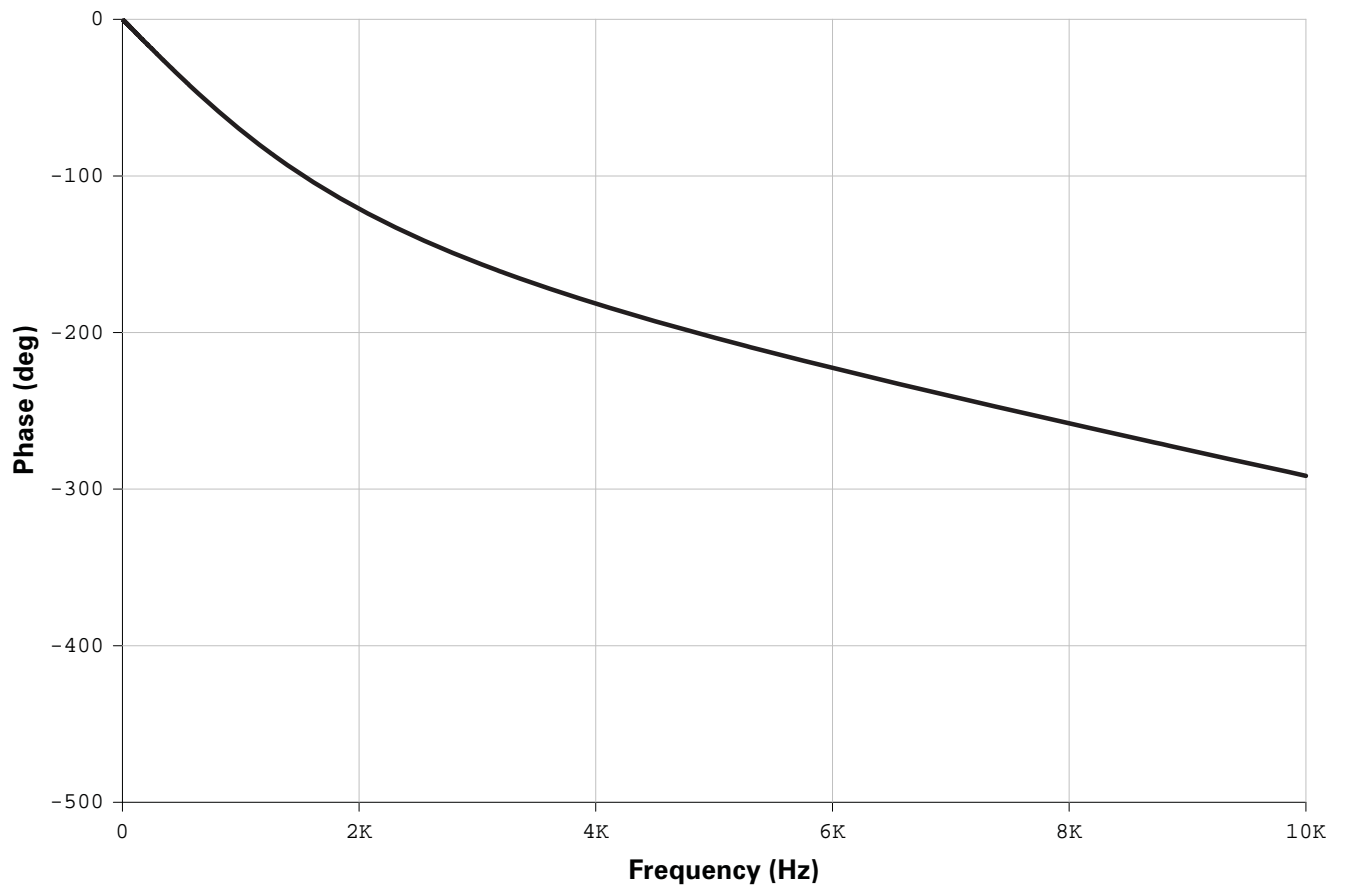
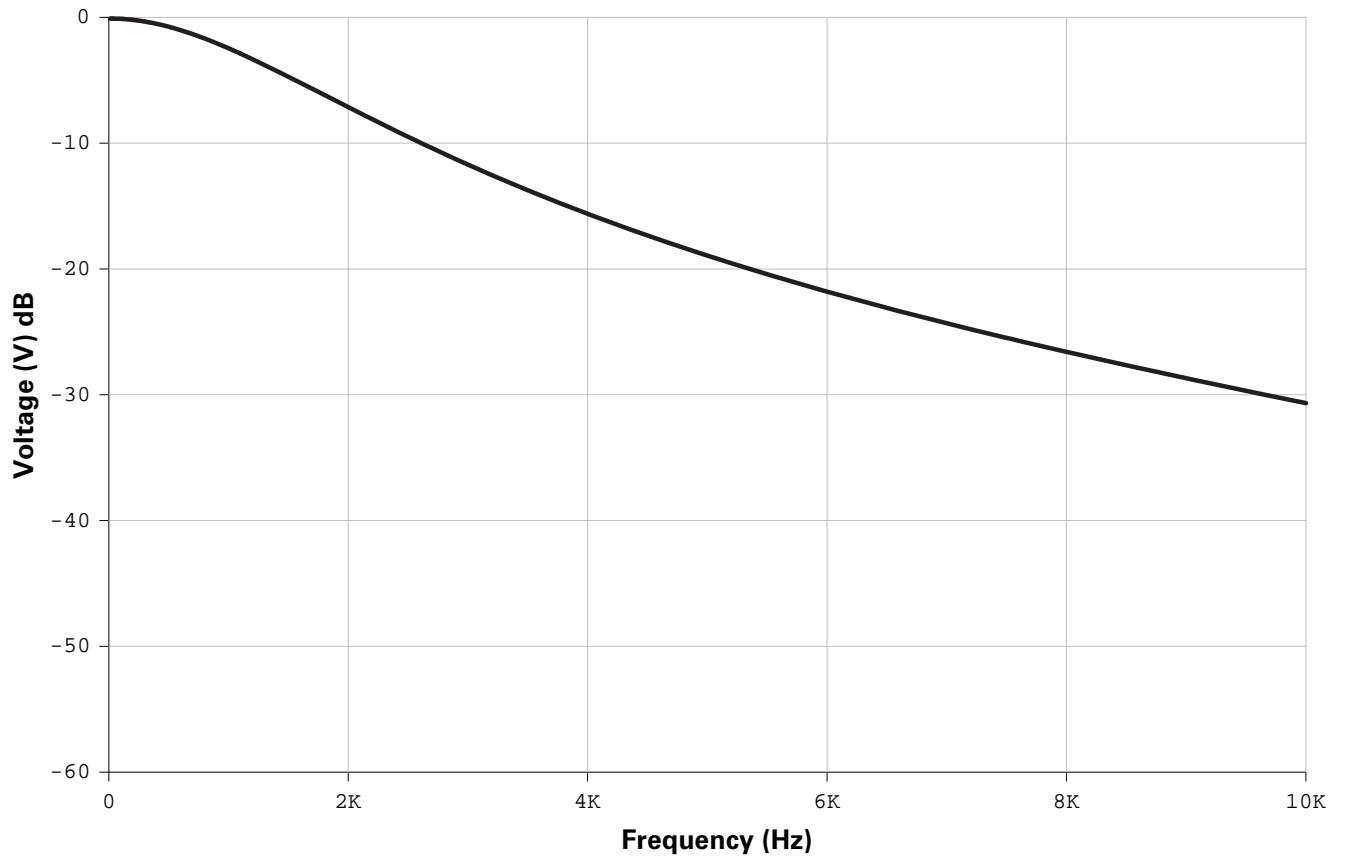
