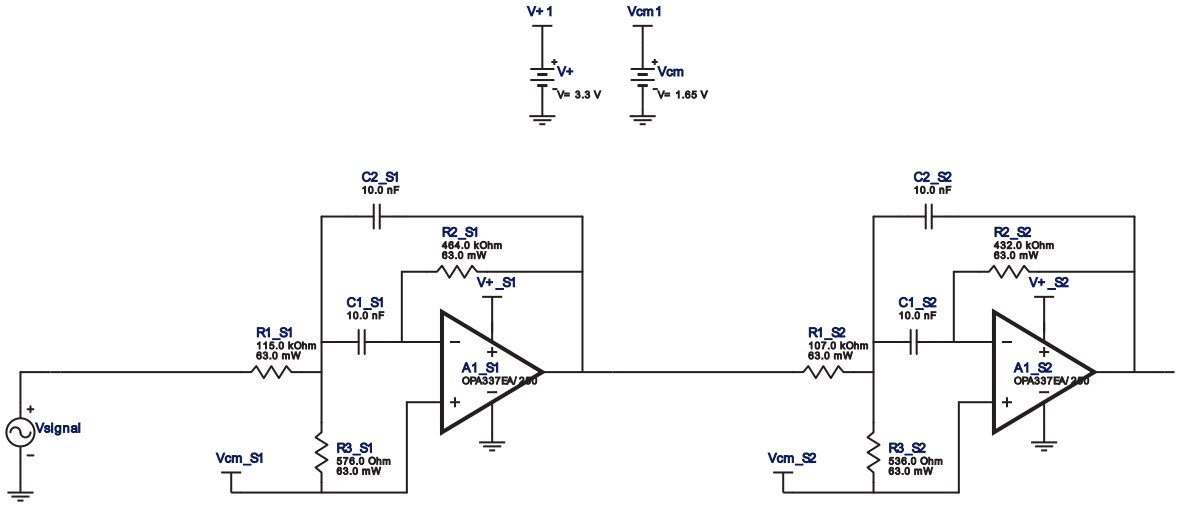
Type : Bandpass
Response : Butterworth
Order : 4
Number of Stages : 2

Device = OPA337EA/250
Created = Jun 23 2015 2:58AM

WEBENCH® Design Report

Design : 3612920/21 OPA337EA/250
Bandpass, Multiple Feedback, Butterworth



Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S1	Texas Instruments	OPA337EA/250	GbwTyp= 3.0 MHz VccMin= 2.5 V VccMax= 5.5 V	1	$0.50	MSOP 0 mm²
2.	A1_S2	Texas Instruments	OPA337EA/250	GbwTyp= 3.0 MHz VccMin= 2.5 V VccMax= 5.5 V	1	$0.50	MSOP 0 mm²
3.	C1_S1	AVX	06033A102FAT2A Series= C0G/NP0	Cap= 10.0 nF VDC= 25.0 V Tolerance= 1.0 %	1	$0.14	0603 5 mm²
4.	C1_S2	AVX	06033A102FAT2A Series= C0G/NP0	Cap= 10.0 nF VDC= 25.0 V Tolerance= 1.0 %	1	$0.14	0603 5 mm²
5.	C2_S1	AVX	06033A102FAT2A Series= C0G/NP0	Cap= 10.0 nF VDC= 25.0 V Tolerance= 1.0 %	1	$0.14	0603 5 mm²
6.	C2_S2	AVX	06033A102FAT2A Series= C0G/NP0	Cap= 10.0 nF VDC= 25.0 V Tolerance= 1.0 %	1	$0.14	0603 5 mm²
7.	R1_S1	Vishay-Dale	CRCW0402115KFKED Series= CRCW..e3	Res= 115.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm²
8.	R1_S2	Vishay-Dale	CRCW0402107KFKED Series= CRCW..e3	Res= 107.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm²
9.	R2_S1	Vishay-Dale	CRCW0402464KFKED Series= CRCW..e3	Res= 464.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm²
10.	R2_S2	Vishay-Dale	CRCW0402432KFKED Series= CRCW..e3	Res= 432.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm²
11.	R3_S1	Vishay-Dale	CRCW0402576RFKED Series= CRCW..e3	Res= 576.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
12.	R3_S2	Vishay-Dale	CRCW0402536RFKED Series= CRCW..e3	Res= 536.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	 0402 3 mm^2

