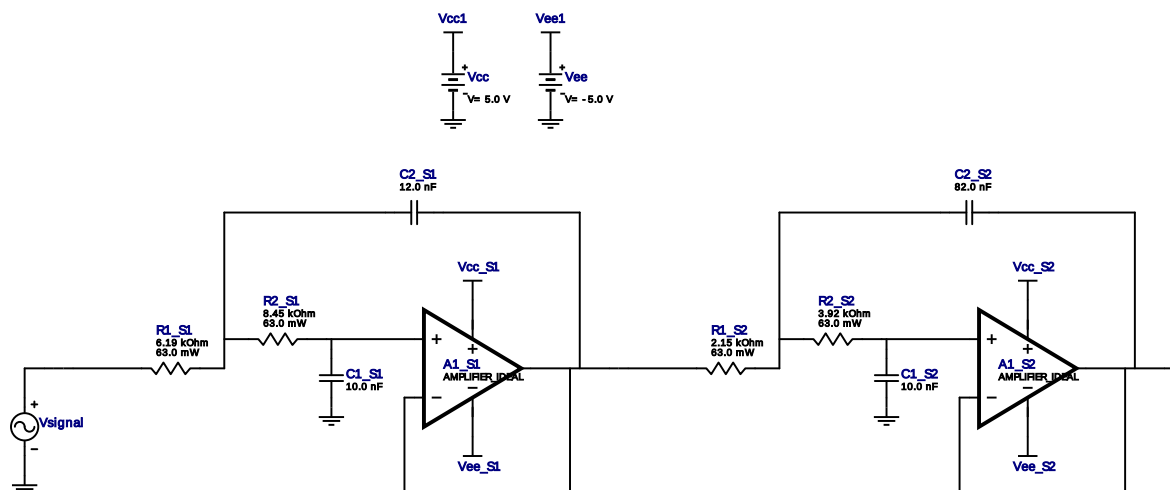


WEBENCH[®] Design Report

Design : 1194016/2101 AMPLIFIER_IDEAL
Lowpass, Sallen Key, Butterworth



My Comments

No comments

Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S1	Texas Instruments	AMPLIFIER_IDEAL	GbwTyp= 1000000.0MHz VccMin= 0.0 V VccMax= 100.0 V	1	NA	0 mm ²
2.	A1_S2	Texas Instruments	AMPLIFIER_IDEAL	GbwTyp= 1000000.0MHz VccMin= 0.0 V VccMax= 100.0 V	1	NA	0 mm ²
3.	C1_S1	Kemet	C0603C103J5RACTU Series= X7R	Cap= 10.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.01	0603 5 mm ²
4.	C1_S2	Kemet	C0603C103J5RACTU Series= X7R	Cap= 10.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.01	0603 5 mm ²
5.	C2_S1	AVX	06033C123JAT2A Series= X7R	Cap= 12.0 nF VDC= 25.0 V Tolerance= 5.0 %	1	\$0.06	0603 5 mm ²
6.	C2_S2	AVX	12063A822JAT2A Series= C0G/NP0	Cap= 82.0 nF VDC= 25.0 V Tolerance= 5.0 %	1	\$0.14	1206 11 mm ²
7.	R1_S1	Vishay-Dale	CRCW04026K19FKED Series= CRCW..e3	Res= 6.19 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
8.	R1_S2	Vishay-Dale	CRCW04022K15FKED Series= CRCW..e3	Res= 2.15 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
9.	R2_S1	Vishay-Dale	CRCW04028K45FKED Series= CRCW..e3	Res= 8.45 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
10.	R2_S2	Vishay-Dale	CRCW04023K92FKED Series= CRCW..e3	Res= 3.92 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

