

MyRef Rev. C – Ultimate BOM

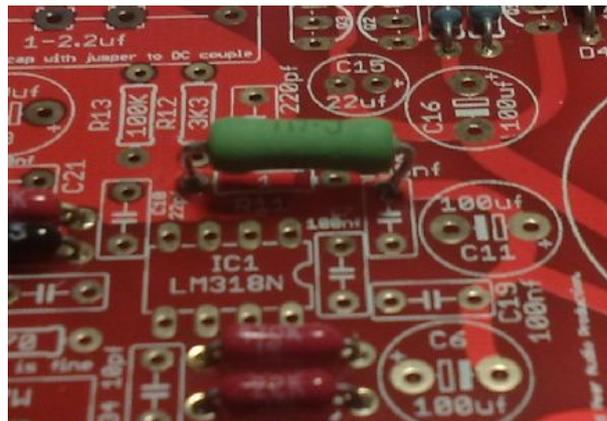
A simple tutorial on building it

Populating the PCB

As always start with lowest profile components and then proceed with higher profile ones.

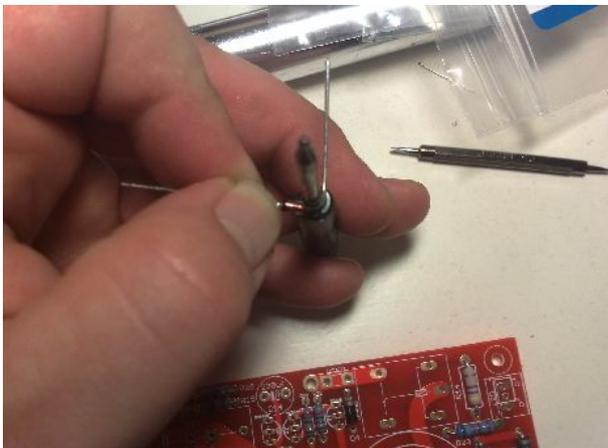


So we'll start with 1/4W resistors and we proceed then with 1N4001 and SBYV27 diodes

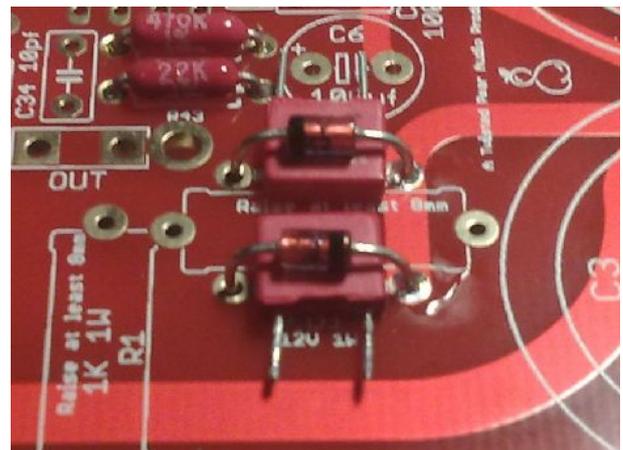


The recommended R11 is bigger than the ones originally provided (this doesn't apply to kits)

Luckily C18 and C19 are unused so we can take advantage of it and use the ground pin of C20.



Now we're going to prepare Zeners for mounting. With help of a little screwdriver bend leads so that we have the diode like in the figure.



Then take two film caps like the ones in the figure and use them as helpers for maintaining Zeners height.

With those helpers caps in place solder the right lead as in figure.

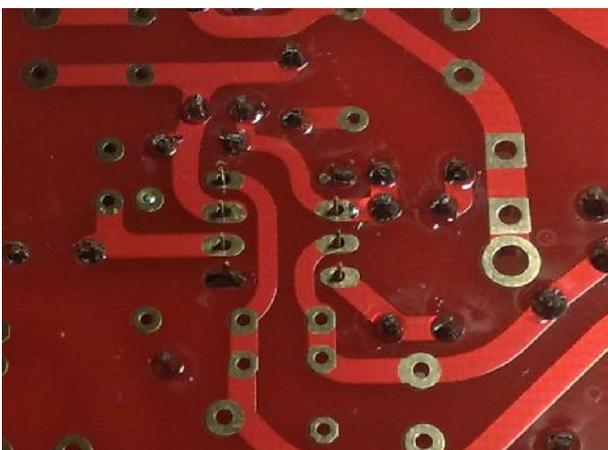
Now you can turn the PCB and solder Zeners.

Remove helpers.



