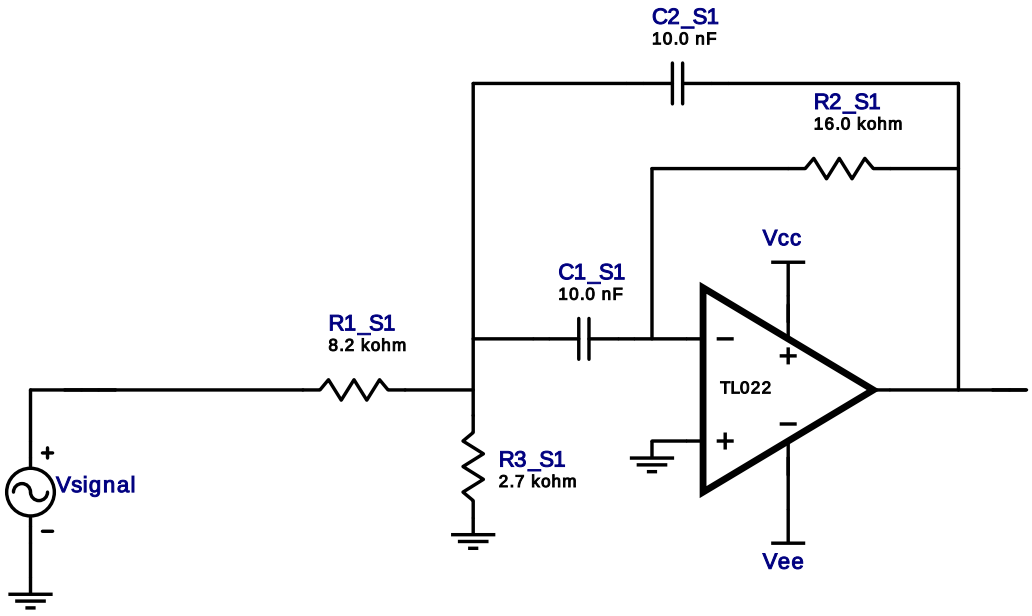
Type : Bandpass
Response : Butterworth
Order : 2
Number of Stages : 1

