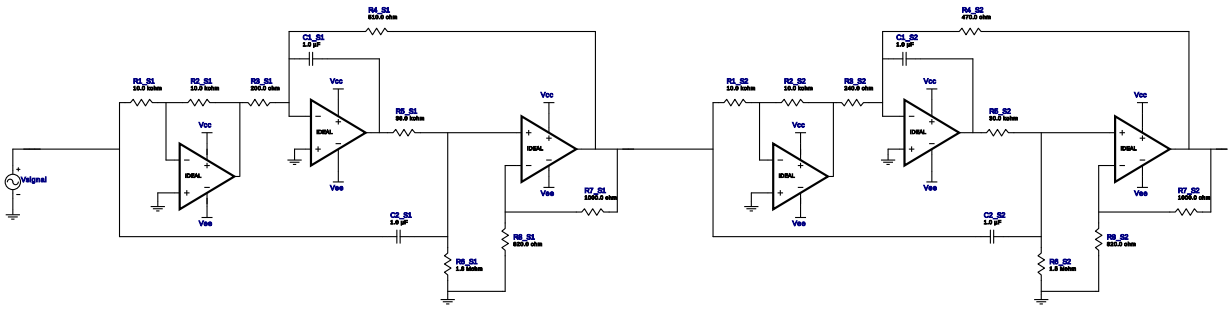
Type : Bandstop
Response : Chebyshev
Order : 4
Number of Stages : 2

Filter Design Report

Design : Bandstop Filter - 4th order Chebyshev
Design ID: 8



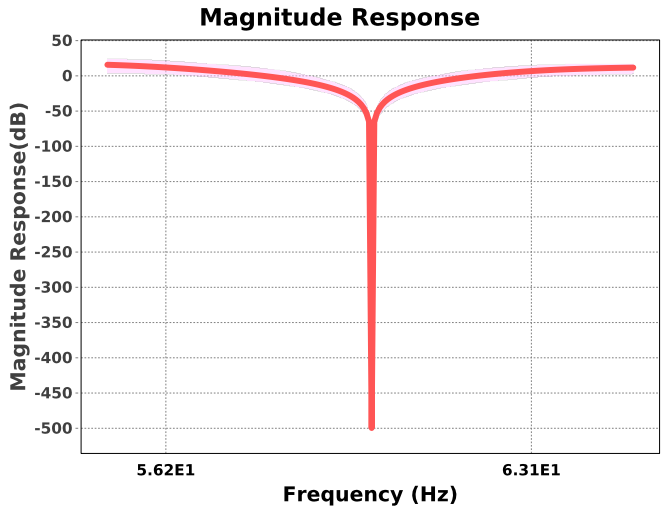
Electrical BOM

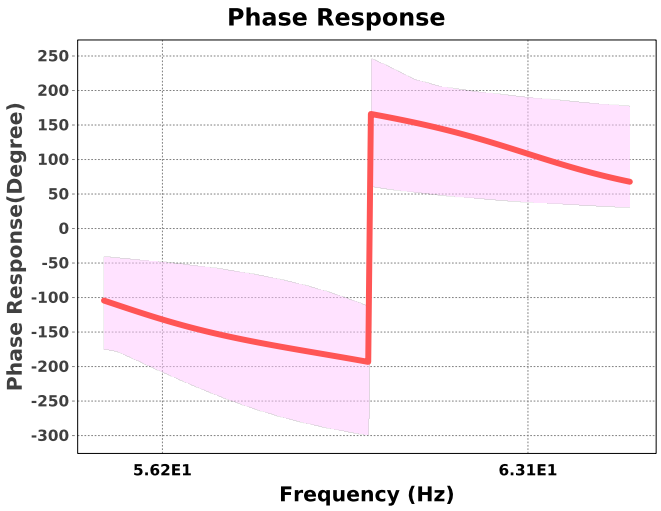
#	Name	Manufacturer	Part Number	Properties	Qty
1.	A1_S1	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
2.	A1_S2	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
3.	A2_S1	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
4.	A2_S2	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
5.	A3_S1	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
6.	A3_S2	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
7.	C1_S1	Generic	Ideal	Cap= 1.0 uF Tolerance= 10.0 %	1
8.	C1_S2	Generic	Ideal	Cap= 1.0 uF Tolerance= 10.0 %	1
9.	C2_S1	Generic	Ideal	Cap= 1.0 uF Tolerance= 10.0 %	1
10.	C2_S2	Generic	Ideal	Cap= 1.0 uF Tolerance= 10.0 %	1
11.	R1_S1	Generic	Ideal	Res= 10000.0ohm Tolerance= 5%	1
12.	R1_S2	Generic	Ideal	Res= 10000.0ohm Tolerance= 5%	1
13.	R2_S1	Generic	Ideal	Res= 10000.0ohm Tolerance= 5%	1
14.	R2_S2	Generic	Ideal	Res= 10000.0ohm Tolerance= 5%	1
15.	R3_S1	Generic	Ideal	Res= 200.0ohm Tolerance= 5%	1

