HEADPHONE SUPER-MINI AMP V1.0B

OVERVIEW

This headphone amp was especially designed to fit into a 1590A enclosure including 9V battery !

GENERAL

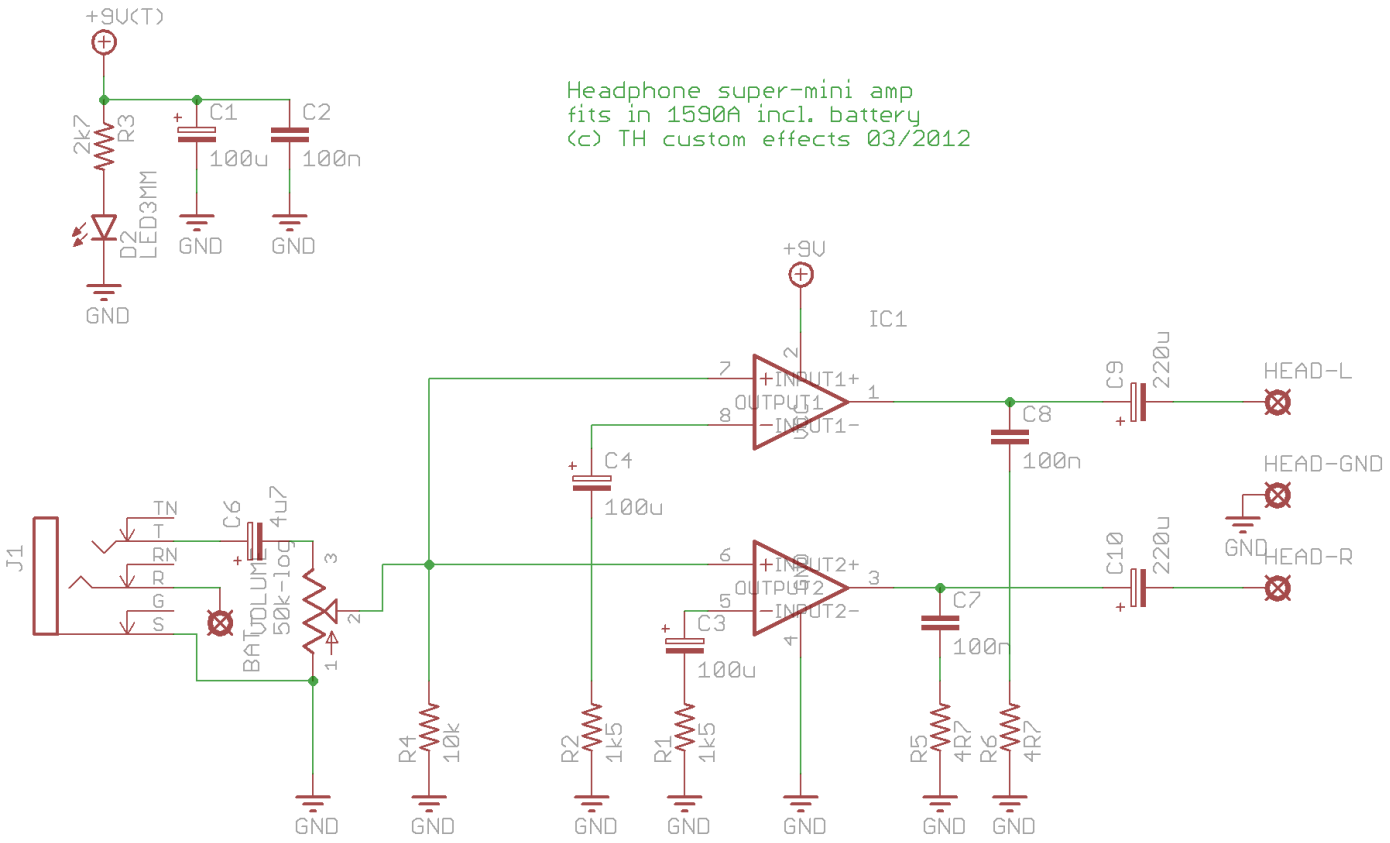
The headphone amp is a utilizing a special but inexpensive and easy to find chip. This is a very limited approach but with excellent sound quality!

