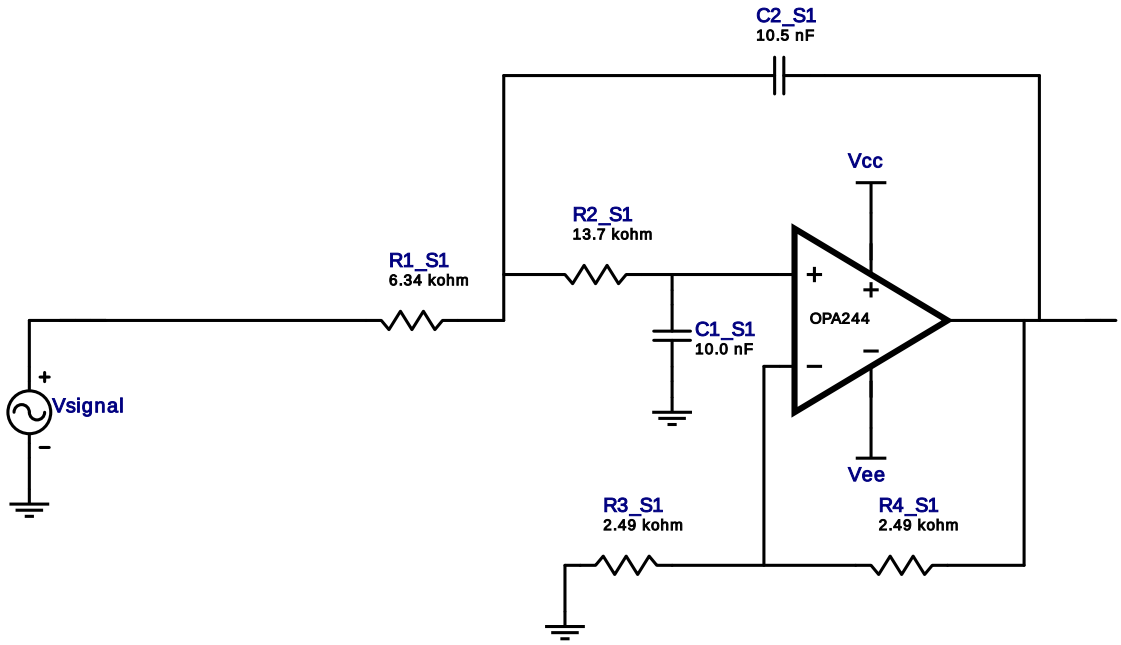
Type : Lowpass
Response : Butterworth
Order : 2
Number of Stages : 1

