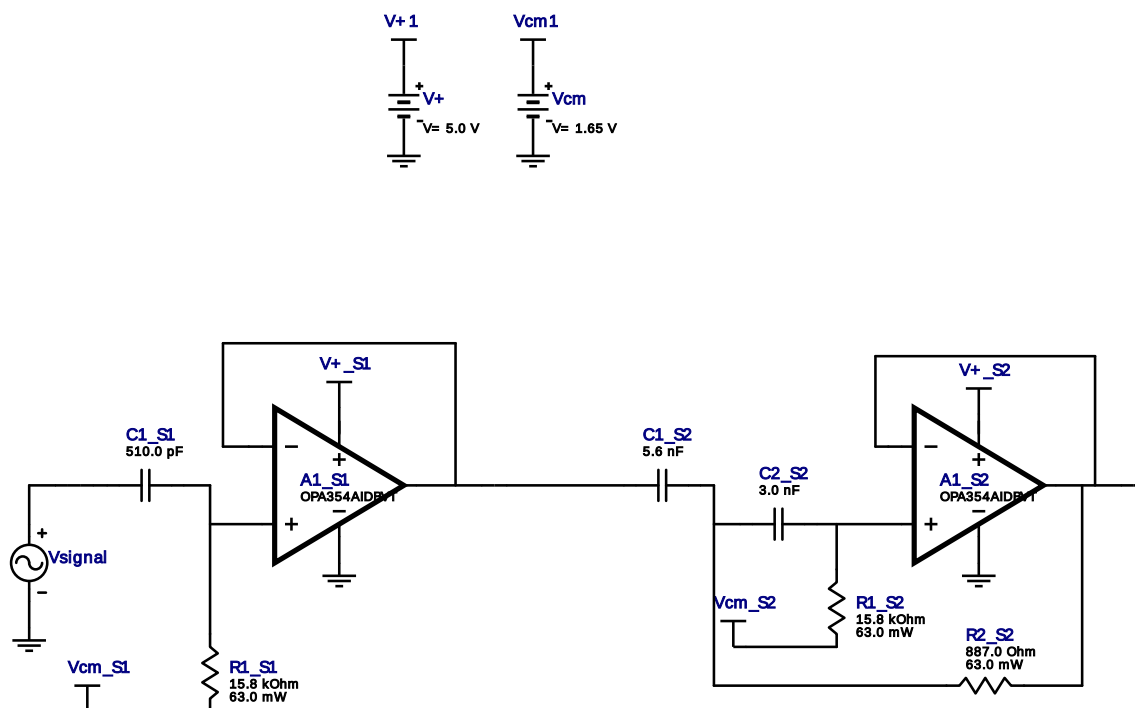


WEBENCH[®] Design Report

Design : 4386859/15 OPA354AIDBVT
Highpass, Sallen Key, Chebyshev 1 dB



My Comments

No comments

Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S1	Texas Instruments, Inc.	OPA354AIDBVT	GbwTyp= 250.0MHz VccMin= 2.5 V VccMax= 5.5 V	1	\$0.80	 DBV0005A 15 mm ²
2.	A1_S2	Texas Instruments, Inc.	OPA354AIDBVT	GbwTyp= 250.0MHz VccMin= 2.5 V VccMax= 5.5 V	1	\$0.80	 DBV0005A 15 mm ²
3.	C1_S1	MuRata	GRM1555C1E511JA01D Series= C0G/NP0	Cap= 510.0 pF VDC= 25.0 V Tolerance= 5.0 %	1	\$0.01	 0402 3 mm ²
4.	C1_S2	TDK	C1608C0G1E562J080AA Series= C0G/NP0	Cap= 5.6 nF VDC= 25.0 V Tolerance= 5.0 %	1	\$0.06	 0603 5 mm ²
5.	C2_S2	MuRata	GRM1885C1H302JA01D Series= C0G/NP0	Cap= 3.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.03	 0603 5 mm ²
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 ²
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 ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
8.	R2_S2	Vishay-Dale	CRCW0402887RFKED Series= CRCW..e3	Res= 887.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

Design Inputs

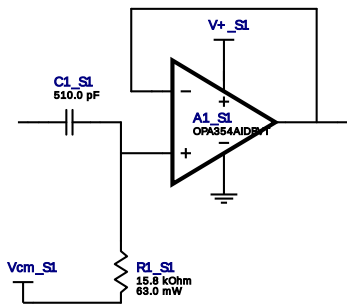
#	Name	Value	Description
1.	FilterType	Highpass	
2.	FilterResponse	Chebyshev_1dB	
3.	FilterOrder	3.0	
4.	FilterTopology	Sallen_Key	
5.	NumberOfStages	2.0	
6.	PassbandFrequency	10.0 k	
7.	StopbandAttenuation	-45.0	
8.	StopbandFrequency	2.0 k	
9.	Gain	1.0	
10.	SingleSupply	5.0	Power supply(s) to active chips
11.	ResistorTolerance	E96	Resistor series - 1% Passive resistor tolerance
12.	CapacitorTolerance	E24	Capacitor series - 5% Passive capacitance tolerance
13.	SeedCapacitance	1.0 n	Seed Capacitance to start design of filter

Design Assistance

1. **OPA354AIDBVT** Product Folder : <http://www.ti.com//product/OPA354> : contains the data sheet and other resources.

Filter Stage :1

Cutoff Frequency 20.236 kHz
Min GBW Req'd 1.012 MHz
Stage Gain 1.0 V/V
Stage Q 500.0 m
Stage Topology Real_Pole

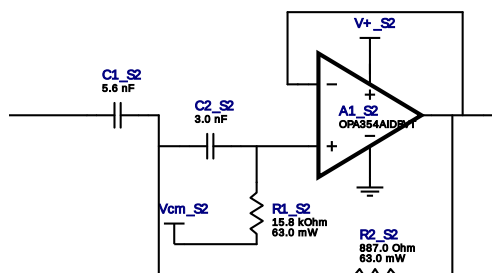


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S1	Texas Instruments, Inc.	OPA354AIDBVT	GbwTyp= 250.0MHz VccMin= 2.5 V VccMax= 5.5 V	1	\$0.80	 DBV0005A 15 mm²
2.	C1_S1	MuRata	GRM1555C1E511JA01D Series= C0G/NP0	Cap= 510.0 pF VDC= 25.0 V Tolerance= 5.0 %	1	\$0.01	 0402 3 mm²
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 mm²

Filter Stage :2

Cutoff Frequency	10.029 kHz
Min GBW Req'd	2.024 MHz
Stage Gain	1.0 V/V
Stage Q	2.018
Stage Topology	Sallen_Key



Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S2	Texas Instruments, Inc.	OPA354AIDBVT	GbwTyp= 250.0MHz VccMin= 2.5 V VccMax= 5.5 V	1	\$0.80	 DBV0005A 15 mm ²
2.	C1_S2	TDK	C1608C0G1E562J080AA Series= C0G/NP0	Cap= 5.6 nF VDC= 25.0 V Tolerance= 5.0 %	1	\$0.06	 0603 5 mm ²
3.	C2_S2	MuRata	GRM1885C1H302JA01D Series= C0G/NP0	Cap= 3.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.03	 0603 5 mm ²
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 ²
5.	R2_S2	Vishay-Dale	CRCW0402887RFKED Series= CRCW..e3	Res= 887.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²

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