Please note that the volume pot is presenting a load to the signal. This is no problem when put at the output stage of an effect. On the other side it was tested by directly playing guitars through it with excellent result.

This build uses a few specific parts to make the fit happen but they are easy to source. The board features onboard CLR and LED as well as “power on plugin”. The circuit only gets power if a plug is in the jack.

V1.0a fixes a typo in the BOM.

SCHEMATIC



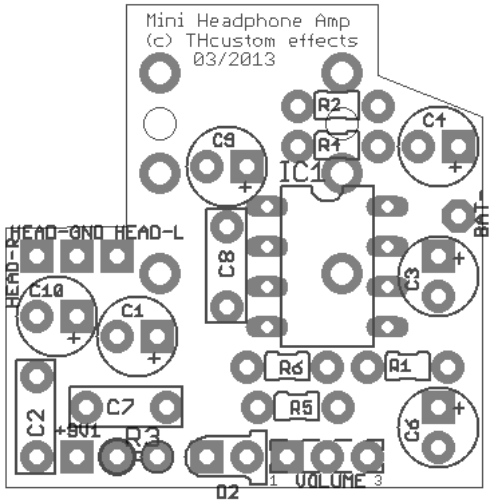
BILL OF MATERIALS

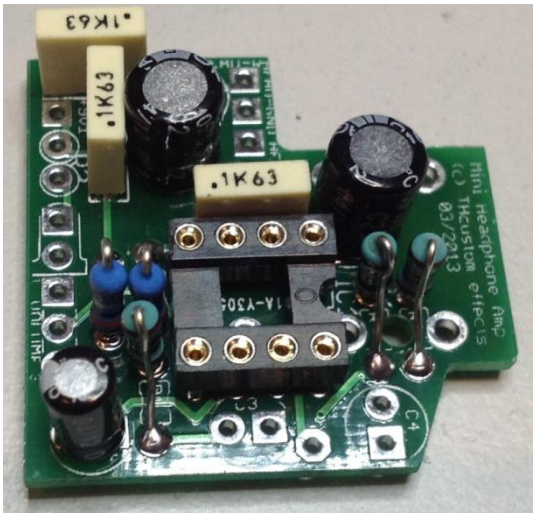
	Parts	Value	Qty	Description
Resistors	R1,R2	2k2-3k3	2	higher values mean less noise but also less amplification
	R3	2k7-8k2	1	Test with the LED of your choice for brightness
	R4	10k	1	
	R5,R6	4R7	2	or 5R1
Capacitors	C1,C3,C4	100u	3	pol. Electro miniature version (7mm)
	C2,C7,C8	100n	3	box film
	C6	4u7	1	pol. Electro miniature version (7mm)
	C9,C10	220u	2	pol. Electro miniature version (7mm)
Pots	VOLUME	100k-log	1	9mm pot
ICs	IC1	TDA 2822M	1	
Other	J1	NEURIK NR-J6HF	1	
	D2	LED 3mm	1	
	J2	Lumberg KLB-4	1	3.5mm stereo jack
	Socket	8 pol DIL socket	1	Precision type

BUILDING

The instructions are very detailed with a lot of pictures to make it possible for everyone to get this going.

The layout was designed to put 1/8W resistors on but I did not have the right values so I used 1/4W upright instead and it worked fine.

