Class-D LC Filter Designer

1 Class-D Configuration

Select the output configuration on the right.

Filter Type	Common Mode
Output Configuration	BTL
Load Factor	0,5

Enter the speaker load, desired cutoff frequency, and quality factor.

Speaker Load (R_{Load})	4	Ω
Cutoff Frequency	40	kHz
Quality Factor (Q)	0,707	

2 Calculated Components

The calculated LC filter component values are shown below.

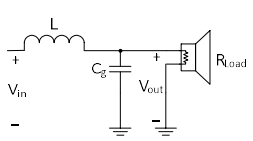
Inductor (L)	11,26	uH
Capacitor (C_g)	1,407	uF
Capacitor (C_{BTL})		uF
Total Cap SE Equivalent	1,407	uF

3 Graph & Verify

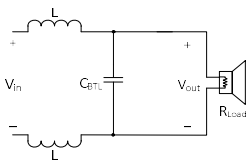
Enter standard inductor and capacitor values below to graph & verify.

Inductor (L)	12,22	uH
Capacitor (C_g)	1,005	uF
Capacitor (C_{BTL})		uF
Total Cap SE Equivalent	1,005	uF
Cut-Off Frequency	45,4	kHz
Quality Factor (Q)	0,574	

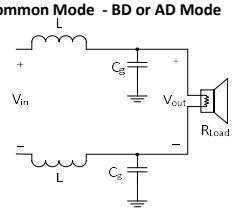
Single-Ended (SE) - AD or BD



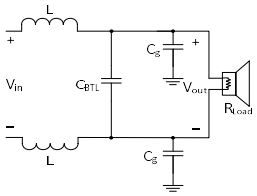
BTL - Differential - AD Mode



BTL - Common Mode - BD or AD Mode



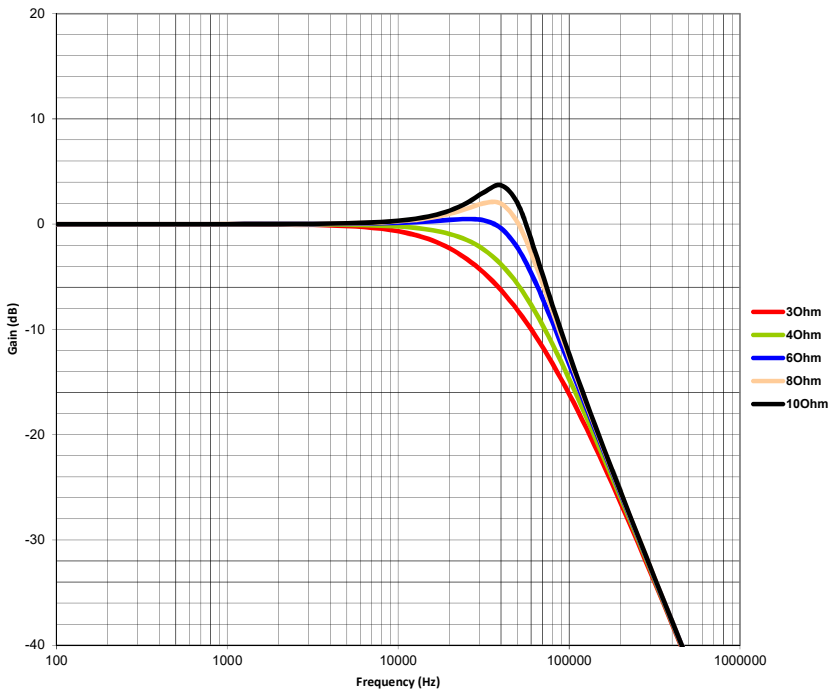
BTL - Hybrid - AD Mode



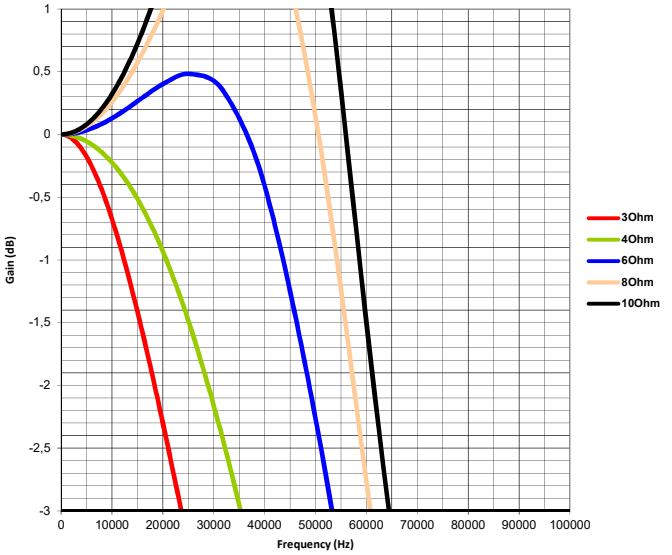
Transfer Function

$$\frac{1}{1 + s \cdot \frac{L}{R_{Load}} + L \cdot C \cdot s^2}$$

Gain vs Frequency



Zoom (Gain vs Frequency)



Graph Settings

Enter up to 5 different loads to graph.

			Q
Load 1	3	Ω	0,430
Load 2	4	Ω	0,574
Load 3	6	Ω	0,860
Load 4	8	Ω	1,147
Load 5	10	Ω	1,434