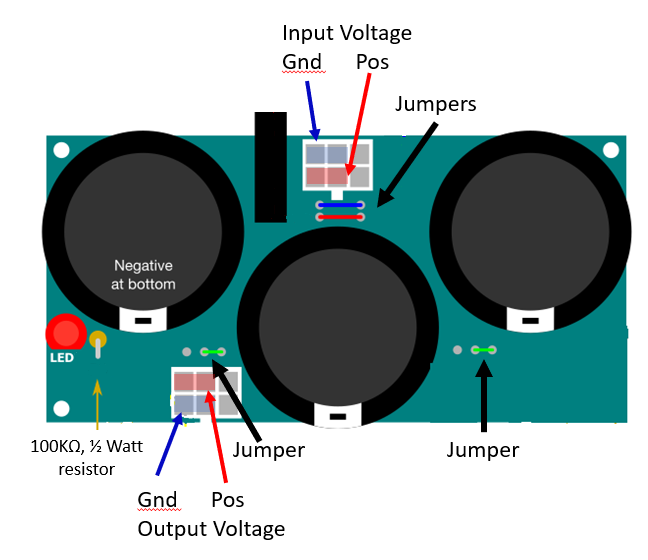
Populating the Power Filter PCB

When the flipper solenoids fire, they soak up a lot of electricity in a short time, which makes the switching power supplies think there is a short circuit and they shut down momentarily. Inserting a power filter board between the high-voltage power supply and the solenoid circuits prevents this shutdown. The power filter contains some large capacitors that store up energy that can be released quickly to energize the flipper coils. The power filter I use was designed by the [Open Pinball Project (OPP)](https://pinballmakers.com/wiki/index.php?title=OPP). This circuit was designed to fulfill a variety of roles, so there are parts of the PCB I do not use.

Parts List:

* 3 bulk capacitors, 8.2mF, 63V (Mouser Part 598-SLPX822M063H5P3)
* 1 NTC Thermistor Inrush current limiter (Mouser Part 995-SG26)
* 1 resistor, 100KΩ, ½ watt
* LED

Install the three bulk capacitors, one NTC thermistor (install in left position), the LED, and resistor. Using the clipped off leads from the NTC thermistor, add the red, blue, and green jumpers as seen in the image below. I do not bother with the Molex connectors; instead, I solder wire leads as shown in the photo on the next page.



A close-up of a circuit board

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