Ease of build	Medium
-partscount	Low
-density	High
Parts sourcing	Easy
Enclosure fitting	Advanced
Debugging level	Easy

1-band parametric EQ V1.0c

Overview

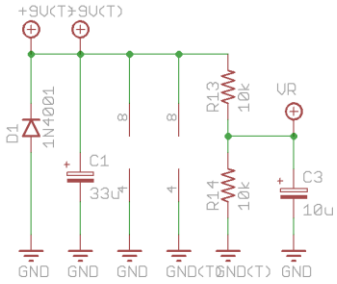
This little guy is an universal specialist. Due to the nature of the parametric EQ it can easily be used to boost or attenuate frequency ranges in any signal.

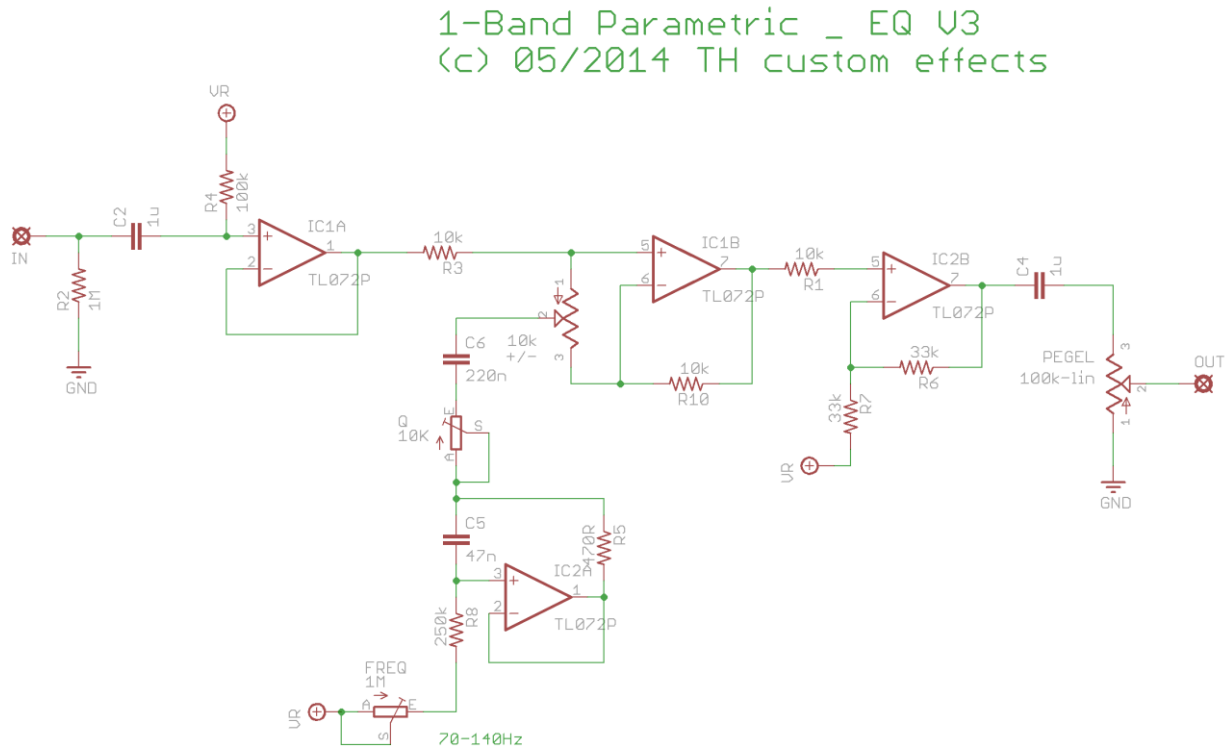
General

Jack Orman has released an online calculator to find the correct parts values for gyrator circuits which this tool is based on. Please visit http://www.muzique.com/lab/gyrator.htm to find out more about it.

This circuit has polarity protection and power filtering. This is a specific small build to fit into a 1590A enclosure.

Schematic





Bill of materials

	Parts	Qty	Value	Description
Resistors	R1, R3, R10, R13, R14	5	10k	
	R2	1	1M	
	R4	1	100k	
	R5	1	470R*	
	R6	1	56k?	
	R7	1	33k	
	R8	1	250k	
Capacitors	C1	1	47u-100uF	polarized electro 5-8mm Ø / 8mm
	C2, C4	2	1uF	MLCC
	C3	1	10uF	polarized electro 5mm Ø / 8mm
	C5	1	47n*	box film
	C6	1	220n*	box film
Diodes	D1	1	1N4001	
Pots	+/-	1	10k lin	9mm Alpha
	Pegel(Volume)	1	100k lin	9mm Alpha
	Q	1	5k/10k	Trimpot ACP 6mm / or Piher
	Freq	1	1M	Trimpot ACP 6mm / or Piher
ICs	IC1,IC2	2	TL072	

