

MM PWM DIY Assembly Guide

Assembling the MM PWM DIY PCB is a relatively easy DIY job provided you have the tools and a bit of willingness. You will need a soldering iron, soldering wire, thin and thick gauge wires and the components for the PCB.

The required components are:

A suitable N-Channel Mosfet. These models are good for the job:

IRLB3034PBF: <https://www.modmaker.com/n-channel-mosfet-irlb3034pbf>

IRLB3813PBF: <https://www.modmaker.com/n-channel-mosfet-irlb3813pbf>

1 x Suitable P-Channel Mosfet: SPD09P0PL G: <https://www.modmaker.com/p-channel-mosfet-spd09p0pl-g>

1 x 555 Timer: <https://www.modmaker.com/555-timer-ne555p>

1 x 0.01uF Capacitor: <https://www.modmaker.com/capacitors-001uf-50v-5>

1 x 0.1uF Capacitor: <https://www.modmaker.com/capacitors-01uf-50v-5>

1 x 1K Resistor: <https://www.modmaker.com/carbon-film-resistors-1kohm-10>

1 x 15K Resistor: <https://www.modmaker.com/carbon-film-resistors-15kohm-10>

2 x Diodes: <https://www.modmaker.com/1n914-diode-5>

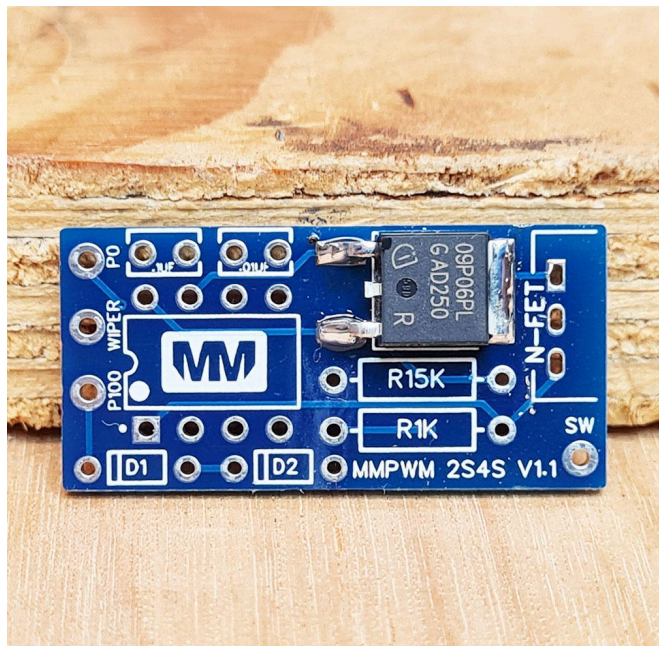
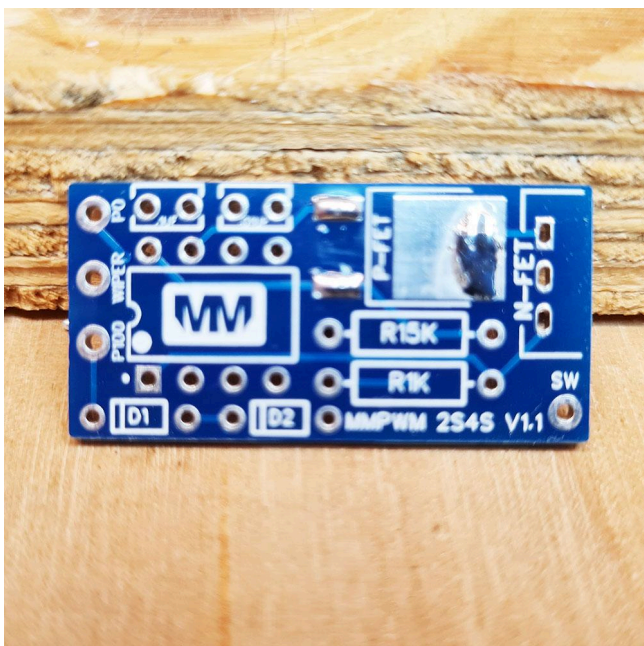
Wiring

We suggest using thin wires for the potentiometer and the switch. These don't carry much current so can be as thin as you like. 24AWG is good: <https://www.modmaker.com/search?controller=search&s=24AWG+silicon+wire>

