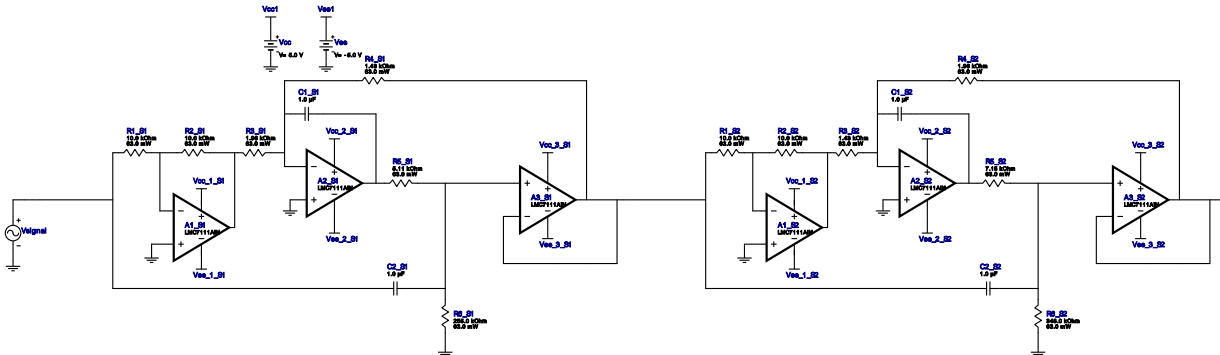


WEBENCH[®] Design Report

 Design : 3989908/10 LMC7111AIN
 Bandstop, Bainter, Bessel

Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S1	Texas Instruments	LMC7111AIN	GbwTyp= 50.0 mMHz VccMin= 2.7 V VccMax= 11.0 V	1	\$0.55	DIP 0 mm ²
2.	A1_S2	Texas Instruments	LMC7111AIN	GbwTyp= 50.0 mMHz VccMin= 2.7 V VccMax= 11.0 V	1	\$0.55	DIP 0 mm ²
3.	A2_S1	Texas Instruments	LMC7111AIN	GbwTyp= 50.0 mMHz VccMin= 2.7 V VccMax= 11.0 V	1	\$0.55	DIP 0 mm ²
4.	A2_S2	Texas Instruments	LMC7111AIN	GbwTyp= 50.0 mMHz VccMin= 2.7 V VccMax= 11.0 V	1	\$0.55	DIP 0 mm ²
5.	A3_S1	Texas Instruments	LMC7111AIN	GbwTyp= 50.0 mMHz VccMin= 2.7 V VccMax= 11.0 V	1	\$0.55	DIP 0 mm ²
6.	A3_S2	Texas Instruments	LMC7111AIN	GbwTyp= 50.0 mMHz VccMin= 2.7 V VccMax= 11.0 V	1	\$0.55	DIP 0 mm ²
7.	C1_S1	CUSTOM	CUSTOM Series= ?	Cap= 1.0 uF VDC= 0.0 V Tolerance= 0.0 %	1	NA	CUSTOM 0 mm ²
8.	C1_S2	CUSTOM	CUSTOM Series= ?	Cap= 1.0 uF VDC= 0.0 V Tolerance= 0.0 %	1	NA	CUSTOM 0 mm ²
9.	C2_S1	CUSTOM	CUSTOM Series= ?	Cap= 1.0 uF VDC= 0.0 V Tolerance= 0.0 %	1	NA	CUSTOM 0 mm ²
10.	C2_S2	CUSTOM	CUSTOM Series= ?	Cap= 1.0 uF VDC= 0.0 V Tolerance= 0.0 %	1	NA	CUSTOM 0 mm ²
11.	R1_S1	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
12.	R1_S2	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
13.	R2_S1	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
14.	R2_S2	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
15.	R3_S1	Vishay-Dale	CRCW04021K96FKED Series= CRCW..e3	Res= 1.96 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
16.	R3_S2	Vishay-Dale	CRCW04021K43FKED Series= CRCW..e3	Res= 1.43 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
17.	R4_S1	Vishay-Dale	CRCW04021K43FKED Series= CRCW..e3	Res= 1.43 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
18.	R4_S2	Vishay-Dale	CRCW04021K96FKED Series= CRCW..e3	Res= 1.96 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
19.	R5_S1	Vishay-Dale	CRCW04025K11FKED Series= CRCW..e3	Res= 5.11 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
20.	R5_S2	Vishay-Dale	CRCW04027K15FKED Series= CRCW..e3	Res= 7.15 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
21.	R6_S1	Vishay-Dale	CRCW0402255KFKED Series= CRCW..e3	Res= 255.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
22.	R6_S2	Vishay-Dale	CRCW0402348KFKED Series= CRCW..e3	Res= 348.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

