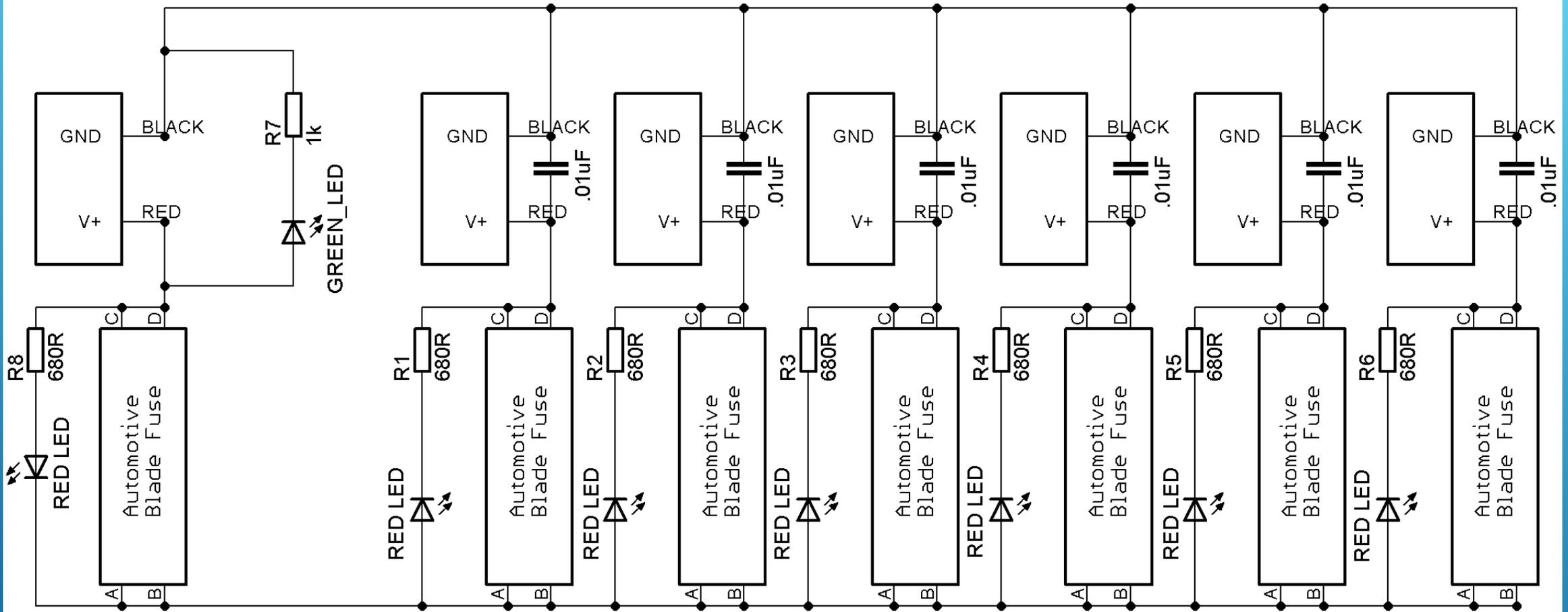


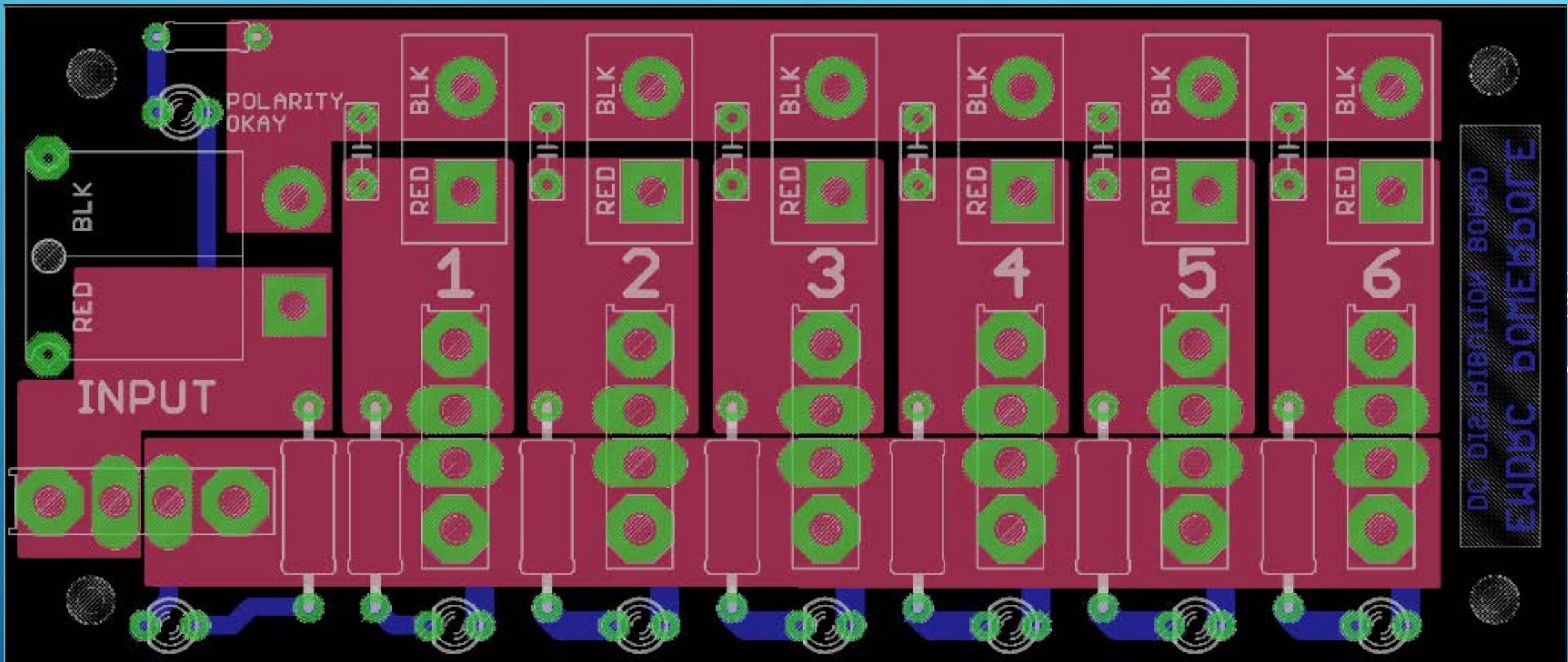
THE 'JOHNSON PROJECT'