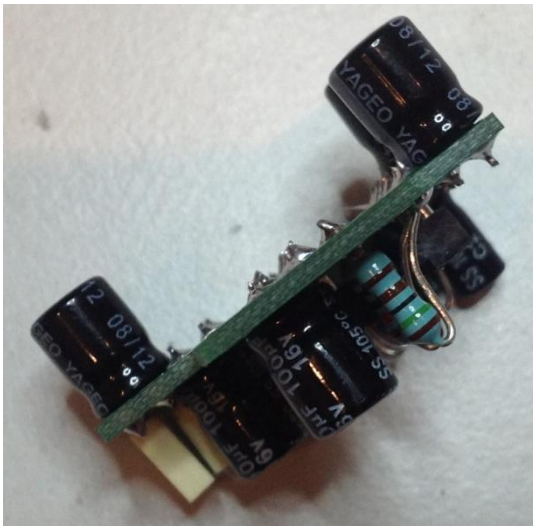




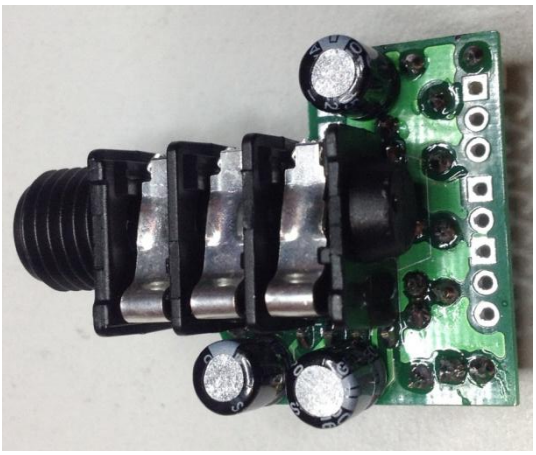
I you have 1/8W resistors begin with those.
If not put in the socket first.

The put in the box caps and the low profile pol. Electro caps C1, C6 and C9.
The other ones need to be put on the backside of the board as there is this bulge around the enclosures backplane which you will not be able to close otherwise.

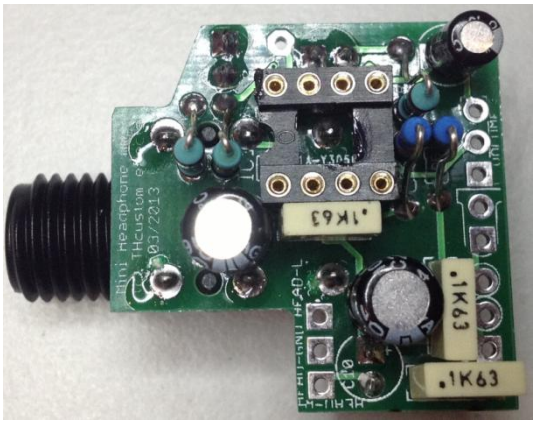
Next put in the box film caps and the upright standing resistors.



Turn over the board and solder the other pol. Caps from the backside.



Try fitting the Neutrik jack now. You might need to remove a little plastic from the back where the jack sits on the solder joints you have already done.
Make sure the jack sits flat on the board.