Design Inputs

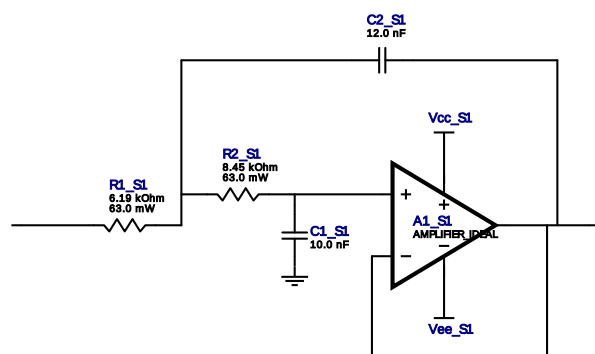
#	Name	Value	Description
1.	DualSupply	+/-5.0 V	DualSupply
2.	FilterType	Lowpass	
3.	FilterResponse	Butterworth	
4.	FilterOrder	4.0	
5.	FilterTopology	Sallen_Key	
6.	NumberOfStages	2.0	
7.	PassbandFrequency	2.0 k	
8.	StopbandAttenuation	-45.0	
9.	StopbandFrequency	8.0 k	
10.	Gain	1.0	
11.	ResistorTolerance	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. **AMPLIFIER_IDEAL** Product Folder : http://www.ti.com/product/AMPLIFIER_IDEAL : contains the data sheet and other resources.

Filter Stage :1

Cutoff Frequency 2.0 kHz
 Min GBW Req'd 108.0 kHz
 Stage Gain 1.0 V/V
 Stage Q 540.0 m
 Stage Topology Sallen_Key

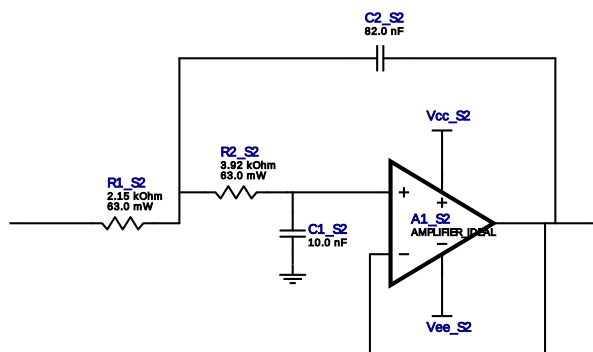


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S1	Texas Instruments	AMPLIFIER_IDEAL	GbwTyp= 1000000.0MHz VccMin= 0.0 V VccMax= 100.0 V	1	NA	0 mm ²
2.	C1_S1	Kemet	C0603C103J5RACTU Series= X7R	Cap= 10.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.01	0603 5 mm ²
3.	C2_S1	AVX	06033C123JAT2A Series= X7R	Cap= 12.0 nF VDC= 25.0 V Tolerance= 5.0 %	1	\$0.06	0603 5 mm ²
4.	R1_S1	Vishay-Dale	CRCW04026K19FKED Series= CRCW..e3	Res= 6.19 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
5.	R2_S1	Vishay-Dale	CRCW04028K45FKED Series= CRCW..e3	Res= 8.45 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

Filter Stage :2

Cutoff Frequency 2.0 kHz
 Min GBW Req'd 262.0 kHz
 Stage Gain 1.0 V/V
 Stage Q 1.31
 Stage Topology Sallen_Key



Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S2	Texas Instruments	AMPLIFIER_IDEAL	GbwTyp= 1000000.0MHz VccMin= 0.0 V VccMax= 100.0 V	1	NA	0 mm ²
2.	C1_S2	Kemet	C0603C103J5RACTU Series= X7R	Cap= 10.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.01	0603 5 mm ²
3.	C2_S2	AVX	12063A822JAT2A Series= C0G/NP0	Cap= 82.0 nF VDC= 25.0 V Tolerance= 5.0 %	1	\$0.14	1206 11 mm ²
4.	R1_S2	Vishay-Dale	CRCW04022K15FKED Series= CRCW..e3	Res= 2.15 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
5.	R2_S2	Vishay-Dale	CRCW04023K92FKED Series= CRCW..e3	Res= 3.92 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

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