Variations

Here you find different values for different frequency spots. Please note that a Q of 10 defines small bandwidth (1/4 octave) and Q of 3 is about one Octave

Bass (R8 / C6 / C5)

250k/220n/47n = 144Hz Q=10
250k/100n/22n = 313HZ Q=10
100k/330n/47n = 186Hz Q=5

Highs (R8 / C6 / C5)

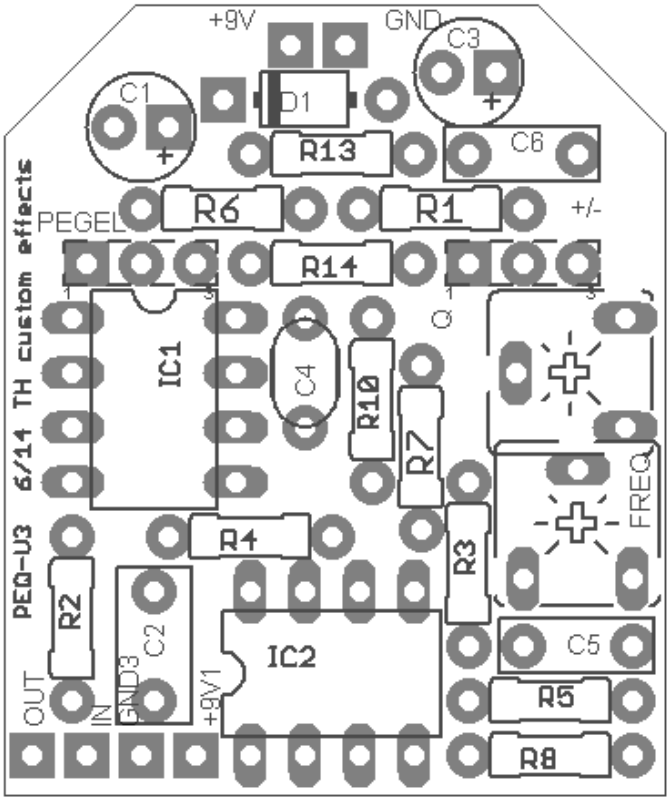
47k/33n/4n7 = 2700Hz Q=4
47k/47n/2n2 = 3333HZ Q=2

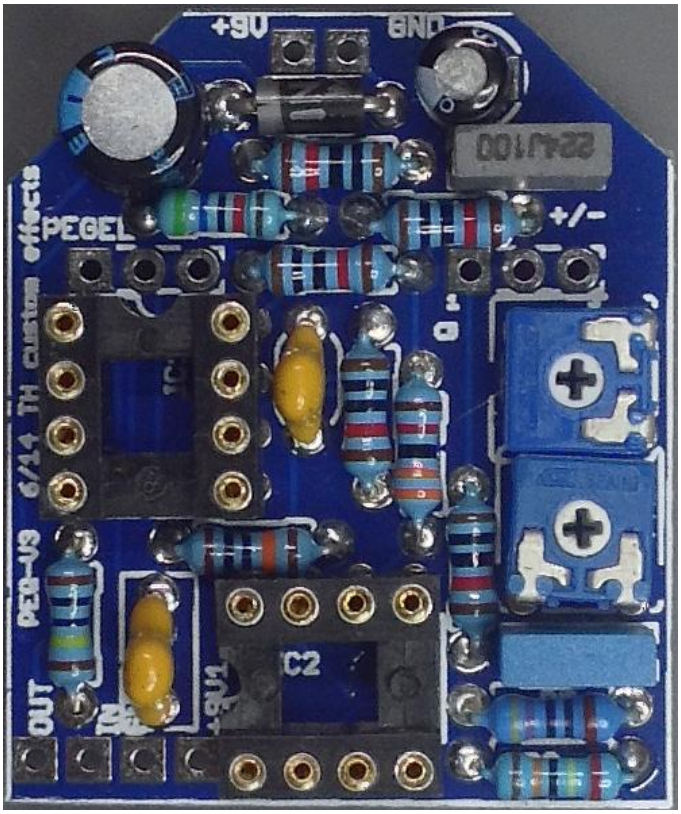
Mids (R8 / C6 / C5)

120k/86n/33n = 400Hz Q=10
100k/47n/22n = 722Hz Q=10
68k/33n/22n = 1045Hz Q=10
68k/220n/22n = 400HZ Q=4
47k/150n/15n = 715Hz Q=3
68k/68n/10n = 1080HZ Q=4
68k/68n/8n2 = 1200Hz Q=4

Building

Start populating the diode and resistors first. If you have space, socket your IC. If not, put in the IC now. Next are the MLCC caps then the box film and polarized electros.





Enclosure

Brian at madbeanpedals has an excellent guide on 1590A builds. It includes drilling templates and many other very valuable stuff. [Check it out!]

This circuit originated from a custom build request.

Finally

The parametric EQ is a great tool for any purpose that needs manipulation of a specific frequency range in your signal. Be it a bass boost, advanced mid's control or taming high frequencies.

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