10kHz (Linear)



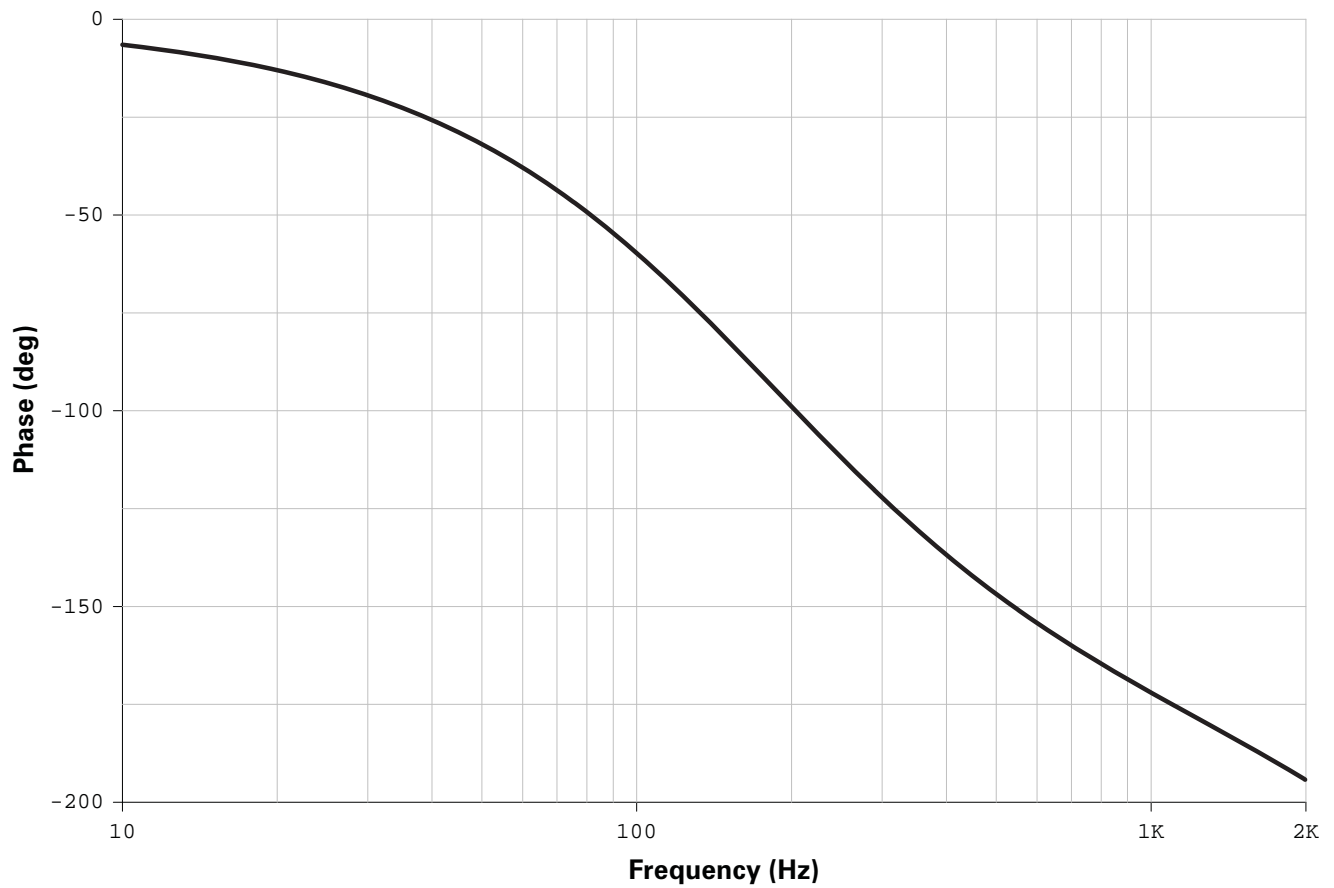
