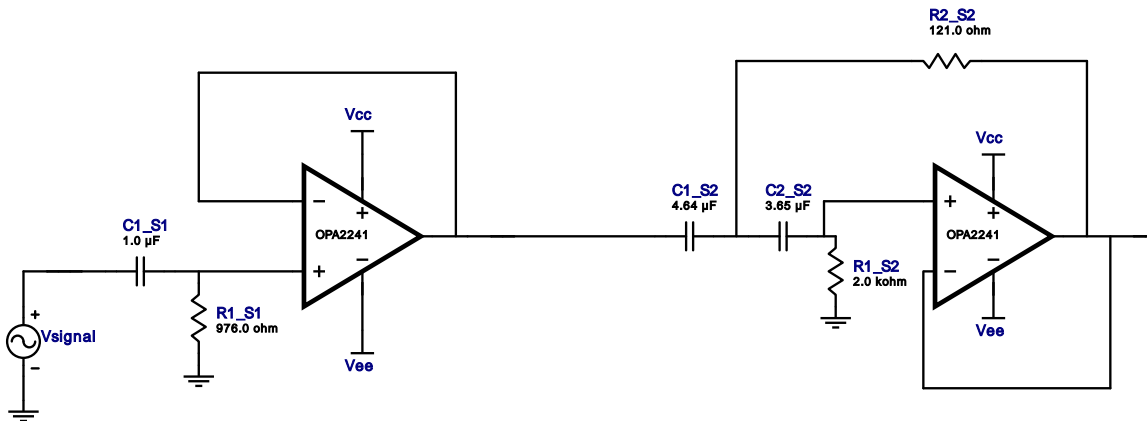


Type : Highpass
 Response : Chebyshev
 Order : 3
 Number of Stages : 2

Filter Design Report

Design : Highpass Filter - 3rd order Chebyshev
 Design ID: 18

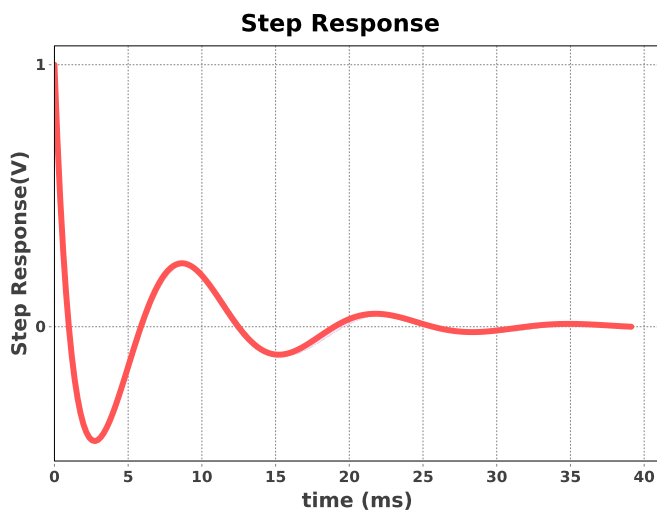
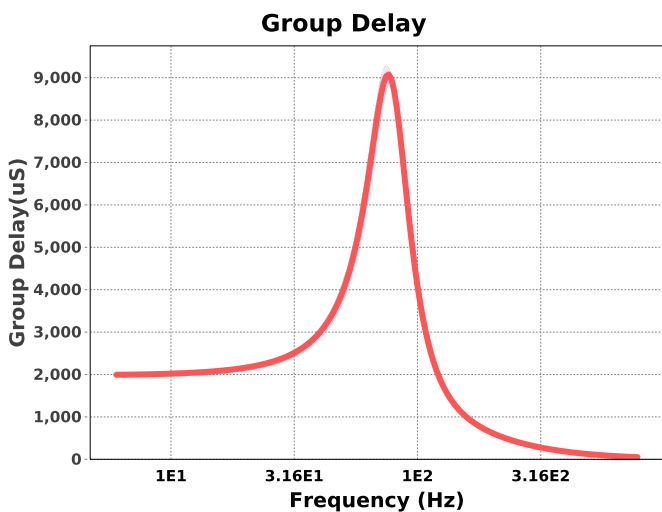
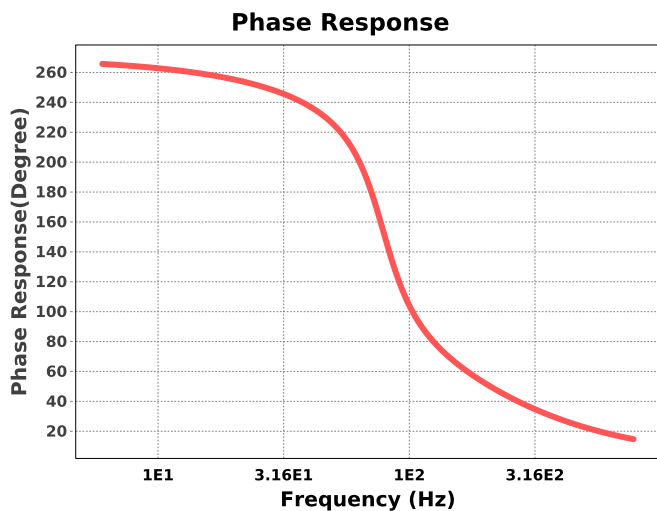
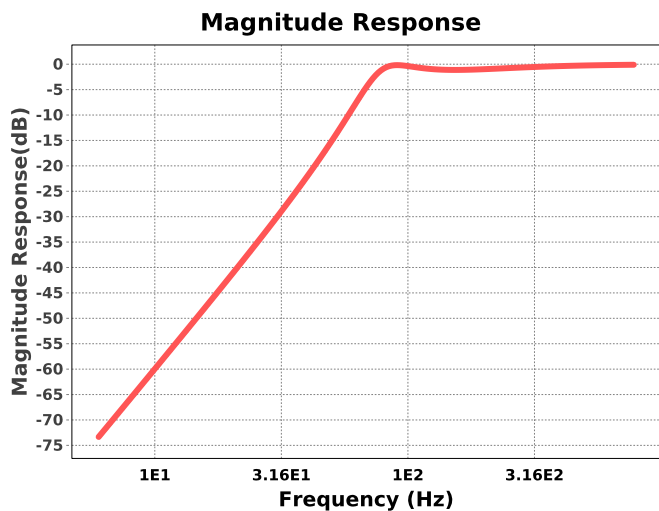