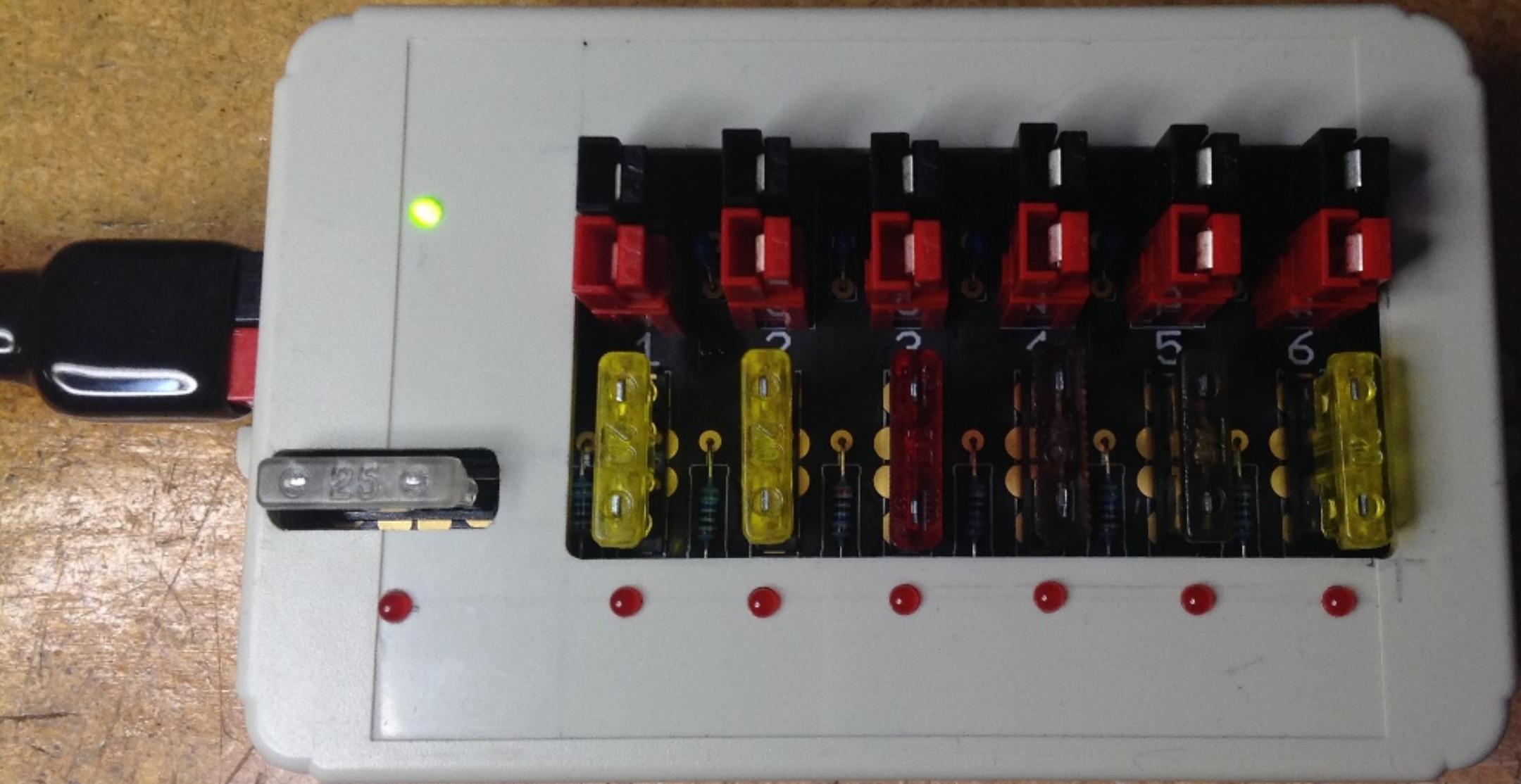
A POWERPOLE DC DISTRIBUTION BOARD
BY EMDRC

