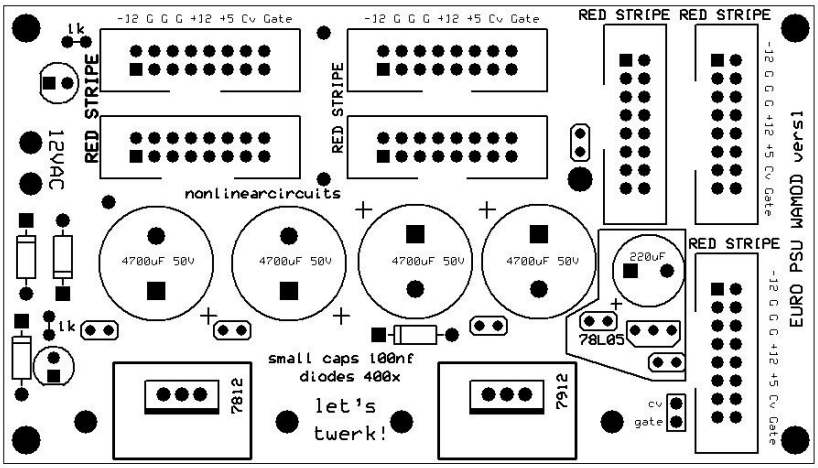
WAMOD #3 Power!

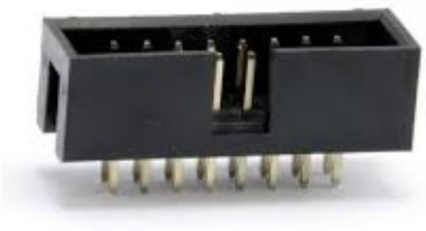
10/6/2014 Artifactory

The task in this workshop is to build a +/-12V power supply, powered by a 12VAC plugpack. The power supply is very conventional. You will not be exposed to any mains voltages. The PCB receives 12VAC from a plugpack/wallwart. The 1N4004 diodes split this into positive and negative waveforms. The 4700uF capacitors then smooth out these waves. The 7812 and 7912 regulators then convert the rectified & smoothed signals to +12V DC and -12V DC and these are fed to the connectors to be distributed to your lovely modules.

Building

1. As usual, start with the lowest components 1st. In this case the seven 16 pin connectors. It is very important these are installed in the correct orientation. If you hold the PCB so the labels "RED STRIPE" is closest to you, the slot in the 16 pin connector will be on the right. See pics below.



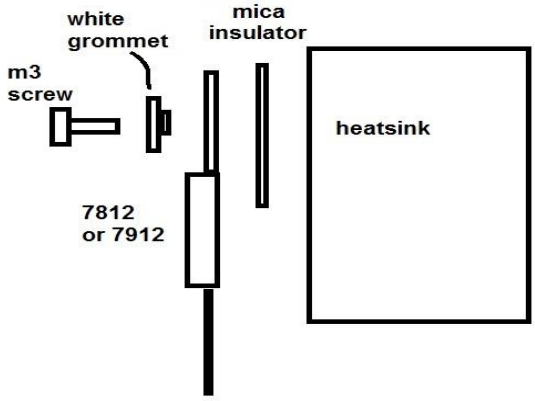


2. Once the connectors are installed, continue on and install the 4 diodes (be careful to match the stripes with the marking on the PCB), then the 4 small capacitors (unmarked, small rectangles), the two resistors (marked 1k) and the 2 LEDs (be careful to line up the flat edge of the LED with the marking on the PCB)

NOTE: *do not install anything in the area marked with a boundary, where you can see '78L05' and '220uF'. This section is for adding a +5V output to the power supply. If* ***Skot*** *designs us an Arduino module we may use it in future, but for now, ignore it.*

3. Install the four 4700uF capacitors; be careful to place the longer lead in the square hole or check the positive side matches the '+' on the PCB.

4. Before installing the 7812 and 7912 regulators, attach the heatsinks to them. It is important the heatsinks are isolated from the regulators, so use the mica insulator and the plastic grommet on the screw. Also put a dab of white heatsink paste on each surface of the mica insulator. The paste is messy and gets onto everything – hooray!



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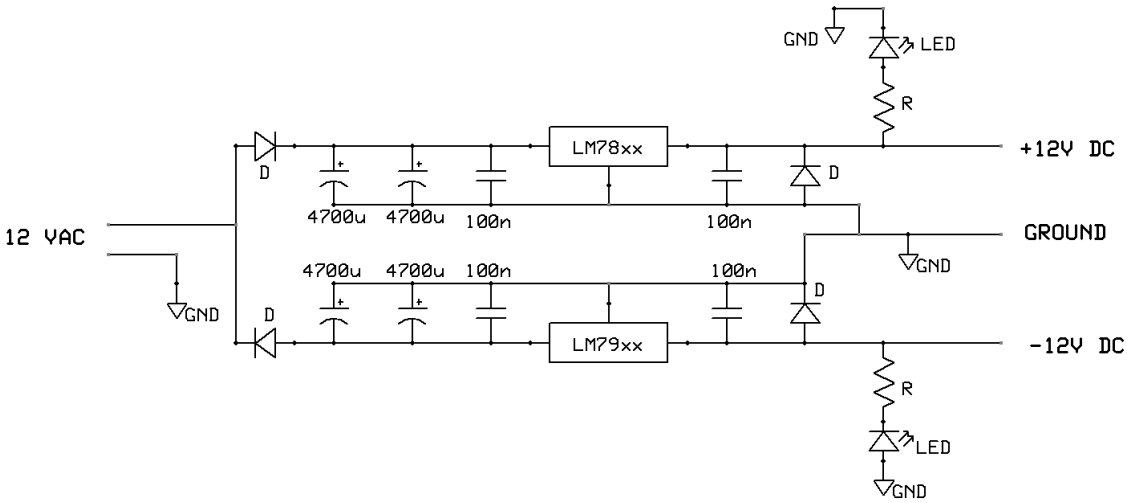
5. Once you have built the regulator/heatsink structures install them on the PCB, with the heatsink on the outside.

6. Measure out two pieces of wire to connect the PSU. Strip, tin and solder them onto the PCB at the '12VAC' holes. Leave the other ends unconnected until tested.

7. Get that geek wearing the goggles to test your build.

8. If all good, install the power supply into your synth case and solder the wires to the red power input socket (also inserted into the side of your case). Test again! Voila? Get up and twerk on your workbench.

9. Time to make some cables



Wallwart/plugpacks (not supplied with kit)

You need a 12VAC 1A plugpack

A plugpack with a greater rating than 1A is fine, actually better. Consider 1A a minimum.

Altronics have this one (M9267A 12V AC 1A Appliance plugpack), if you find another source but are not sure, check with Andrew first.

M9267A • 12V AC 1A Appliance Plugpack