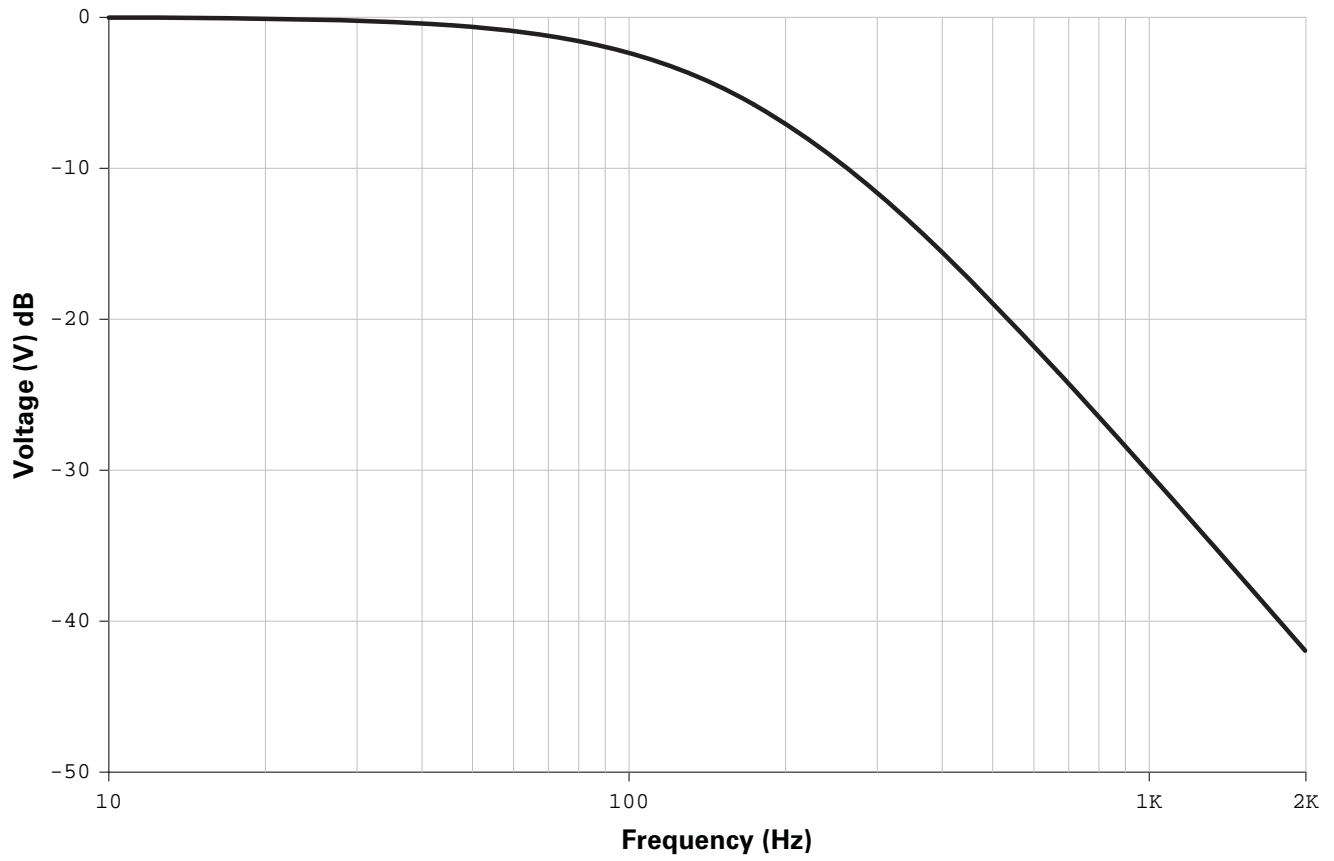
1kHz (Logarithmic)



1kHz (Linear)



100Hz (Logarithmic)



100Hz (Linear)