Schematic



PCB Artwork

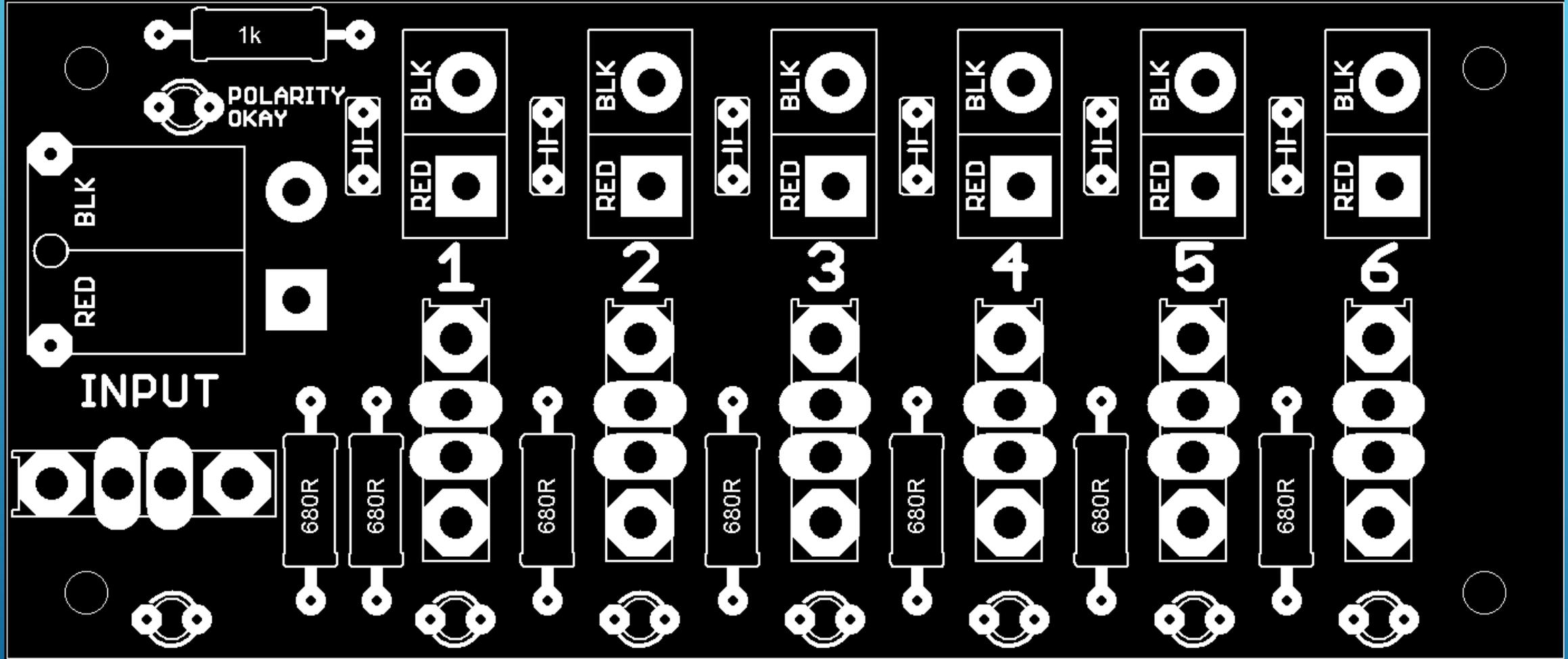




FEATURES

- ▶ 1 input / 6 output Anderson Powerpole connectors
- ▶ Fuse protection provided at the DC input
- ▶ "POLARITY OKAY" LED (green)
- ▶ All outputs are individually protected with automotive fuses and genuine fuse holders
- ▶ All outputs are individually bypassed with 100nF caps
- ▶ All fuses have Red LEDs which illuminate if a fuse is blown (and a load is connected)
- ▶ Capable of supplying 30 Amps total DC current
- ▶ Measured <200mV drop (worst case) @ 20A current
- ▶ Estimated <300mV drop (worst case) @ 30A current
- ▶ High quality PCB for easy construction:
 - ▶ 3oz. heavy duty double sided copper (3oz per square foot)
 - ▶ High-Tg rated industrial grade PCB (Tg=170degrees)
 - ▶ Gold plated for easy soldering (requires 60-100W soldering iron)
- ▶ Design target of <7 degrees temp rise @ 30 Amps (measured 4 deg rise @ 20A)
- ▶ Milled enclosure with all mounting hardware supplied

Component Overlay



ASSEMBLY INSTRUCTIONS (PRELIMINARY)

- ▶ Place and solder the 7 x 680-ohm resistors and the 1 x 1kohm resistor, as per the component overlay
- ▶ Place and solder the 6 x 0.1uF bypass capacitors
- ▶ Place and solder the 7 x fuse holders, ensuring they are firmly seated flush with the PCB
- ▶ Prepare the Anderson connectors by sliding the red and black poles together (there are two ways to do this and it must be done the 'right' way. Refer to the single pre-assembled connector pair that has been supplied with the kit and duplicate this orientation for the others