Design Inputs

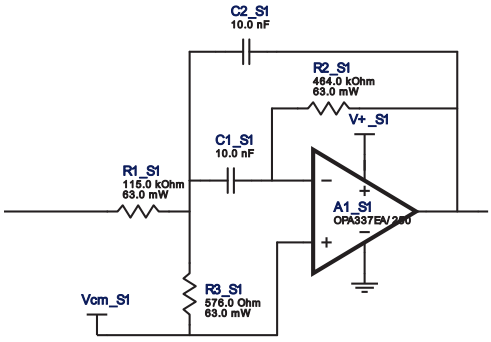
#	Name	Value	Description
1.	FilterType	Bandpass	
2.	FilterResponse	Butterworth	
3.	FilterOrder	4.0	
4.	FilterTopology	Multiple_Feedback	
5.	NumberOfStages	2.0	
6.	CenterFrequency	1,000.0	
7.	StopbandAttenuation	-10.0	
8.	PassbandBandwidth	100.0	
9.	StopbandBandwidth	200.0	
10.	Gain	2.0	
11.	SingleSupply	3.3	Power supply(s) to active chips
12.	ResistorTolerance	E96	Resistor series - 1% Passive resistor tolerance
13.	CapacitorTolerance	E96	Capacitor series - 1% Passive capacitance tolerance
14.	SeedCapacitance	10.0 n	Seed Capacitance to start design of filter

Design Assistance

1. **OPA337EA/250** Product Folder : http://www.ti.com//product/OPA337 : contains the data sheet and other resources.

Filter Stage :1

Cutoff Frequency	965.248 Hz
Min GBW Reqd	1.931 MHz
Stage Gain	1.414 V/V
Stage Q	14.151
Stage Topology	Multiple_Feedback

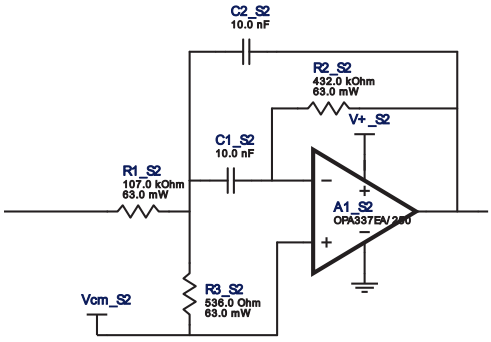


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	A1_S1	Texas Instruments	OPA337EA/250	GbwTyp= 3.0 MHz VccMin= 2.5 V VccMax= 5.5 V	1	$0.50	MSOP 0 mm^2
2.	C1_S1	AVX	06033A102FAT2A Series= C0G/NP0	Cap= 10.0 nF VDC= 25.0 V Tolerance= 1.0 %	1	$0.14	0603 5 mm^2
3.	C2_S1	AVX	06033A102FAT2A Series= C0G/NP0	Cap= 10.0 nF VDC= 25.0 V Tolerance= 1.0 %	1	$0.14	0603 5 mm^2
4.	R1_S1	Vishay-Dale	CRCW0402115KFKED Series= CRCW..e3	Res= 115.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
5.	R2_S1	Vishay-Dale	CRCW0402464KFKED Series= CRCW..e3	Res= 464.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
6.	R3_S1	Vishay-Dale	CRCW0402576RFKED Series= CRCW..e3	Res= 576.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2

Filter Stage :2

Cutoff Frequency	1.036 kHz
Min GBW Reqd	2.073 MHz
Stage Gain	1.414 V/V
Stage Q	14.151
Stage Topology	Multiple_Feedback



Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
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3.	C2_S2	AVX	06033A102FAT2A Series= C0G/NP0	Cap= 10.0 nF VDC= 25.0 V Tolerance= 1.0 %	1	$0.14	0603 5 mm^2
4.	R1_S2	Vishay-Dale	CRCW0402107KFKED Series= CRCW..e3	Res= 107.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
5.	R2_S2	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_S2	Vishay-Dale	CRCW0402536RFKED Series= CRCW..e3	Res= 536.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	 0402 3 mm^2