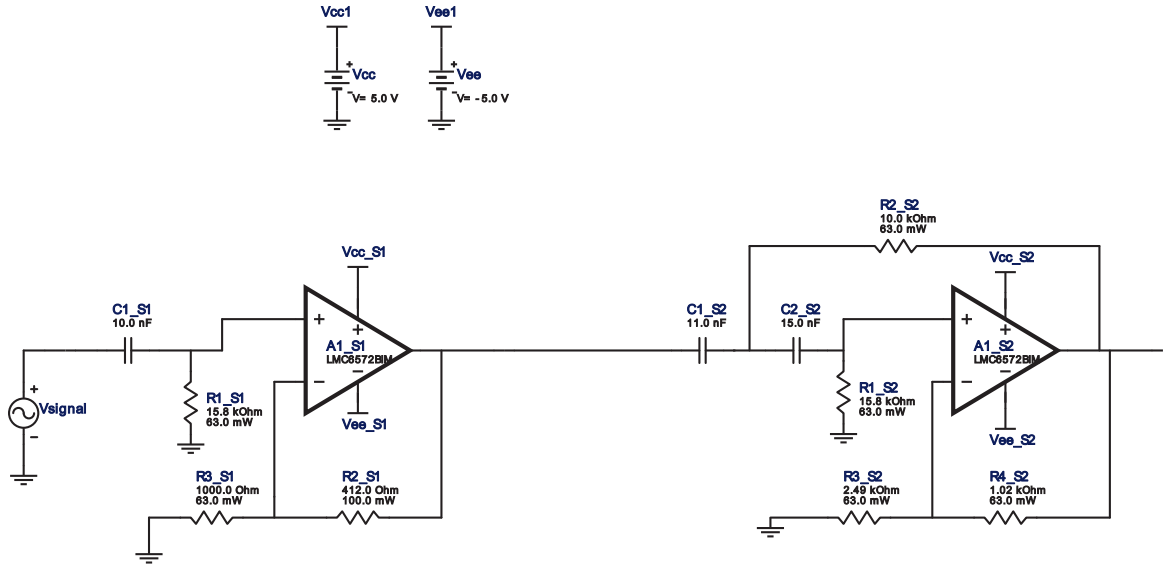


**WEBENCH<sup>®</sup> Design Report**

 Design : 3612920/20 LMC6572BIM  
 Highpass, Sallen Key, Butterworth

**Electrical BOM**

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S1	Texas Instruments	LMC6572BIM	GbwTyp= 220.0 mMHz VccMin= 2.7 V VccMax= 10.0 V	1	\$0.55	SOIC 0 mm <sup>2</sup>
2.	A1_S2	Texas Instruments	LMC6572BIM	GbwTyp= 220.0 mMHz VccMin= 2.7 V VccMax= 10.0 V	1	\$0.55	SOIC 0 mm <sup>2</sup>
3.	C1_S1	Kemet	C0603C103J5RACTU Series= X7R	Cap= 10.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.01	0603 5 mm <sup>2</sup>
4.	C1_S2	Samsung Electro-Mechanics	CL32C113JBHNNNE Series= C0G/NP0	Cap= 11.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.10	1210 15 mm <sup>2</sup>
5.	C2_S2	Kemet	C0603C153G4GAC7867 Series= C0G/NP0	Cap= 15.0 nF VDC= 16.0 V Tolerance= 2.0 %	1	\$0.21	0603 5 mm <sup>2</sup>
6.	R1_S1	Vishay-Dale	CRCW040215K8FKED Series= CRCW..e3	Res= 15.8 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm <sup>2</sup>
7.	R1_S2	Vishay-Dale	CRCW040215K8FKED Series= CRCW..e3	Res= 15.8 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm <sup>2</sup>
8.	R2_S1	Vishay-Dale	CRCW0603412RFKEA Series= CRCW..e3	Res= 412.0 Ohm Power= 100.0 mW Tolerance= 1.0%	1	\$0.01	0603 5 mm <sup>2</sup>
9.	R2_S2	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm <sup>2</sup>
10.	R3_S1	Vishay-Dale	CRCW04021K00FKED Series= CRCW..e3	Res= 1000.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm <sup>2</sup>

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
11.	R3_S2	Vishay-Dale	CRCW04022K49FKED Series= CRCW..e3	Res= 2.49 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm <sup>2</sup>
12.	R4_S2	Vishay-Dale	CRCW04021K02FKED Series= CRCW..e3	Res= 1.02 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm <sup>2</sup>