Filter Design Report

Design : Lowpass Filter - 2nd order Butterworth
Design ID: 9

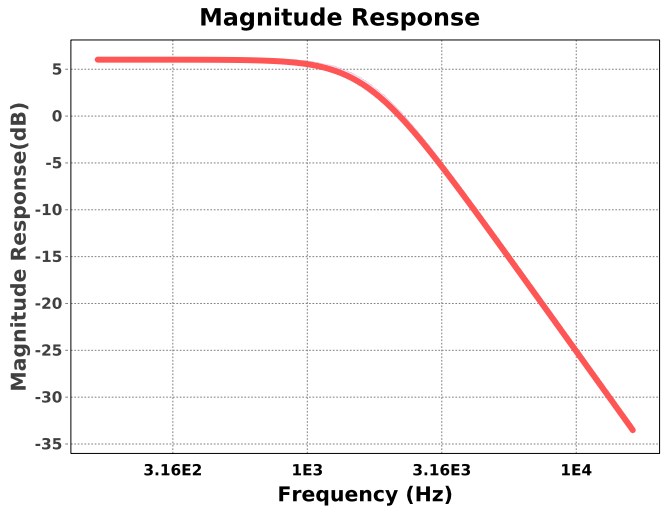


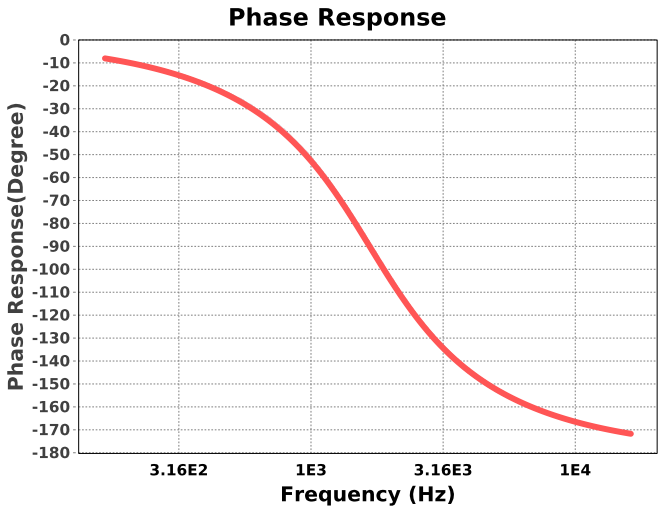
Electrical BOM

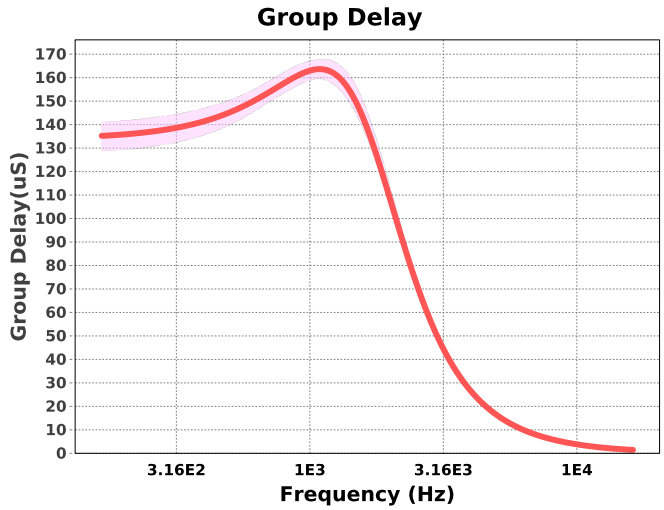
#	Name	Manufacturer	Part Number	Properties	Qty
1.	A1_S1	Texas Instruments Inc.	OPA244	GbwTyp= 0.43MHz VccMax= 36V VccMin= 2.2V	1
2.	C1_S1	Generic	Ideal	Cap= 10.0 nF Tolerance= 2.0 %	1
3.	C2_S1	Generic	Ideal	Cap= 10.5 nF Tolerance= 2.0 %	1
4.	R1_S1	Generic	Ideal	Res= 6340.0ohm Tolerance= 1%	1
5.	R2_S1	Generic	Ideal	Res= 13700.0ohm Tolerance= 1%	1
6.	R3_S1	Generic	Ideal	Res= 2490.0ohm Tolerance= 1%	1
7.	R4_S1	Generic	Ideal	Res= 2490.0ohm Tolerance= 1%	1

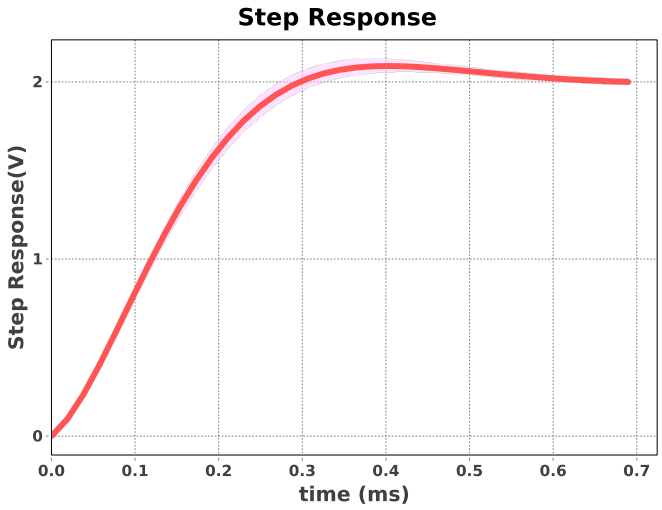
Sensitivity Analysis

#	Name	Series	Tolerance
1.	Cap	E48	2%
2.	Res	E96	1%









Design Inputs

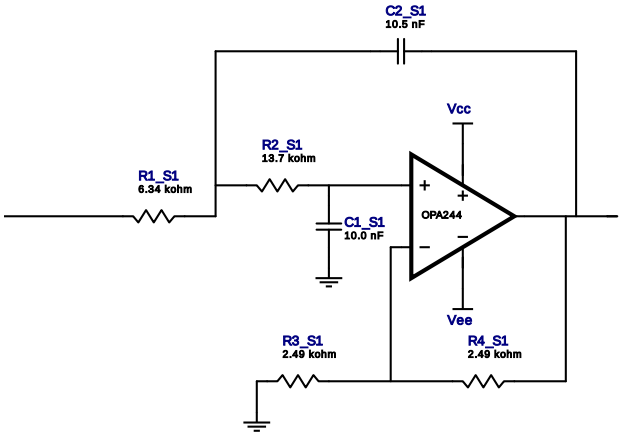
#	Name	Value	Description
1.	FilterType	lowpass	
2.	FilterResponse	Butterworth	
3.	FilterOrder	2.0	
4.	FilterTopology	Sallen-Key	
5.	NumberOfStages	1.0	
6.	PassbandFrequency	1.661 k	
7.	StopbandAttenuation	-38.922	
8.	StopbandFrequency	15.61 k	
9.	Gain	2.0	
10.	DualSupply	+/-5.00 V	Power supply(s) to active chips
11.	ResistorTolerance	E96	Resistor series - 1% Passive resistor tolerance
12.	CapacitorTolerance	E48	Capacitor series - 2% Passive capacitor tolerance

Design Assistance

1. **OPA244** Product Folder : http://www.ti.com/product/OPA244 : contains the data sheet and other resources.

Filter Stage :1

Cutoff Frequency	1.667 kHz
Min GBW Reqd	234.899 kHz
Stage Gain	2.0 V/V
Stage Q	713.586 m
Stage Topology	Sallen-Key



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#	Name	Manufacturer	Part Number	Properties	Qty
7.	R4_S1	Generic	Ideal	Res= 2490.0ohm Tolerance= 1%	1