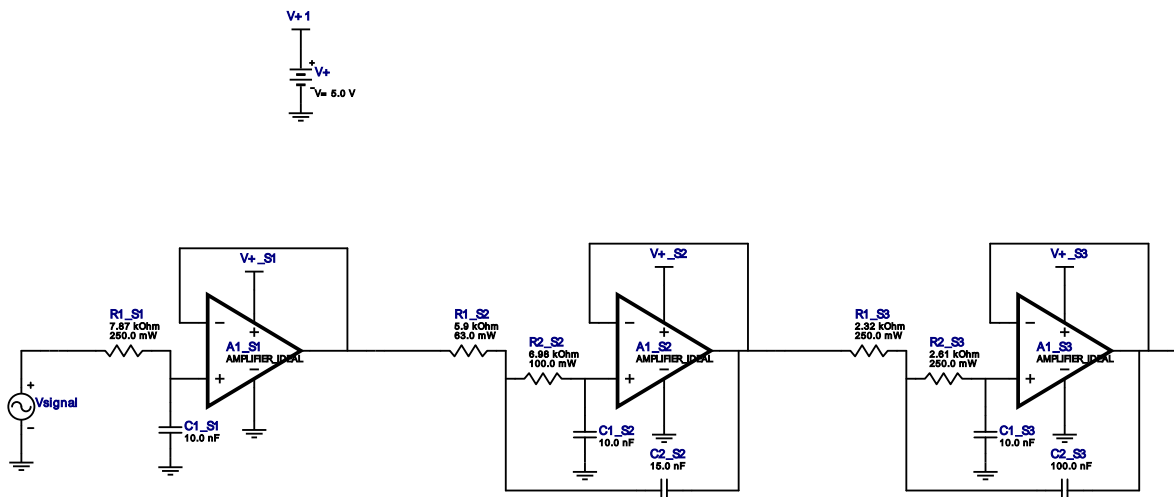


WEBENCH® Design Report










Design : 5322186/16 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.	A1_S3	Texas Instruments	AMPLIFIER_IDEAL	GbwTyp= 1000000.0MHz VccMin= 0.0 V VccMax= 100.0 V	1	NA	 0 mm ²
4.	C1_S1	Kemet	C0603C103F3GACTU Series= C0G/NP0	Cap= 10.0 nF VDC= 25.0 V Tolerance= 1.0 %	1	\$0.44	 0603 5 mm ²
5.	C1_S2	Kemet	C0603C103F3GACTU Series= C0G/NP0	Cap= 10.0 nF VDC= 25.0 V Tolerance= 1.0 %	1	\$0.44	 0603 5 mm ²
6.	C1_S3	Kemet	C0603C103F3GACTU Series= C0G/NP0	Cap= 10.0 nF VDC= 25.0 V Tolerance= 1.0 %	1	\$0.44	 0603 5 mm ²
7.	C2_S2	Kemet	C0603C153F3GACTU Series= C0G/NP0	Cap= 15.0 nF VDC= 25.0 V Tolerance= 1.0 %	1	\$0.50	 0603 5 mm ²
8.	C2_S3	Kemet	C1206C104F3GACTU Series= C0G/NP0	Cap= 100.0 nF VDC= 25.0 V Tolerance= 1.0 %	1	\$3.12	 1206 11 mm ²
9.	R1_S1	Yageo America	RC1206FR-077K87L Series= ?	Res= 7.87 kOhm Power= 250.0 mW Tolerance= 1.0%	1	\$0.01	 1206 11 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
10.	R1_S2	Vishay-Dale	CRCW04025K90FKED Series= CRCW..e3	Res= 5.9 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
11.	R1_S3	Yageo America	RC1206FR-072K32L Series= ?	Res= 2.32 kOhm Power= 250.0 mW Tolerance= 1.0%	1	\$0.01	 1206 11 mm ²
12.	R2_S2	Vishay-Dale	CRCW06036K98FKEA Series= CRCW..e3	Res= 6.98 kOhm Power= 100.0 mW Tolerance= 1.0%	1	\$0.01	 0603 5 mm ²
13.	R2_S3	Yageo America	RC1206FR-072K61L Series= ?	Res= 2.61 kOhm Power= 250.0 mW Tolerance= 1.0%	1	\$0.01	 1206 11 mm ²