We suggest using a minimum of 16AWG to carry the power between the batteries, N-Channel Mosfet and the 510 connector. Basically, you will carry the power from the BAT- to the N-Fet Source Pin and from the N-Fet Drain Pin to the 510-. This wire is good: <https://www.modmaker.com/search?controller=search&s=silicon+wire+16AWG>

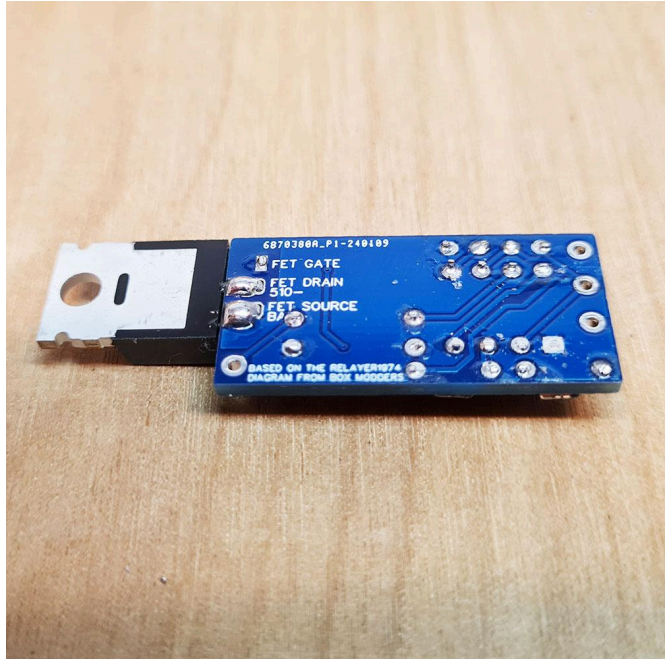
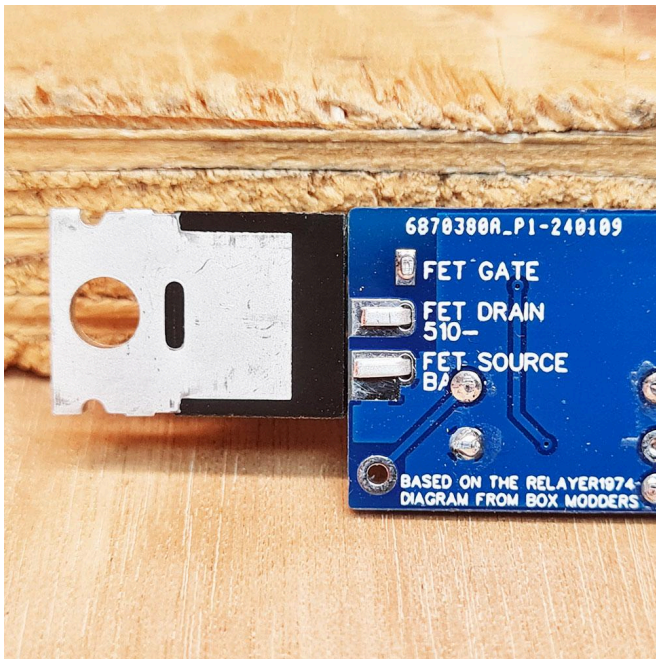
Step By Step Soldering

It's best to get the surface mounted P-Fet first as this would be harder after the other components are soldered. Tin the pads and then push the mosfet on while heating the legs.