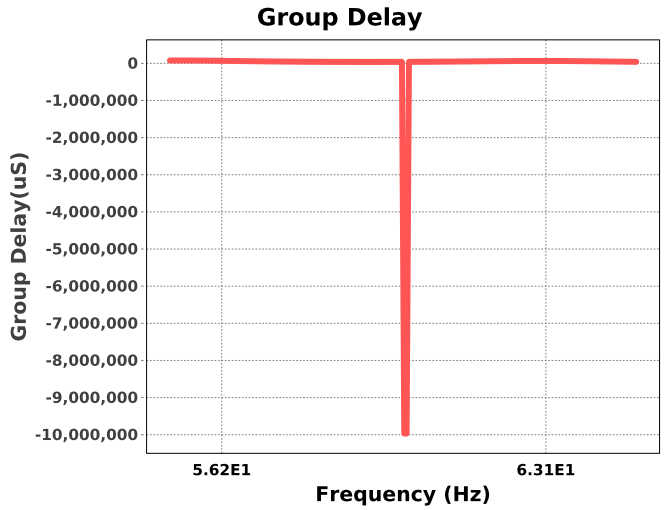
#	Name	Manufacturer	Part Number	Properties	Qty
16.	R3_S2	Generic	Ideal	Res= 240.0ohm Tolerance= 5%	1
17.	R4_S1	Generic	Ideal	Res= 510.0ohm Tolerance= 5%	1
18.	R4_S2	Generic	Ideal	Res= 470.0ohm Tolerance= 5%	1
19.	R5_S1	Generic	Ideal	Res= 36000.0ohm Tolerance= 5%	1
20.	R5_S2	Generic	Ideal	Res= 30000.0ohm Tolerance= 5%	1
21.	R6_S1	Generic	Ideal	Res= 1800000.0ohm Tolerance= 5%	1
22.	R6_S2	Generic	Ideal	Res= 1500000.0ohm Tolerance= 5%	1
23.	R7_S1	Generic	Ideal	Res= 1000.0ohm Tolerance= 5%	1
24.	R7_S2	Generic	Ideal	Res= 1000.0ohm Tolerance= 5%	1
25.	R8_S1	Generic	Ideal	Res= 820.0ohm Tolerance= 5%	1
26.	R8_S2	Generic	Ideal	Res= 820.0ohm Tolerance= 5%	1

Sensitivity Analysis

#	Name	Series	Tolerance
1.	Cap	E12	10%
2.	Res	E24	5%







Design Inputs

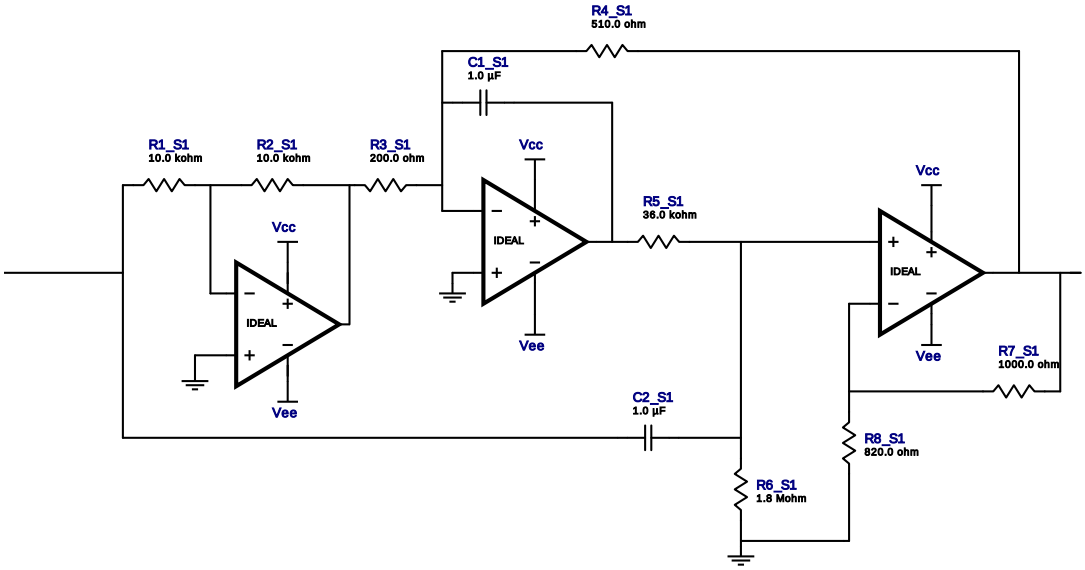
#	Name	Value	Description
1.	FilterType	bandstop	
2.	FilterResponse	Chebyshev	
3.	FilterOrder	4.0	
4.	FilterTopology	Bainter	
5.	NumberOfStages	2.0	
6.	CenterFrequency	60.0	
7.	StopbandAttenuation	-39.109	
8.	PassbandBandwidth	10.0	
9.	StopbandBandwidth	1.0	
10.	Gain	5.0	
11.	SingleSupply	9.0	Power supply(s) to active chips
12.	ResistorTolerance	E24	Resistor series - 5% Passive resistor tolerance
13.	CapacitorTolerance	E12	Capacitor series - 10% Passive capacitor tolerance

