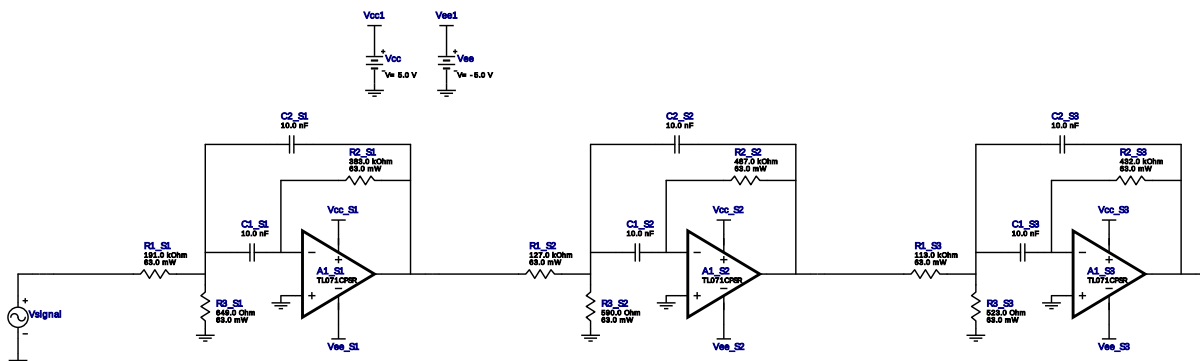


WEBENCH® Design Report

Design : 4386859/18 TL071CPSR
Bandpass, Multiple Feedback, 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.	A1_S3	Texas Instruments, Inc.	TL071CPSR	GbwTyp= 3.0MHz VccMin= 10.0 V VccMax= 36.0 V	1	\$0.13	 PS0008A 80 mm ²
4.	C1_S1	Kemet	C0603C103J5RACTU Series= X7R	Cap= 10.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.01	 0603 5 mm ²
5.	C1_S2	Kemet	C0603C103J5RACTU Series= X7R	Cap= 10.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.01	 0603 5 mm ²
6.	C1_S3	Kemet	C0603C103J5RACTU Series= X7R	Cap= 10.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.01	 0603 5 mm ²
7.	C2_S1	Kemet	C0603C103J5RACTU Series= X7R	Cap= 10.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.01	 0603 5 mm ²
8.	C2_S2	Kemet	C0603C103J5RACTU Series= X7R	Cap= 10.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.01	 0603 5 mm ²
9.	C2_S3	Kemet	C0603C103J5RACTU Series= X7R	Cap= 10.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.01	 0603 5 mm ²
10.	R1_S1	Vishay-Dale	CRCW0402191KFKED Series= CRCW..e3	Res= 191.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
11.	R1_S2	Vishay-Dale	CRCW0402127KFKED Series= CRCW..e3	Res= 127.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
12.	R1_S3	Vishay-Dale	CRCW0402113KFKED Series= CRCW..e3	Res= 113.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
13.	R2_S1	Vishay-Dale	CRCW0402383KFKED Series= CRCW..e3	Res= 383.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
14.	R2_S2	Vishay-Dale	CRCW0402487KFKED Series= CRCW..e3	Res= 487.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
15.	R2_S3	Vishay-Dale	CRCW0402432KFKED Series= CRCW..e3	Res= 432.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
16.	R3_S1	Vishay-Dale	CRCW0402649RFKED Series= CRCW..e3	Res= 649.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
17.	R3_S2	Vishay-Dale	CRCW0402590RFKED Series= CRCW..e3	Res= 590.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
18.	R3_S3	Vishay-Dale	CRCW0402523RFKED Series= CRCW..e3	Res= 523.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