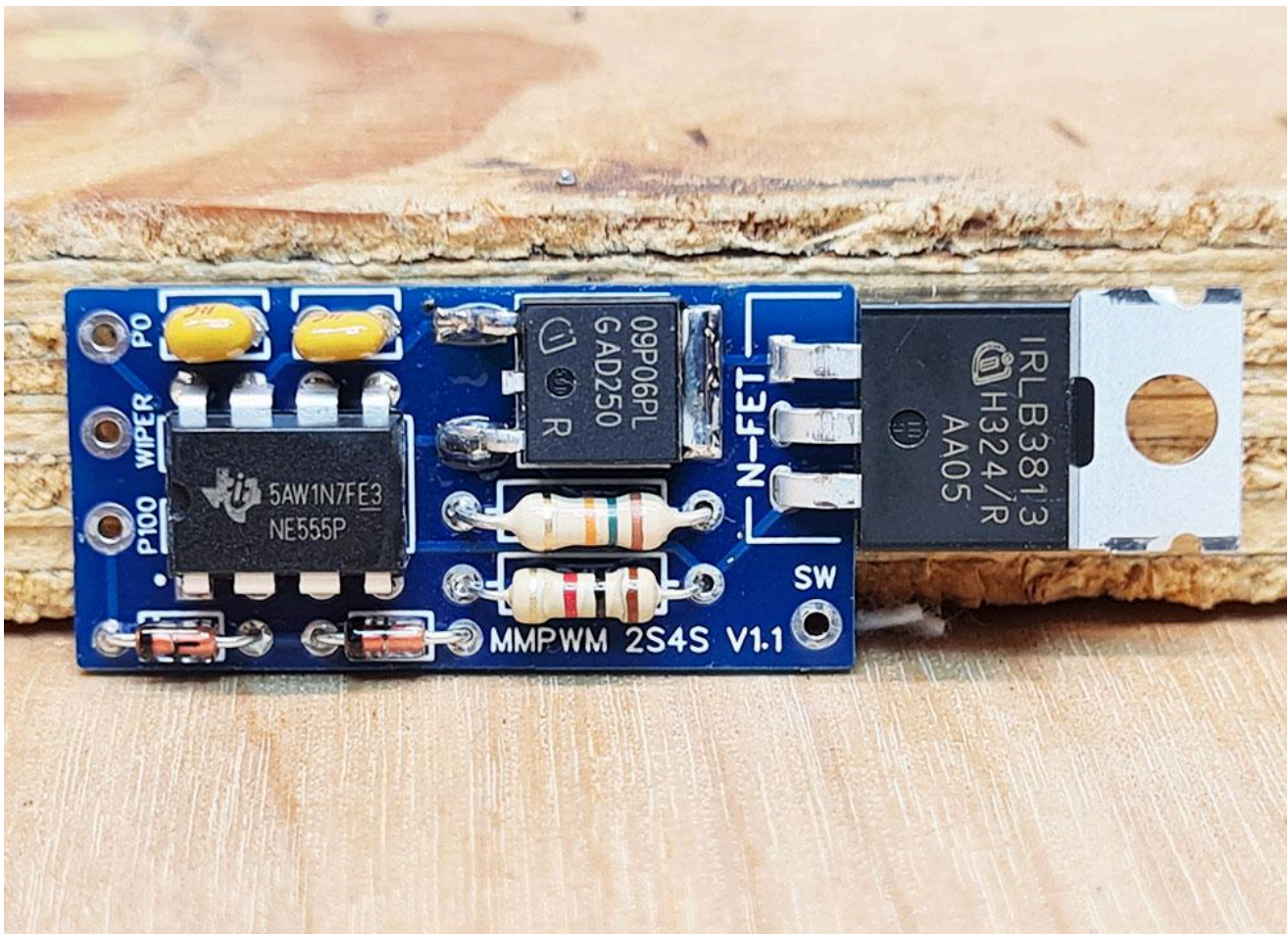


Then push the other components into the PCB in whatever order you like. Leave the N-Channel Mosfet until the rest are soldered. Solder each component and clip of the legs. Make sure you have the 2 diodes around the right way. The

black end of the diode will go where the white line marks are on the PCB. Also make sure you put the 2 different capacitors into the right slots. They look the same but they aren't. Push the N-Channel Mosfet into the slots and solder the mosfet Gate leg. Then clip the excess off of that leg only. Then bend the mosfet over so it lays flat with the board. You can then turn it over, bend, clip and solder those legs like this:



The PCB should look like this:

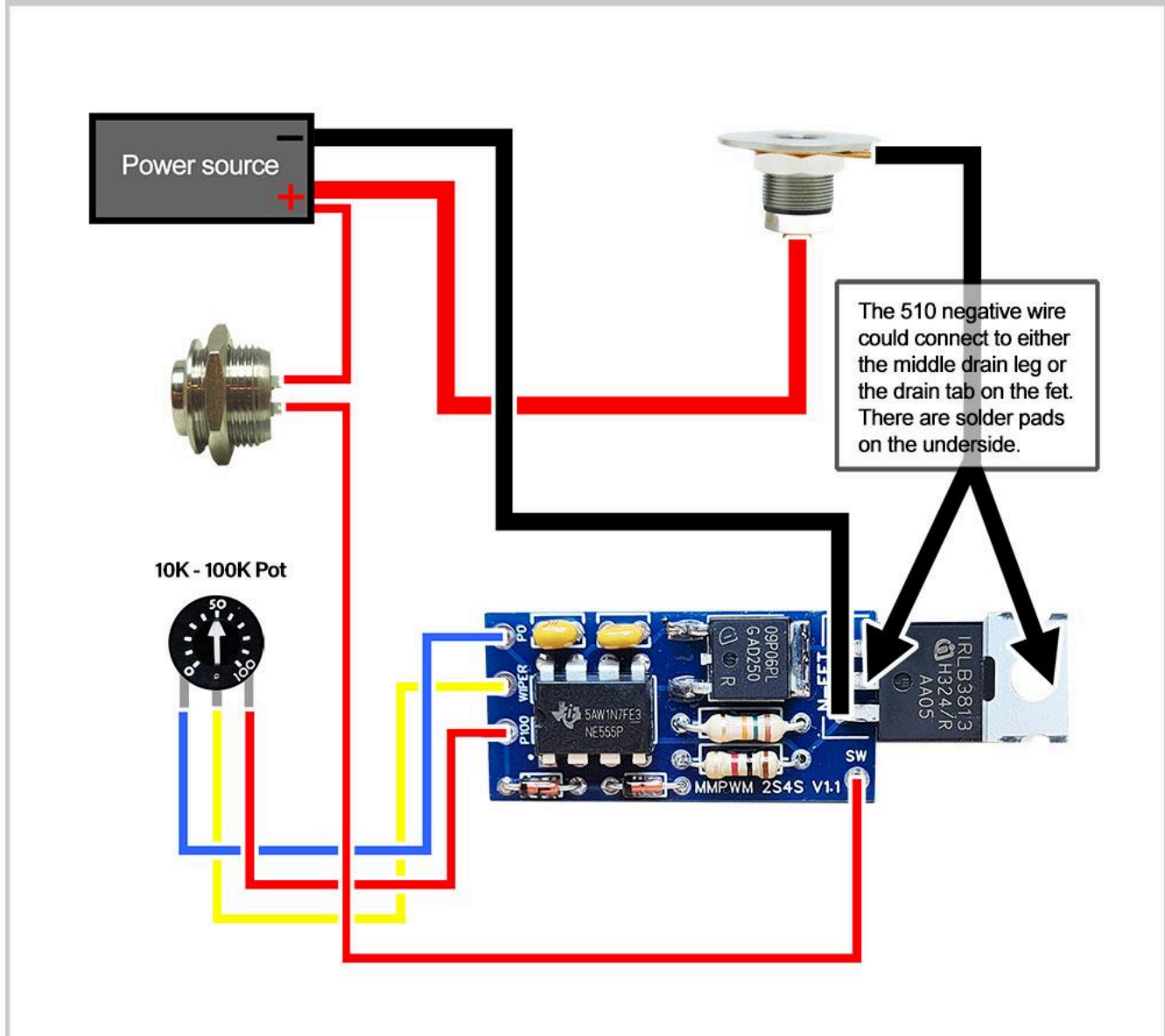


When you come to use the PCB you will have to decide which orientation you'd like to solder the wires as this is personal preference. Note though that there are pads on the underside of the PCB for you to solder

the N-Fet wires to carry the power and you have an option of soldering to the middle drain leg or the main body of the N-Fet. You should tin your wires before soldering to the N-Fet. It makes life a whole lot easier.

Here is a wiring diagram using the completed PCB to see how it would be wired into a mod.

MMPWM DIY PCB Mod Diagram



Enjoy your Pulse Width Modulation mod as it's a great way to control power. If the mod makes a buzzing sound, that's normal as the circuit switches the mosfet on and off very fast and there's no need for concern. Please note though that you should make your coil resistance higher to reduce the current load on the wires. It switches full power on and off so low builds will pull more current through the wires. You won't need to build 0. very low as you have more than enough voltage to power any build however high it is.