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty
1.	A1_S1	Texas Instruments Inc.	OPA2241	GbwTyp= 0.035MHz VccMax= 36V VccMin= 2.7V	1
2.	A1_S2	Texas Instruments Inc.	OPA2241	GbwTyp= 0.035MHz VccMax= 36V VccMin= 2.7V	1
3.	C1_S1	Generic	Ideal	Cap= 1.0 uF Tolerance= 2.0 %	1
4.	C1_S2	Generic	Ideal	Cap= 4.64 uF Tolerance= 2.0 %	1
5.	C2_S2	Generic	Ideal	Cap= 3.65 uF Tolerance= 2.0 %	1
6.	R1_S1	Generic	Ideal	Res= 976.0ohm Tolerance= 1%	1
7.	R1_S2	Generic	Ideal	Res= 2000.0ohm Tolerance= 1%	1
8.	R2_S2	Generic	Ideal	Res= 121.0ohm Tolerance= 1%	1

Sensitivity Analysis

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



Design Inputs

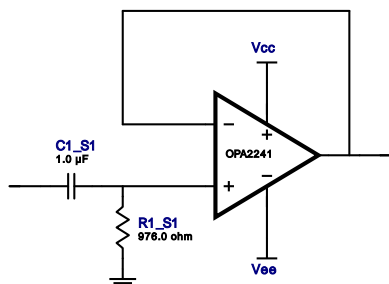
#	Name	Value	Description
1.	FilterType	highpass	
2.	FilterResponse	Chebyshev	
3.	FilterOrder	3.0	
4.	FilterTopology	Single Pole	
5.	NumberOfStages	2.0	
6.	PassbandFrequency	80.0	
7.	StopbandAttenuation	-9.436	
8.	StopbandFrequency	60.0	
9.	Gain	1.0	
10.	DualSupply	+/-5.00 V	Power supply(s) to active chips
11.	ResistorTolerance	E96	Resistor series - 1% Passive resistor tolerance
12.	CapacitorTolerance	E48	Capacitor series - 2% Passive capacitor tolerance

Design Assistance

1. **OPA2241** Product Folder : <http://www.ti.com/product/OPA2241> : contains the data sheet and other resources.

Filter Stage :1

Cutoff Frequency 163.069 Hz
 Min GBW Req'd 8.094 kHz
 Stage Gain 1.0 V/V
 Stage Q 500.0 m
 Stage Topology Single Pole

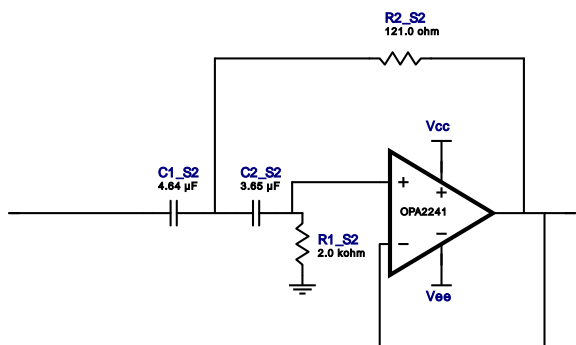


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty
1.	A1_S1	Texas Instruments Inc.	OPA2241	GbwTyp= 0.035MHz VccMax= 36V VccMin= 2.7V	1
2.	C1_S1	Generic	Ideal	Cap= 1.0 uF Tolerance= 2.0 %	1
3.	R1_S1	Generic	Ideal	Res= 976.0ohm Tolerance= 1%	1

Filter Stage :2

Cutoff Frequency 78.615 Hz
 Min GBW Req'd 16.189 kHz
 Stage Gain 1.0 V/V
 Stage Q 2.018
 Stage Topology Sallen-Key



Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty
1.	A1_S2	Texas Instruments Inc.	OPA2241	GbwTyp= 0.035MHz VccMax= 36V VccMin= 2.7V	1
2.	C1_S2	Generic	Ideal	Cap= 4.64 uF Tolerance= 2.0 %	1
3.	C2_S2	Generic	Ideal	Cap= 3.65 uF Tolerance= 2.0 %	1
4.	R1_S2	Generic	Ideal	Res= 2000.0ohm Tolerance= 1%	1
5.	R2_S2	Generic	Ideal	Res= 121.0ohm Tolerance= 1%	1

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