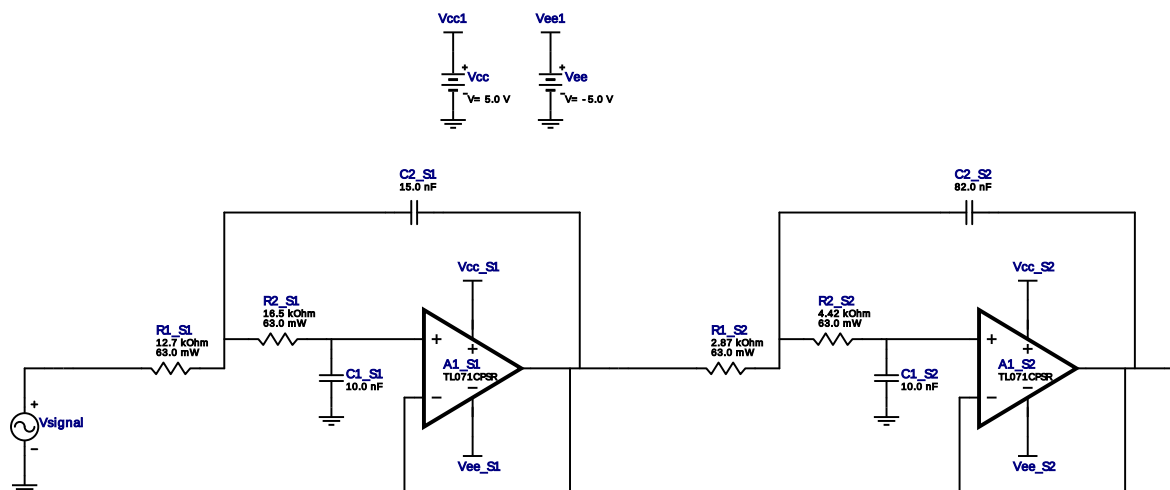


WEBENCH[®] Design Report

Design : 4354344/35 TL071CPSR
Lowpass, Sallen Key, Linear Phase 0.5deg



My Comments

No comments

Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S1	Texas Instruments, Inc.	TL071CPSR	GbwTyp= 3.0MHz VccMin= 10.0 V VccMax= 36.0 V	1	\$0.13	 PS0008A 80 mm ²
2.	A1_S2	Texas Instruments, Inc.	TL071CPSR	GbwTyp= 3.0MHz VccMin= 10.0 V VccMax= 36.0 V	1	\$0.13	 PS0008A 80 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	Kemet	C0603C153G4GAC7867 Series= C0G/NP0	Cap= 15.0 nF VDC= 16.0 V Tolerance= 2.0 %	1	\$0.21	 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	CRCW040212K7FKED Series= CRCW..e3	Res= 12.7 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
8.	R1_S2	Vishay-Dale	CRCW04022K87FKED Series= CRCW..e3	Res= 2.87 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
9.	R2_S1	Vishay-Dale	CRCW040216K5FKED Series= CRCW..e3	Res= 16.5 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	CRCW04024K42FKED Series= CRCW..e3	Res= 4.42 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

Design Inputs

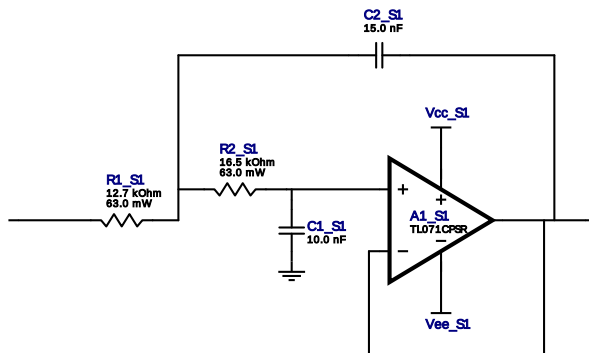
#	Name	Value	Description
1.	FilterType	Lowpass	
2.	FilterResponse	Linear_Phase_05	
3.	FilterOrder	4.0	
4.	FilterTopology	Sallen_Key	
5.	NumberOfStages	2.0	
6.	PassbandFrequency	1,000.0	
7.	StopbandAttenuation	-45.0	
8.	StopbandFrequency	5.0 k	
9.	Gain	1.0	
10.	DualSupply	+/-5.0 V	Power supply(s) to active chips
11.	ResistorTolerance	E96	Resistor series - 1% Passive resistor tolerance
12.	CapacitorTolerance	E24	Capacitor series - 5% Passive capacitance tolerance
13.	SeedCapacitance	10.0 n	Seed Capacitance to start design of filter

Design Assistance

1. **TL071CPSR** Product Folder : <http://www.ti.com/product/TL071> : contains the data sheet and other resources.

Filter Stage :1

Cutoff Frequency 905.0 Hz
 Min GBW Req'd 55.205 kHz
 Stage Gain 1.0 V/V
 Stage Q 610.0 m
 Stage Topology Sallen_Key

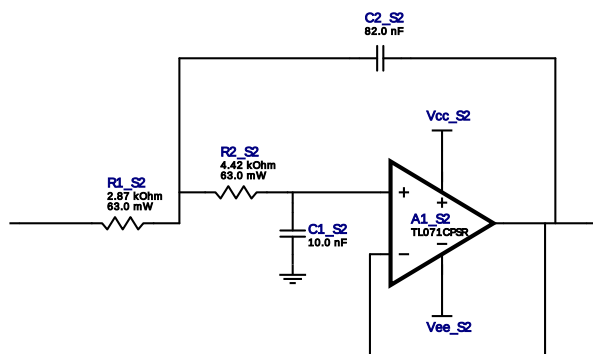


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S1	Texas Instruments, Inc.	TL071CPSR	GbwTyp= 3.0MHz VccMin= 10.0 V VccMax= 36.0 V	1	\$0.13	 PS0008A 80 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	Kemet	C0603C153G4GAC7867 Series= C0G/NP0	Cap= 15.0 nF VDC= 16.0 V Tolerance= 2.0 %	1	\$0.21	 0603 5 mm ²
4.	R1_S1	Vishay-Dale	CRCW040212K7FKED Series= CRCW..e3	Res= 12.7 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
5.	R2_S1	Vishay-Dale	CRCW040216K5FKED Series= CRCW..e3	Res= 16.5 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²

Filter Stage :2

Cutoff Frequency 1.615 kHz
 Min GBW Req'd 216.41 kHz
 Stage Gain 1.0 V/V
 Stage Q 1.34
 Stage Topology Sallen_Key



Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S2	Texas Instruments, Inc.	TL071CPSR	GbwTyp= 3.0MHz VccMin= 10.0 V VccMax= 36.0 V	1	\$0.13	 PS0008A 80 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	CRCW04022K87FKED Series= CRCW..e3	Res= 2.87 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
5.	R2_S2	Vishay-Dale	CRCW04024K42FKED Series= CRCW..e3	Res= 4.42 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²

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