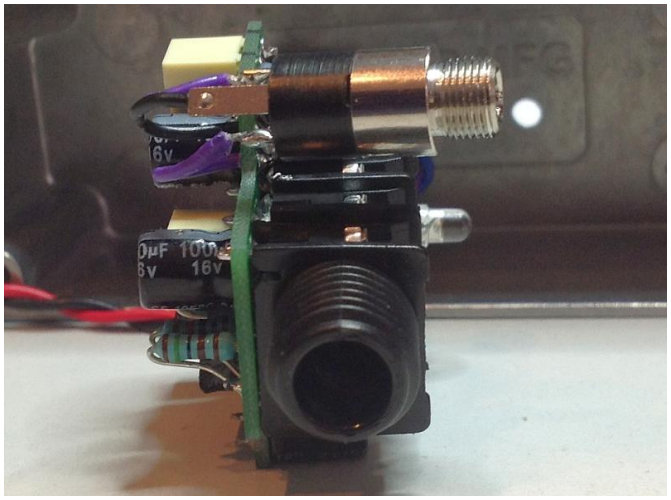


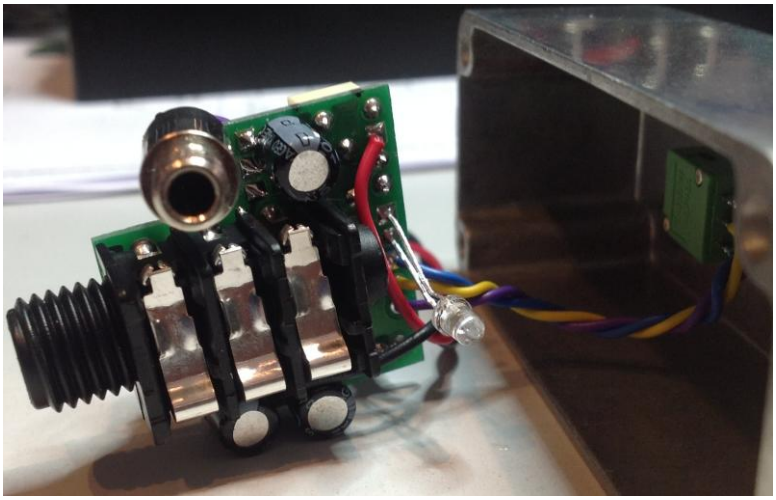
Now you see why you needed the precision socket. One of the solder joints is right in the middle of the IC.

You might want to put a fine tip on your solder iron. I didn't and therefore the plastic melted a little ☺

Try to fit it into the enclosure now. Also mount your LED and fix it. Then connect the battery jack to the +9V and 'bat' pads. The pot and the headphone jack

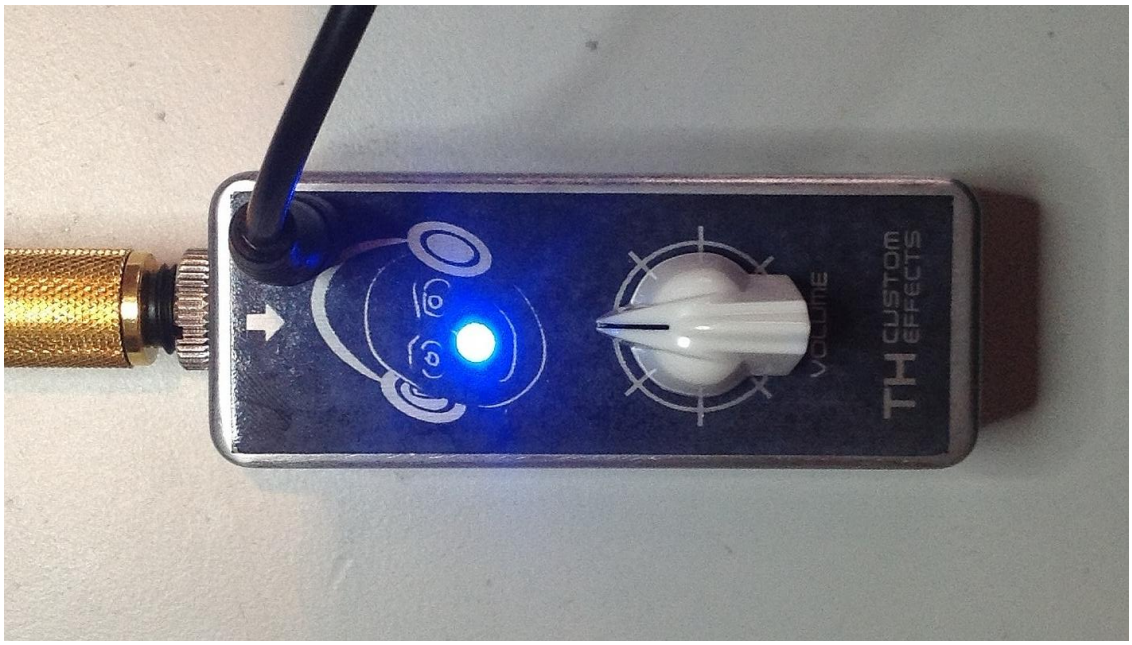
An example of the wiring is shown below.





Put the battery in and you are done!

FINALLY



DISCLAIMER & LICENSE

PCBs purchased from TH custom effects are intended for DIY / non-commercial use only. It is not allowed to redistribute the PCBs and artwork from this document. However, you can uses these instructions and PCBs to build and sell your own product based on PCBs ordered from TH custom effects.