Design Inputs

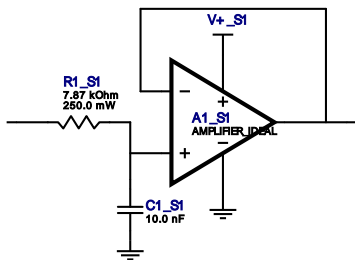
#	Name	Value	Description
1.	FilterType	Lowpass	
2.	FilterResponse	Butterworth	
3.	FilterOrder	5.0	
4.	FilterTopology	Sallen_Key	
5.	NumberOfStages	0.0	
6.	PassbandFrequency	2.0 k	
7.	StopbandAttenuation	-25.0	
8.	StopbandFrequency	4.0 k	
9.	Gain	1.0	
10.	SingleSupply	5.0	Power supply(s) to active chips
11.	ResistorTolerance	E96	Resistor series - 1% Passive resistor tolerance
12.	CapacitorTolerance	E96	Capacitor series - 1% 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 100.0 kHz
Stage Gain 1.0 V/V
Stage Q 500.0 m
Stage Topology Sallen_Key

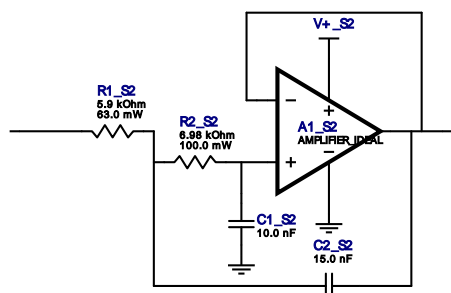


Electrical BOM





#	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	C0603C103F3GACTU Series= C0G/NP0	Cap= 10.0 nF VDC= 25.0 V Tolerance= 1.0 %	1	\$0.44	 0603 5 mm ²
3.	R1_S1	Yageo America	RC1206FR-077K87L Series= ?	Res= 7.87 kOhm Power= 250.0 mW Tolerance= 1.0%	1	\$0.01	 1206 11 mm ²

Filter Stage :2

Cutoff Frequency 2.0 kHz
 Min GBW Req'd 123.608 kHz
 Stage Gain 1.0 V/V
 Stage Q 618.044 m
 Stage Topology Sallen_Key

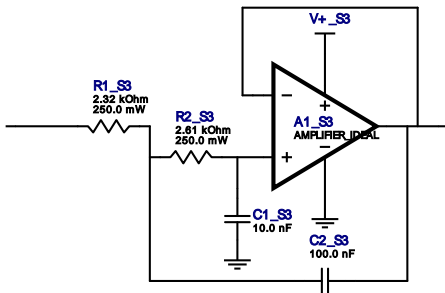


Electrical BOM

#	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	C0603C103F3GACTU Series= C0G/NP0	Cap= 10.0 nF VDC= 25.0 V Tolerance= 1.0 %	1	\$0.44	 0603 5 mm ²
3.	C2_S2	Kemet	C0603C153F3GACTU Series= C0G/NP0	Cap= 15.0 nF VDC= 25.0 V Tolerance= 1.0 %	1	\$0.50	 0603 5 mm ²
4.	R1_S2	Vishay-Dale	CRCW04025K90FKED Series= CRCW..e3	Res= 5.9 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
5.	R2_S2	Vishay-Dale	CRCW06036K98FKEA Series= CRCW..e3	Res= 6.98 kOhm Power= 100.0 mW Tolerance= 1.0%	1	\$0.01	 0603 5 mm ²

Filter Stage :3

Cutoff Frequency 2.0 kHz
 Min GBW Req'd 323.648 kHz
 Stage Gain 1.0 V/V
 Stage Q 1.618
 Stage Topology Sallen_Key



Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S3	Texas Instruments	AMPLIFIER_IDEAL	GbwTyp= 1000000.0MHz VccMin= 0.0 V VccMax= 100.0 V	1	NA	 0 mm ²
2.	C1_S3	Kemet	C0603C103F3GACTU Series= C0G/NP0	Cap= 10.0 nF VDC= 25.0 V Tolerance= 1.0 %	1	\$0.44	 0603 5 mm ²
3.	C2_S3	Kemet	C1206C104F3GACTU Series= C0G/NP0	Cap= 100.0 nF VDC= 25.0 V Tolerance= 1.0 %	1	\$3.12	 1206 11 mm ²
4.	R1_S3	Yageo America	RC1206FR-072K32L Series= ?	Res= 2.32 kOhm Power= 250.0 mW Tolerance= 1.0%	1	\$0.01	 1206 11 mm ²
5.	R2_S3	Yageo America	RC1206FR-072K61L Series= ?	Res= 2.61 kOhm Power= 250.0 mW Tolerance= 1.0%	1	\$0.01	 1206 11 mm ²

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