## Design Inputs

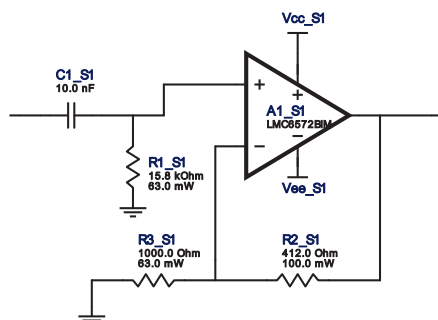
#	Name	Value	Description
1.	FilterType	Highpass	
2.	FilterResponse	Butterworth	
3.	FilterOrder	3.0	
4.	FilterTopology	Sallen_Key	
5.	NumberOfStages	2.0	
6.	PassbandFrequency	1,000.0	
7.	StopbandAttenuation	-6.0	
8.	StopbandFrequency	800.0	
9.	Gain	2.0	
10.	DualSupply	+/-5.0 V	Power supply(s) to active chips
11.	ResistorTolerance	E96	Resistor series - 1% Passive resistor tolerance
12.	CapacitorTolerance	E24	Capacitor series - 5% Passive capacitance tolerance
13.	SeedCapacitance	10.0 n	Seed Capacitance to start design of filter

## Design Assistance

1. **LMC6572BIM** Product Folder : <http://www.ti.com//product/LMC6572> : contains the data sheet and other resources.

## Filter Stage :1

Cutoff Frequency 1,000.0 Hz  
 Min GBW Req'd 70.7 kHz  
 Stage Gain 1.414 V/V  
 Stage Q 500.0 m  
 Stage Topology Real\_Pole

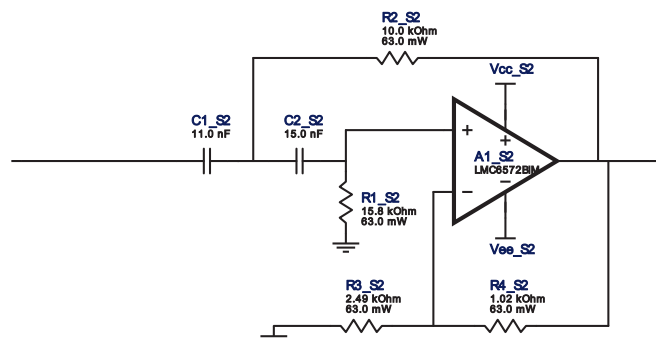


### Electrical BOM






#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S1	Texas Instruments	LMC6572BIM	GbwTyp= 220.0 mMHz VccMin= 2.7 V VccMax= 10.0 V	1	\$0.55	SOIC 0 mm <sup>2</sup>
2.	C1_S1	Kemet	C0603C103J5RACTU Series= X7R	Cap= 10.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.01	0603 5 mm <sup>2</sup>
3.	R1_S1	Vishay-Dale	CRCW040215K8FKED Series= CRCW..e3	Res= 15.8 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm <sup>2</sup>
4.	R2_S1	Vishay-Dale	CRCW0603412RFKEA Series= CRCW..e3	Res= 412.0 Ohm Power= 100.0 mW Tolerance= 1.0%	1	\$0.01	0603 5 mm <sup>2</sup>
5.	R3_S1	Vishay-Dale	CRCW04021K00FKED Series= CRCW..e3	Res= 1000.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm <sup>2</sup>

## Filter Stage :2

Cutoff Frequency	1,000.0 Hz
Min GBW Req'd	141.4 kHz
Stage Gain	1.414 V/V
Stage Q	1.0
Stage Topology	Sallen_Key



### Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S2	Texas Instruments	LMC6572BIM	GbwTyp= 220.0 mMHz VccMin= 2.7 V VccMax= 10.0 V	1	\$0.55	SOIC 0 mm <sup>2</sup>
2.	C1_S2	Samsung Electro-Mechanics	CL32C113JBHNNNE Series= C0G/NP0	Cap= 11.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.10	 1210 15 mm <sup>2</sup>
3.	C2_S2	Kemet	C0603C153G4GAC7867 Series= C0G/NP0	Cap= 15.0 nF VDC= 16.0 V Tolerance= 2.0 %	1	\$0.21	 0603 5 mm <sup>2</sup>
4.	R1_S2	Vishay-Dale	CRCW040215K8FKED Series= CRCW..e3	Res= 15.8 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm <sup>2</sup>
5.	R2_S2	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm <sup>2</sup>
6.	R3_S2	Vishay-Dale	CRCW04022K49FKED Series= CRCW..e3	Res= 2.49 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm <sup>2</sup>

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
7.	R4_S2	Vishay-Dale	CRCW04021K02FKED Series= CRCW..e3	Res= 1.02 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm <sup>2</sup>

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