- ▶ Insert the two 'stranded' cables with the pre-crimped Anderson poles into the input connector, as per the overlay. Then bending the wire at 90degrees, clamp the input connector to the PCB using the supplied 2mm machine screw, washers and nut
- ▶ Solder the stranded wires on the PCB using a hot 60-100W class soldering iron.
- ▶ Cut all the 'solid' copper wire pins (as per the supplied sample) and crimp the Anderson poles.
- ▶ Ensuring the Anderson connectors are firmly held against the PCB to prevent sideways movement, insert into the output connector holes on the PCB, as per the overlay, and solder using a hot 60-100W class soldering iron.
- ▶ For the next two steps, the 'FLAT' side (the Cathode) of all seven LEDs should be oriented towards the left side of the PCB, as per the PCB Artwork image. **LEAVE ALL LED LEADS LONG & UNTRIMMED. DO NOT SOLDER THE LEDS YET**
- ▶ Insert the single Green LED into the POLARITY OKAY holes on the PCB, but **DO NOT SOLDER**
- ▶ Insert the 6 x RED LEDs into the remaining LED PCB holes and again **DO NOT SOLDER**
- ▶ Screw the thread of the four brass standoffs into the moulded mounting holes on the inside of the enclosure lid
- ▶ Turning the PCB upside down and whilst positioning into the four brass standoffs, ensure that all LEDs protrude through the holes and are pushed firmly until they are nicely seated.
- ▶ Mount the PCB into position using the supplied M3 machine screws
- ▶ When you are satisfied that all components are positioned correctly, then solder all LEDs
- ▶ Screw the ABS plastic base onto the enclosure lid using the supplied (4) self tapping screws
- ▶ Relax you are done and deserve a rest!