Generation Strip-board Layout

The strip circuit board has copper tracks on one side of the board only – the 'track side'. Components are fitted on the plain side of the board with the component leads pushed through the holes. The leads are soldered to the track on the other (track) side of the board. The size of the circuit board you use can be different from the one I used. The board must have at least 24 copper strips of 29 holes long.

The pictures **shows the layout from the plain side of the board** and the component placing.

The black dots (9) are wire connections for input, output, reset and power supply. I suggest using solder pins in the 'Bill of Materials' for these wire anchor points. The black lines are wire links (15).

I used one 16 pin and one 14 pin socket for the ICs U2 and U3. You do not need to use the sockets, but I prefer to use them because I can turn on the power and make measurements before inserting the ICs. The ICs must be fitted the correct way round. The ICs and sockets are usually marked with a notch at one end. I have shown the position of the notch on the two pictures. If there is no notch on the ICs, then pin1 is marked by a depressed circle in the plastic; this is at the notched end.

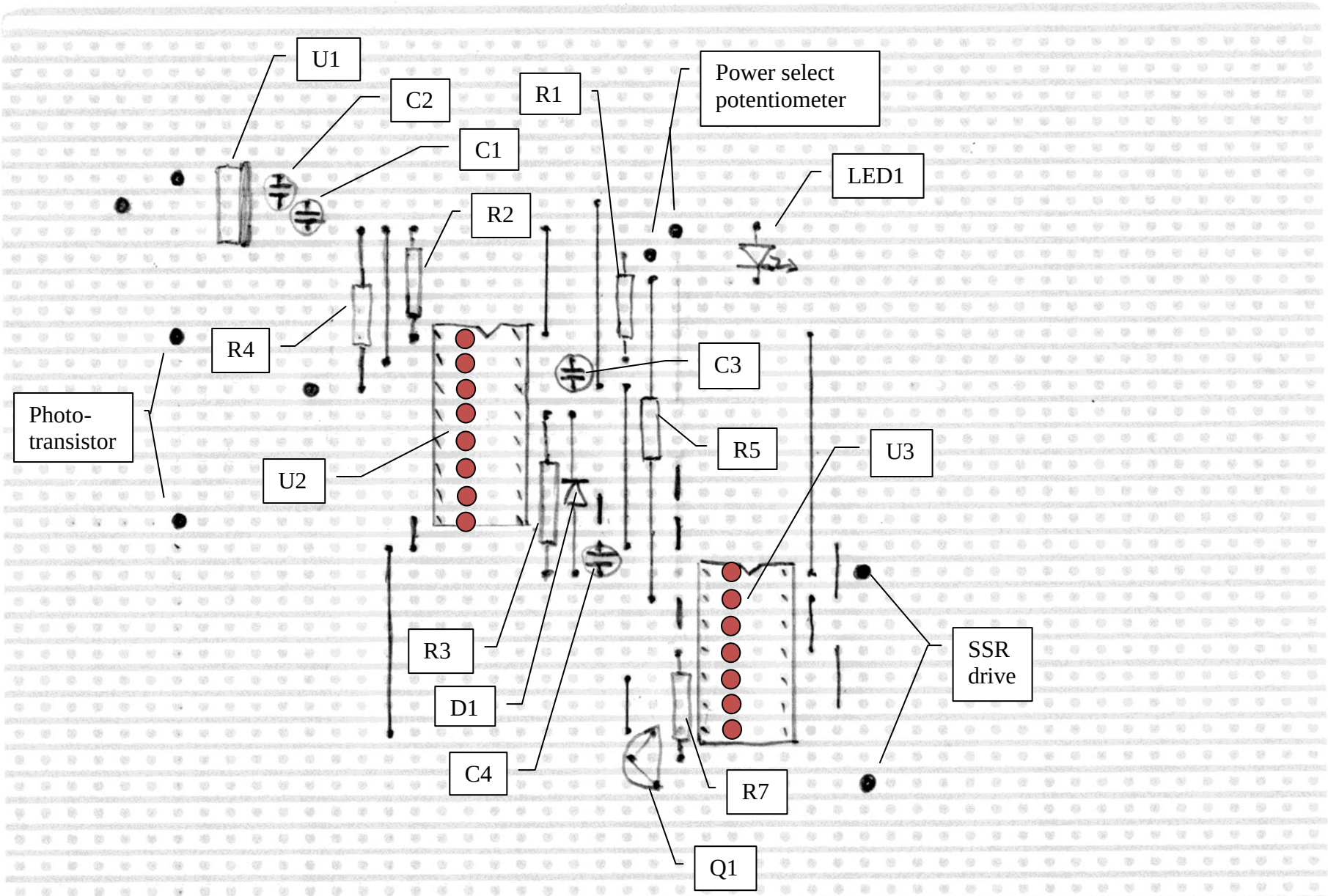
The track side of the board needs a few cuts in the track (I have suggested a suitable spot cutter in the 'Bill of Materials'). There are 15 track cuts. These cuts are marked by the red dots on the picture.

When you make the track cuts, check carefully that you have cut away the full width of the track and that there are no loose 'whiskers' of track left that may cause short circuits to adjacent tracks.

Once having cut the tracks and fitted the components to the circuit board and those at the ends of the leads off the board, it's time to turn on. Nothing should get hot. The only item which may become mildly warm is the 470 Ohm resistor, R5, when the LED is on. The LED turns on when you are generating more power than set on the power control knob. Use something similar to blu-tack to attach the phototransistor to the generation meter so that the dome of the phototransistor is against the LED on the meter.

The solid-state relay which is used with this circuit is rated at 25 Amps, but only when it is attached to a metal heatsink with adequate air flow round it. Remember to be careful as the solid-state relay will have mains voltage on its power terminals.

If you are having problems with the circuit I am quite happy for you to drop me an email. I may not be able to reply immediately as I will be taking a few weeks away. It is not wise for me to leave an plain email address on this website as the automatic Spam trawlers soon pick it up. I'm sure it is sufficient to say that the website base address of fowlerelectronics.co.uk can be used with 'solarpv at' to complete a working address.


U1
C2
C1
R2
R4
Photo-
transistor
U2
R1
Power select
potentiometer
LED1
C3
R5
U3
R3
D1
C4
R7
SSR
drive
Q1