Design Inputs

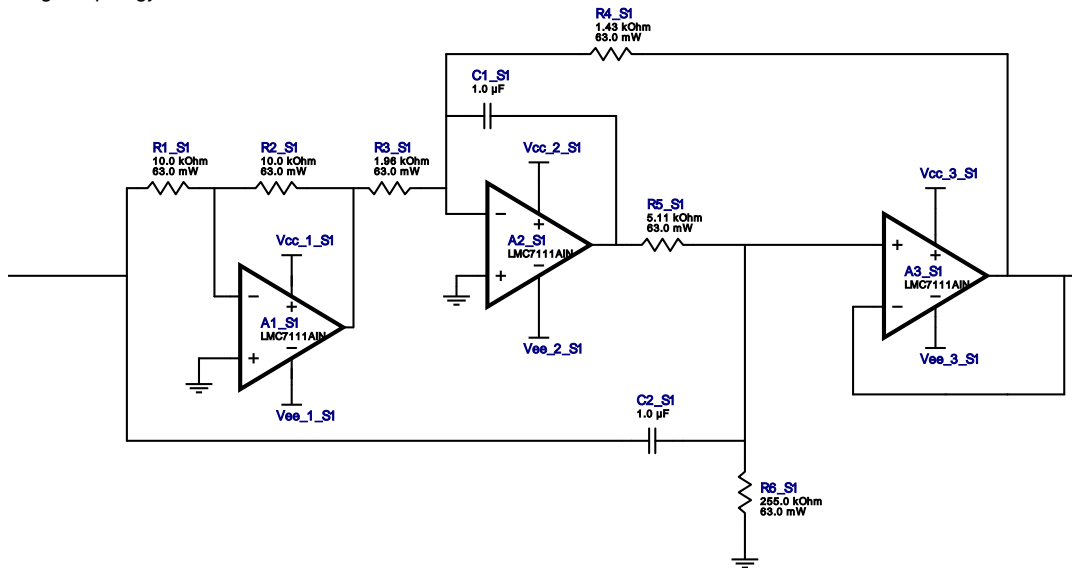
#	Name	Value	Description
1.	FilterType	Bandstop	
2.	FilterResponse	Bessel	
3.	FilterOrder	4.0	
4.	FilterTopology	Bainter	
5.	NumberOfStages	0.0	
6.	CenterFrequency	50.0	
7.	StopbandAttenuation	-20.0	
8.	PassbandBandwidth	40.0	
9.	StopbandBandwidth	10.0	
10.	Gain	1.0	
11.	DualSupply	+/-5.0 V	Power supply(s) to active chips
12.	ResistorTolerance	E96	Resistor series - 1% Passive resistor tolerance
13.	CapacitorTolerance	E24	Capacitor series - 5% Passive capacitance tolerance
14.	SeedCapacitance	1.0 μ	Seed Capacitance to start design of filter

Design Assistance

1. **LMC7111AIN** Product Folder : <http://www.ti.com//product/LMC7111> : contains the data sheet and other resources.

