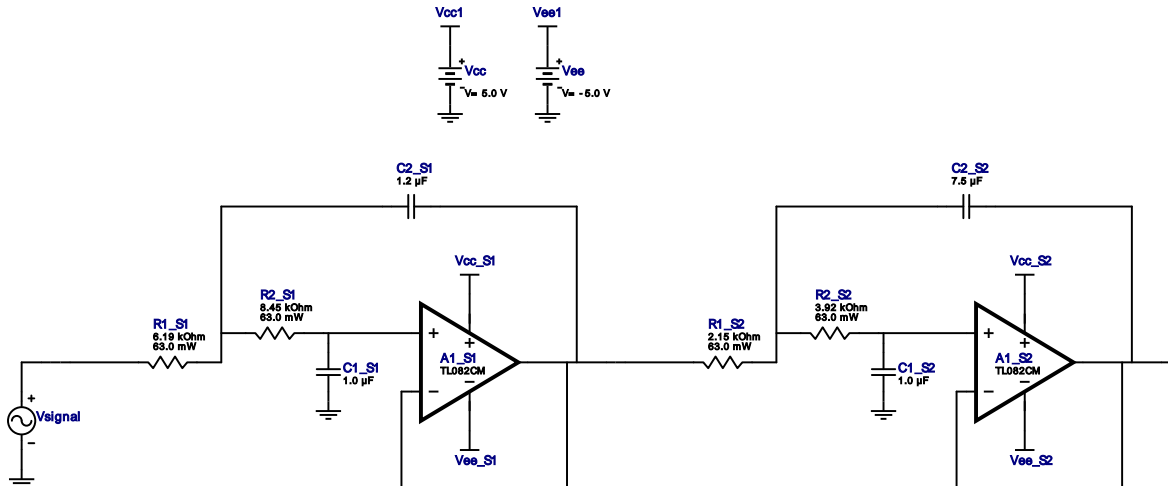


WEBENCH[®] Design Report

 Design : 3989908/8 TL082CM
 Lowpass, Sallen Key, Butterworth


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S1	Texas Instruments	TL082CM	GbwTyp= 4.0 MHz VccMin= 10.0 V VccMax= 36.0 V	1	\$0.21	SOIC 0 mm ²
2.	A1_S2	Texas Instruments	TL082CM	GbwTyp= 4.0 MHz VccMin= 10.0 V VccMax= 36.0 V	1	\$0.21	SOIC 0 mm ²
3.	C1_S1	CUSTOM	CUSTOM Series= ?	Cap= 1.0 uF VDC= 0.0 V Tolerance= 0.0 %	1	NA	CUSTOM 0 mm ²
4.	C1_S2	CUSTOM	CUSTOM Series= ?	Cap= 1.0 uF VDC= 0.0 V Tolerance= 0.0 %	1	NA	CUSTOM 0 mm ²
5.	C2_S1	CUSTOM	CUSTOM Series= ?	Cap= 1.2 uF VDC= 0.0 V Tolerance= 0.0 %	1	NA	CUSTOM 0 mm ²
6.	C2_S2	CUSTOM	CUSTOM Series= ?	Cap= 7.5 uF VDC= 0.0 V Tolerance= 0.0 %	1	NA	CUSTOM 0 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
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

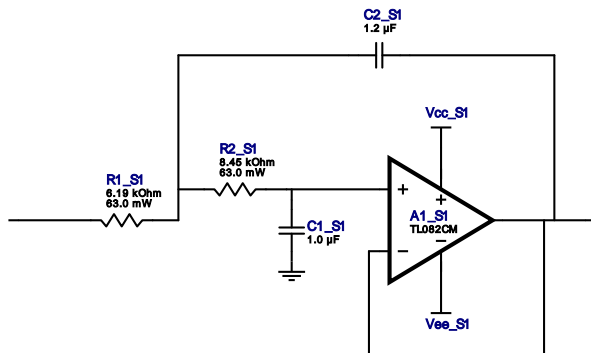
#	Name	Value	Description
1.	FilterType	Lowpass	
2.	FilterResponse	Butterworth	
3.	FilterOrder	4.0	
4.	FilterTopology	Sallen_Key	
5.	NumberOfStages	2.0	
6.	PassbandFrequency	20.0	
7.	StopbandAttenuation	-25.0	
8.	StopbandFrequency	45.0	
9.	Gain	1.0	
10.	DualSupply	+/-5.0 V	Power supply(s) to active chips
11.	ResistorTolerance	E96	Resistor series - 1% Passive resistor tolerance
12.	CapacitorTolerance	E24	Capacitor series - 5% Passive capacitance tolerance
13.	SeedCapacitance	1.0 μ	Seed Capacitance to start design of filter

Design Assistance

1. **TL082CM** Product Folder : <http://www.ti.com/product/TL082-N> : contains the data sheet and other resources.

Filter Stage :1

Cutoff Frequency	20.0 Hz
Min GBW Req'd	1.08 kHz
Stage Gain	1.0 V/V
Stage Q	540.0 m
Stage Topology	Sallen_Key

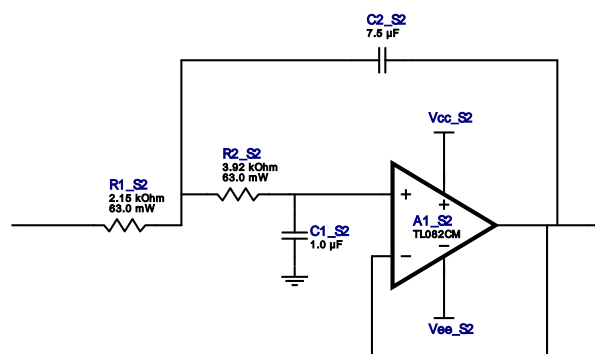


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S1	Texas Instruments	TL082CM	GbwTyp= 4.0 MHz VccMin= 10.0 V VccMax= 36.0 V	1	\$0.21	SOIC 0 mm ²
2.	C1_S1	CUSTOM	CUSTOM Series= ?	Cap= 1.0 uF VDC= 0.0 V Tolerance= 0.0 %	1	NA	CUSTOM 0 mm ²
3.	C2_S1	CUSTOM	CUSTOM Series= ?	Cap= 1.2 uF VDC= 0.0 V Tolerance= 0.0 %	1	NA	CUSTOM 0 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	20.0 Hz
Min GBW Req'd	2.62 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	TL082CM	GbwTyp= 4.0 MHz VccMin= 10.0 V VccMax= 36.0 V	1	\$0.21	SOIC 0 mm ²
2.	C1_S2	CUSTOM	CUSTOM Series= ?	Cap= 1.0 uF VDC= 0.0 V Tolerance= 0.0 %	1	NA	CUSTOM 0 mm ²
3.	C2_S2	CUSTOM	CUSTOM Series= ?	Cap= 7.5 uF VDC= 0.0 V Tolerance= 0.0 %	1	NA	CUSTOM 0 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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