Design Assistance

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

Filter Stage :1

Cutoff Frequency	55.337 Hz
Min GBW Reqd	151.463 kHz
Stage Gain	2.22 V/V
Stage Q	12.271
Stage Topology	Bainter

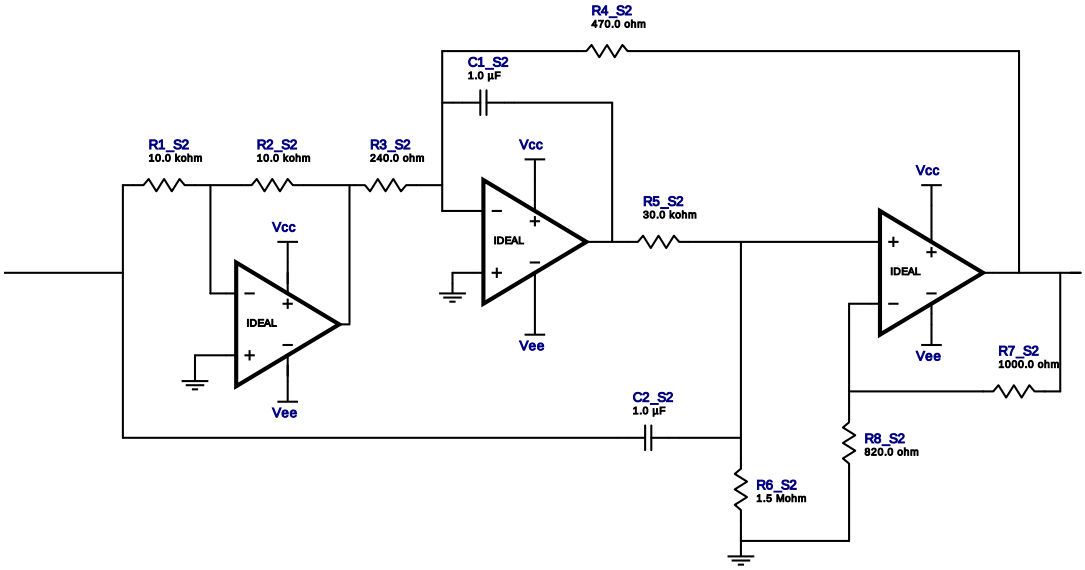


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty
1.	A1_S1	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
2.	A2_S1	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
3.	A3_S1	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
4.	C1_S1	Generic	Ideal	Cap= 1.0 uF Tolerance= 10.0 %	1
5.	C2_S1	Generic	Ideal	Cap= 1.0 uF Tolerance= 10.0 %	1
6.	R1_S1	Generic	Ideal	Res= 10000.0ohm Tolerance= 5%	1
7.	R2_S1	Generic	Ideal	Res= 10000.0ohm Tolerance= 5%	1
8.	R3_S1	Generic	Ideal	Res= 200.0ohm Tolerance= 5%	1
9.	R4_S1	Generic	Ideal	Res= 510.0ohm Tolerance= 5%	1
10.	R5_S1	Generic	Ideal	Res= 36000.0ohm Tolerance= 5%	1
11.	R6_S1	Generic	Ideal	Res= 1800000.0ohm Tolerance= 5%	1
12.	R7_S1	Generic	Ideal	Res= 1000.0ohm Tolerance= 5%	1
13.	R8_S1	Generic	Ideal	Res= 820.0ohm Tolerance= 5%	1

Filter Stage :2

Cutoff Frequency	63.145 Hz
Min GBW Reqd	173.412 kHz
Stage Gain	2.22 V/V
Stage Q	11.669
Stage Topology	Bainter



Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty
1.	A1_S2	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
2.	A2_S2	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
3.	A3_S2	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
4.	C1_S2	Generic	Ideal	Cap= 1.0 uF Tolerance= 10.0 %	1
5.	C2_S2	Generic	Ideal	Cap= 1.0 uF Tolerance= 10.0 %	1
6.	R1_S2	Generic	Ideal	Res= 10000.0ohm Tolerance= 5%	1
7.	R2_S2	Generic	Ideal	Res= 10000.0ohm Tolerance= 5%	1
8.	R3_S2	Generic	Ideal	Res= 240.0ohm Tolerance= 5%	1
9.	R4_S2	Generic	Ideal	Res= 470.0ohm Tolerance= 5%	1
10.	R5_S2	Generic	Ideal	Res= 30000.0ohm Tolerance= 5%	1
11.	R6_S2	Generic	Ideal	Res= 1500000.0ohm Tolerance= 5%	1
12.	R7_S2	Generic	Ideal	Res= 1000.0ohm Tolerance= 5%	1

#	Name	Manufacturer	Part Number	Properties	Qty
13.	R8_S2	Generic	Ideal	Res= 820.0ohm Tolerance= 5%	1