Filter Design Report

Design : Bandpass Filter - 2nd order Butterworth
Design ID: 16

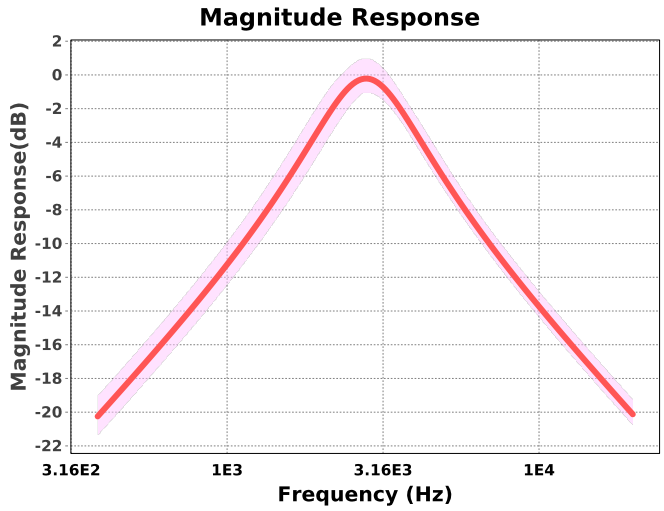


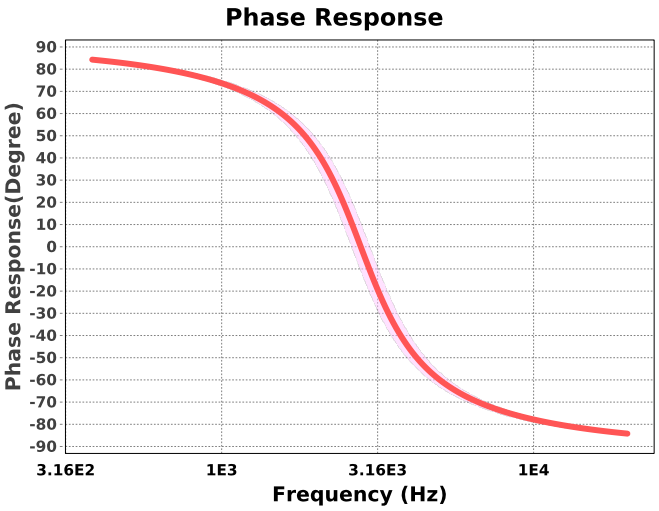
Electrical BOM

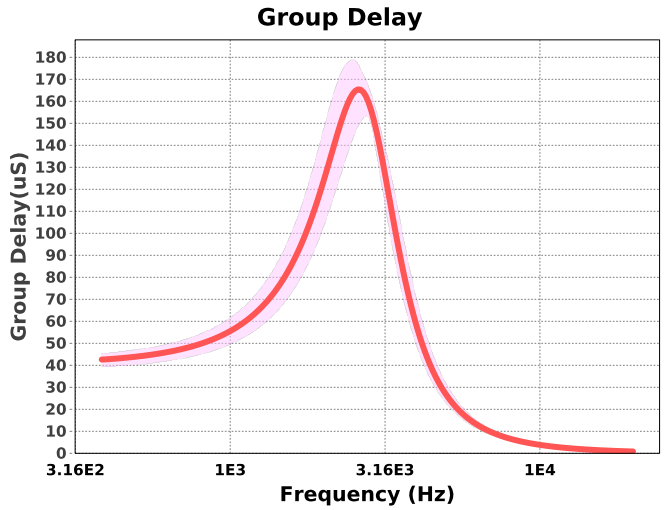
#	Name	Manufacturer	Part Number	Properties	Qty
1.	A1_S1	Texas Instruments Inc.	TL022	GbwTyp= 0.5MHz VccMax= 30V VccMin= 10V	1
2.	C1_S1	Generic	Ideal	Cap= 10.0 nF Tolerance= 5.0 %	1
3.	C2_S1	Generic	Ideal	Cap= 10.0 nF Tolerance= 5.0 %	1
4.	R1_S1	Generic	Ideal	Res= 8200.0ohm Tolerance= 5%	1
5.	R2_S1	Generic	Ideal	Res= 16000.0ohm Tolerance= 5%	1
6.	R3_S1	Generic	Ideal	Res= 2700.0ohm Tolerance= 5%	1

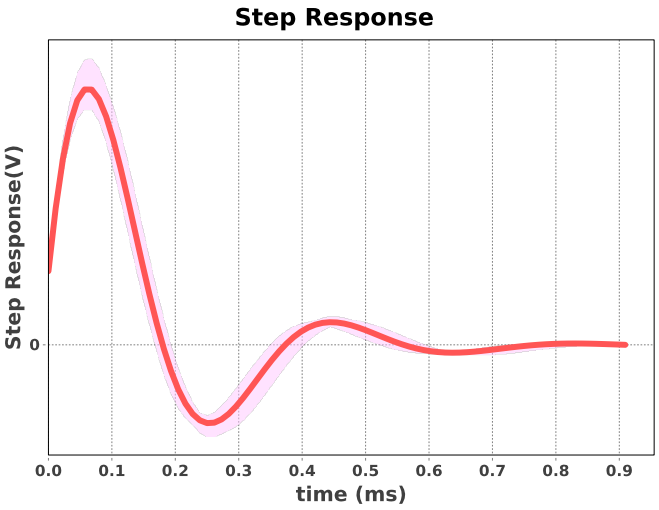
Sensitivity Analysis

#	Name	Series	Tolerance
1.	Cap	E24	5%
2.	Res	E24	5%









Design Inputs

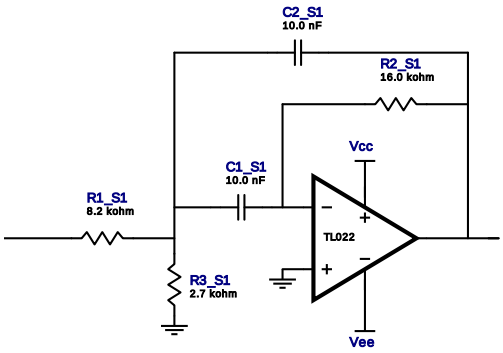
#	Name	Value	Description
1.	FilterType	bandpass	
2.	FilterResponse	Butterworth	
3.	FilterOrder	2.0	
4.	FilterTopology	Multiple Feedback	
5.	NumberOfStages	1.0	
6.	CenterFrequency	2.8 k	
7.	StopbandAttenuation	-14.15	
8.	PassbandBandwidth	2.0 k	
9.	StopbandBandwidth	10.0 k	
10.	Gain	1.0	
11.	DualSupply	+/-15.00 V	Power supply(s) to active chips
12.	ResistorTolerance	E24	Resistor series - 5% Passive resistor tolerance
13.	CapacitorTolerance	E24	Capacitor series - 5% Passive capacitor tolerance

Design Assistance

1. **TL022** Product Folder : http://www.ti.com/product/TL022 : contains the data sheet and other resources.

Filter Stage :1

Cutoff Frequency	2.792 kHz
Min GBW Reqd	392.0 kHz
Stage Gain	975.61 mV/V
Stage Q	1.403
Stage Topology	Multiple Feedback



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