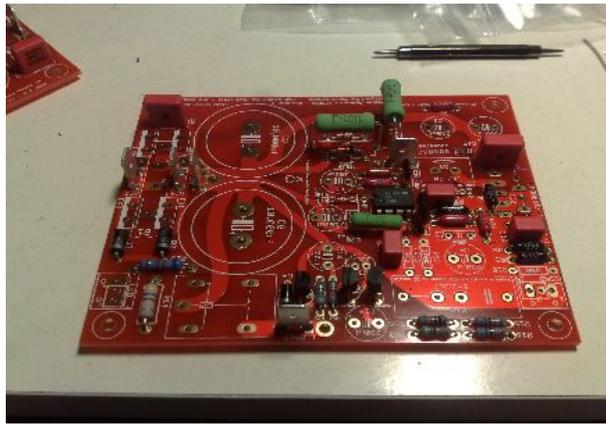
Now bend R1 and R4 leads, place them leaving circa 8 mm – 1 cm.

They will stay in place, so like zeners solder one of the leads of each resistor. Turn the board and solder them.

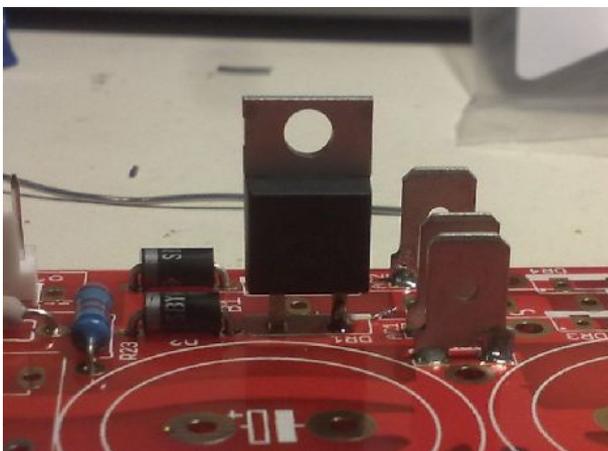


Hold the LM318 in place with a finger (pay attention to the right orientation!) and solder two of the pins, like in figure. Now you can solder all other pins without worrying of the LM318 going around...

Place all transistor in their positions and push them a little so that they stay firm. Now turn the PCB and solder one pin for each transistor, repeat for each pin, one transistor at a time.



Put in place faston tabs and solder them both sides so they're stronger. Start placing them and soldering the top side.
Solder also all film and mica caps.



It's the rectifiers turn. Put one at time in place and, while the diode is straight, solder one leg on the top side, like in figure. When you've done it for all four diodes turn the PCB and solder the diodes.

Start with the unsoldered leg, skip the top soldered one and pass to the next diode. When finished solder the others legs.

Now solder the molex headers, the tin plated is for the led, the gold plated one for the input signal.



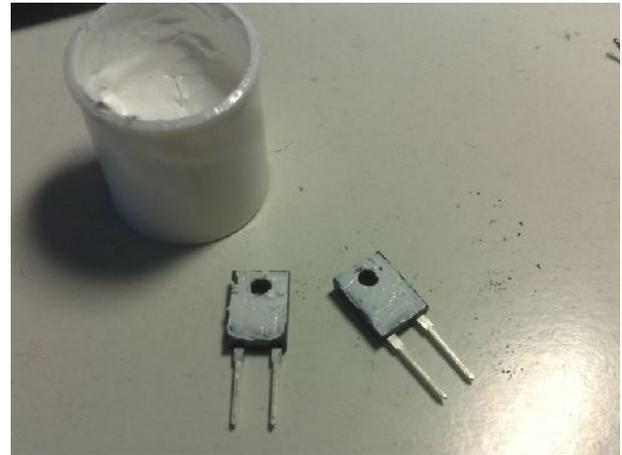
Hold the relay in place with a finger and solder two opposite pins. Turn the board and solder all remaining pins.

Solder also all those little electrolythics caps (pay attention to orientation, the side marked with white or gold fascia is the negative side). Put in place the big snap-ins, turn the PCB and solder them with lot of solder.

Apply (don't solder it, just put in place leaving 1-2mm from bending of pins and PCB) first LM3886 to the PCB. Use it to sign the hole position on heatsink, drill it and then mount the LM3886 to it (if you're using an uninsulated version use an insulator!!!)