Design Inputs

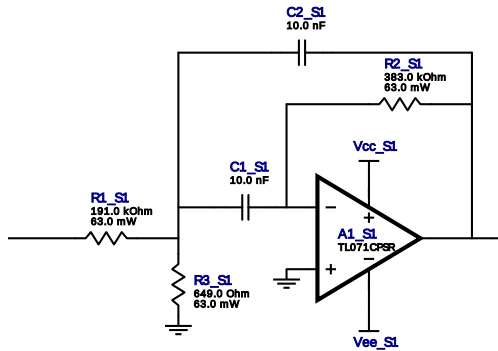
#	Name	Value	Description
1.	FilterType	Bandpass	
2.	FilterResponse	Linear_Phase_05	
3.	FilterOrder	6.0	
4.	FilterTopology	Multiple_Feedback	
5.	NumberOfStages	3.0	
6.	CenterFrequency	1,000.0	
7.	StopbandAttenuation	-45.0	
8.	PassbandBandwidth	100.0	
9.	StopbandBandwidth	1,000.0	
10.	Gain	1.0	
11.	DualSupply	+/-5.0 V	Power supply(s) to active chips
12.	ResistorTolerance	E96	Resistor series - 1% Passive resistor tolerance
13.	CapacitorTolerance	E24	Capacitor series - 5% Passive capacitance tolerance
14.	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 1,000.0 Hz
 Min GBW Req'd 1.211 MHz
 Stage Gain 1.0 V/V
 Stage Q 12.111
 Stage Topology Multiple_Feedback

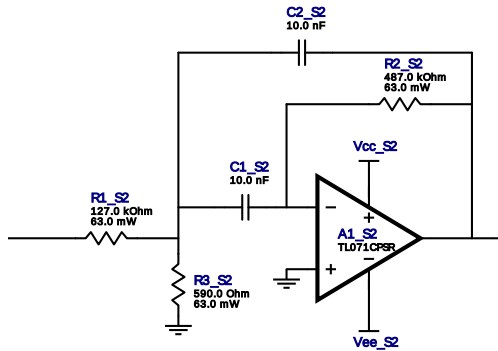


Electrical BOM

#	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	C0603C103J5RACTU Series= X7R	Cap= 10.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.01	 0603 5 mm ²
4.	R1_S1	Vishay-Dale	CRCW0402191KFKED Series= CRCW..e3	Res= 191.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
5.	R2_S1	Vishay-Dale	CRCW0402383KFKED Series= CRCW..e3	Res= 383.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
6.	R3_S1	Vishay-Dale	CRCW0402649RFKED Series= CRCW..e3	Res= 649.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²

Filter Stage :2

Cutoff Frequency 944.978 Hz
 Min GBW Req'd 1.358 MHz
 Stage Gain 1.0 V/V
 Stage Q 14.372
 Stage Topology Multiple_Feedback

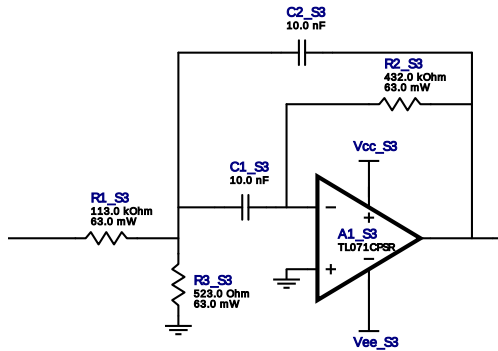


Electrical BOM

#	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	Kemet	C0603C103J5RACTU Series= X7R	Cap= 10.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.01	 0603 5 mm ²
4.	R1_S2	Vishay-Dale	CRCW0402127KFKED Series= CRCW..e3	Res= 127.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
5.	R2_S2	Vishay-Dale	CRCW0402487KFKED Series= CRCW..e3	Res= 487.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
6.	R3_S2	Vishay-Dale	CRCW0402590RFBED Series= CRCW..e3	Res= 590.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²

Filter Stage :3

Cutoff Frequency 1.058 kHz
 Min GBW Req'd 1.521 MHz
 Stage Gain 1.0 V/V
 Stage Q 14.372
 Stage Topology Multiple_Feedback



Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S3	Texas Instruments, Inc.	TL071CPSR	GbwTyp= 3.0MHz VccMin= 10.0 V VccMax= 36.0 V	1	\$0.13	 PS0008A 80 mm ²
2.	C1_S3	Kemet	C0603C103J5RACTU Series= X7R	Cap= 10.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.01	 0603 5 mm ²
3.	C2_S3	Kemet	C0603C103J5RACTU Series= X7R	Cap= 10.0 nF VDC= 50.0 V Tolerance= 5.0 %	1	\$0.01	 0603 5 mm ²
4.	R1_S3	Vishay-Dale	CRCW0402113KFKED Series= CRCW..e3	Res= 113.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
5.	R2_S3	Vishay-Dale	CRCW0402432KFKED Series= CRCW..e3	Res= 432.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
6.	R3_S3	Vishay-Dale	CRCW0402523RFKED Series= CRCW..e3	Res= 523.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

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