Filter Stage :1

Cutoff Frequency 50.0 Hz
 Min GBW Req'd 10.954 kHz
 Stage Gain 1.0 V/V
 Stage Q 1.863
 Stage Topology Bainter



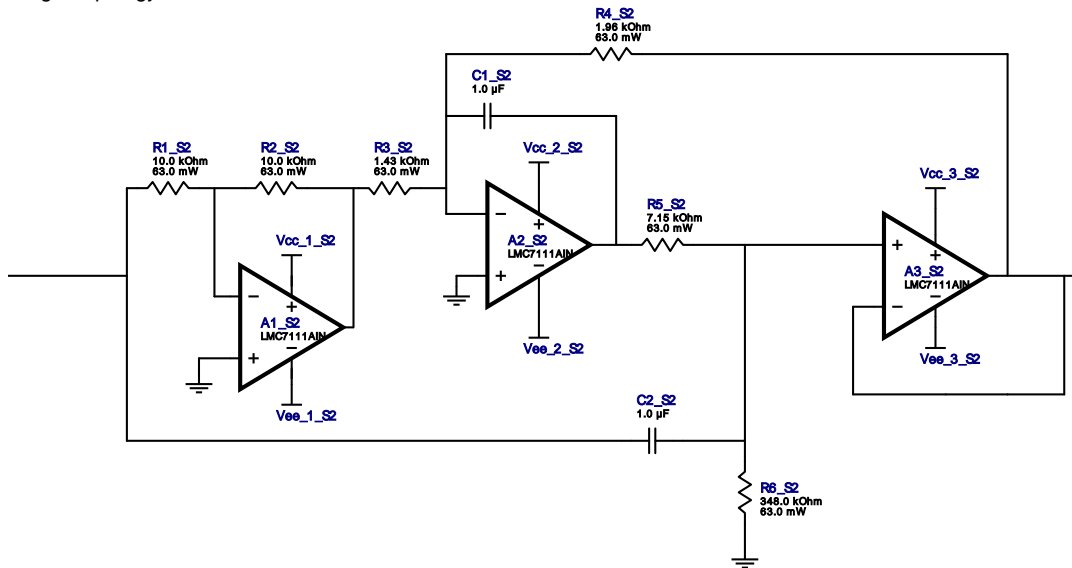
Electrical BOM

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2.	A2_S1	Texas Instruments	LMC7111AIN	GbwTyp= 50.0 mMHz VccMin= 2.7 V VccMax= 11.0 V	1	\$0.55	DIP 0 mm ²
3.	A3_S1	Texas Instruments	LMC7111AIN	GbwTyp= 50.0 mMHz VccMin= 2.7 V VccMax= 11.0 V	1	\$0.55	DIP 0 mm ²
4.	C1_S1	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= 1.0 uF VDC= 0.0 V Tolerance= 0.0 %	1	NA	CUSTOM 0 mm ²
6.	R1_S1	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
7.	R2_S1	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
8.	R3_S1	Vishay-Dale	CRCW04021K96FKED Series= CRCW..e3	Res= 1.96 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
9.	R4_S1	Vishay-Dale	CRCW04021K43FKED Series= CRCW..e3	Res= 1.43 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
10.	R5_S1	Vishay-Dale	CRCW04025K11FKED Series= CRCW..e3	Res= 5.11 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
11.	R6_S1	Vishay-Dale	CRCW0402255KFKED Series= CRCW..e3	Res= 255.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

Filter Stage :2

Cutoff Frequency	50.0 Hz
Min GBW Req'd	7.918 kHz
Stage Gain	1.0 V/V
Stage Q	1.863
Stage Topology	Bainter



Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S2	Texas Instruments	LMC7111AIN	GbwTyp= 50.0 mMHz VccMin= 2.7 V VccMax= 11.0 V	1	\$0.55	DIP 0 mm ²
2.	A2_S2	Texas Instruments	LMC7111AIN	GbwTyp= 50.0 mMHz VccMin= 2.7 V VccMax= 11.0 V	1	\$0.55	DIP 0 mm ²
3.	A3_S2	Texas Instruments	LMC7111AIN	GbwTyp= 50.0 mMHz VccMin= 2.7 V VccMax= 11.0 V	1	\$0.55	DIP 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_S2	CUSTOM	CUSTOM Series= ?	Cap= 1.0 uF VDC= 0.0 V Tolerance= 0.0 %	1	NA	CUSTOM 0 mm ²
6.	R1_S2	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
7.	R2_S2	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
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#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
11.	R6_S2	Vishay-Dale	CRCW0402348KFKED Series= CRCW..e3	Res= 348.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

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