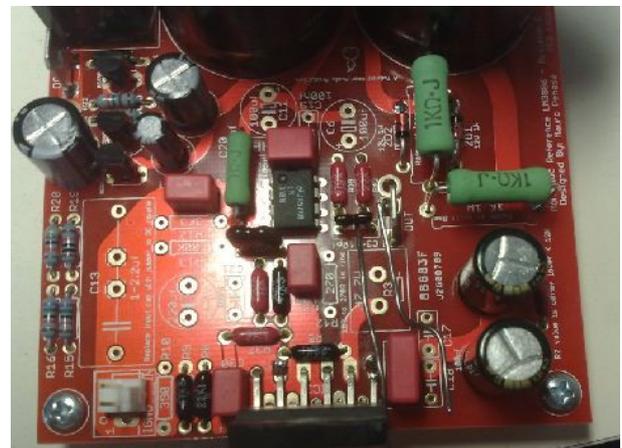
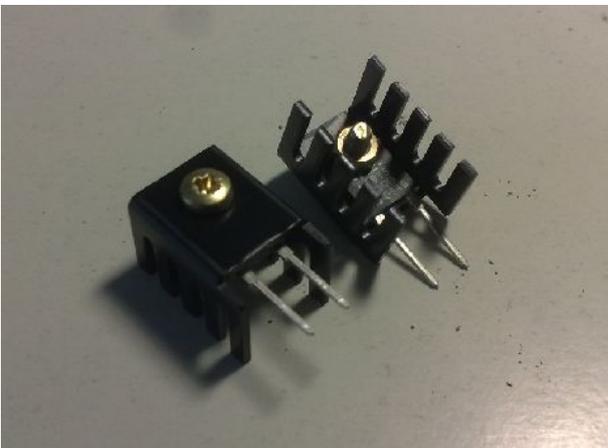


Now insert the LM3886 with heatsink to the PCB, solder two pins on the top. Remove heatsink, turn the board and solder all LM3886's pins. Use the same heatsink for the other monoblock too, so they're identical and you can use any of them to sign hole's position to the other heatsink.



Now we're going to prepare R3s, If yours screw are bigger than resistor's hole you can enlarge it with a screwdriver.

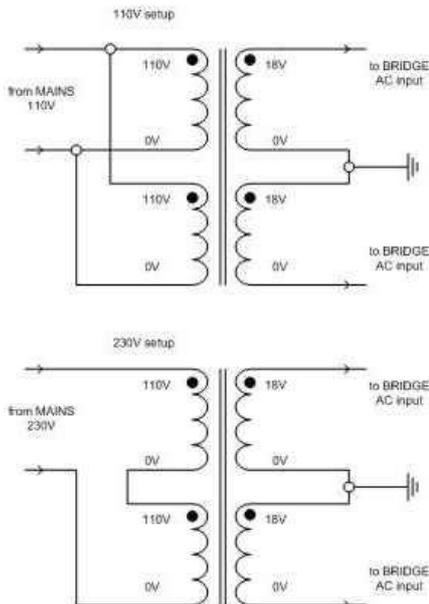
Apply a thin layer of thermal compound and mount them on heatsinks (the one in figure is the tiny one, the recommended one is bigger.)



Since the heatsink could touch C17 hot point it's better to raise it a little, two pieces of solder could help.

Wiring the transformer and simple grounding

For the MyRef we need a center tapped transformer (for example 25-0-25) or a dual secondary (for example 0-25, 0-25) wired as a center tapped one:



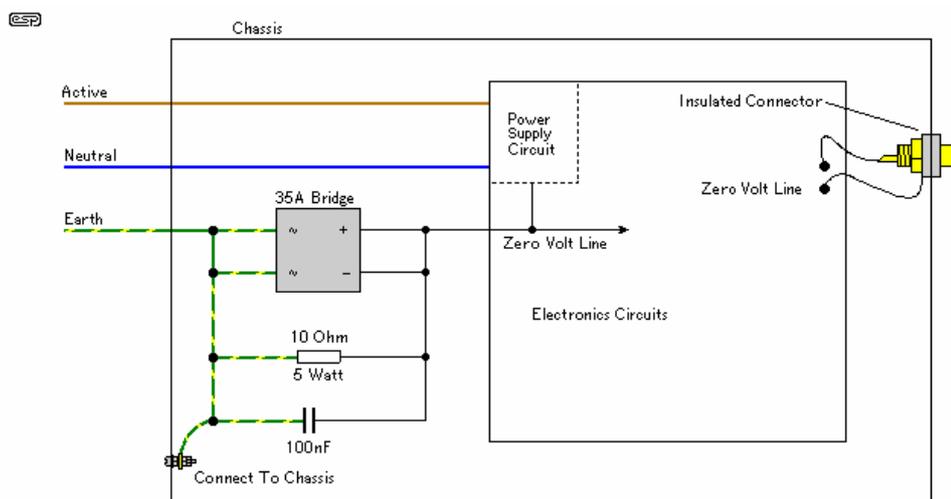
(the two preceding images are from the Decibel Dungeon website)

In the figure Yellow is AC1, Red/Orange is PGND and Red is AC2

Case must be connected to safety ground.

The simplest grounding scheme is to connect directly also PGND to safety ground.

There are better grounding methods like connecting PGND to safety ground via a CL-60 thermistor or using a ground breaker (from ESP website) :



Disclaimer:

This tiny tutorial is incomplete and some resistors and caps aren't illustrated.

Take it as an example build.