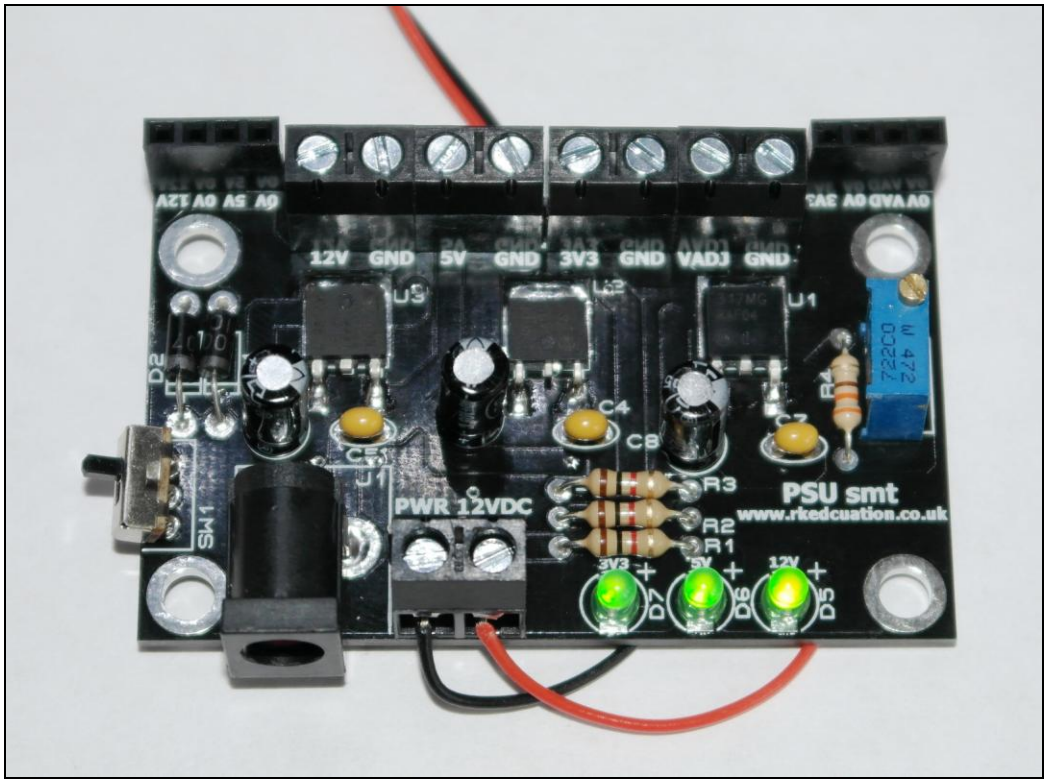
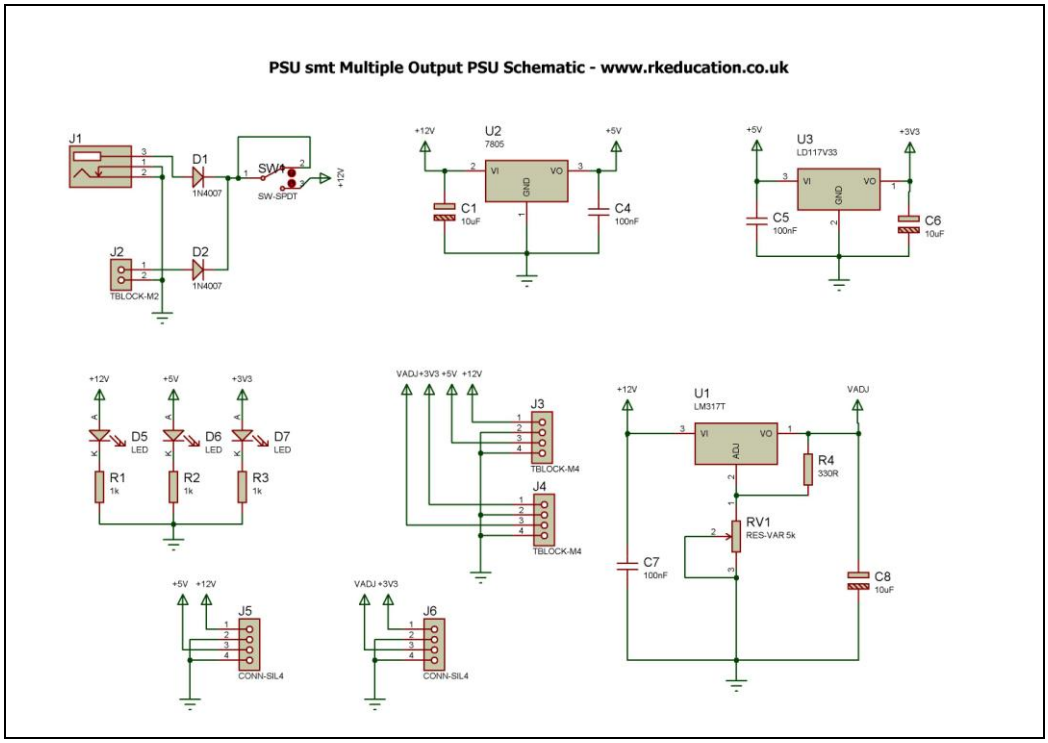
Multiple Output SMT Power Supply Project
Component List





Schematic Diagram

Component List

C1 – 10uF electrolytic radial
C4 - 100nF multilayer ceramic
C5 - 100nF multilayer ceramic
C6 - 10uF electrolytic radial
C7 - 100nF multilayer ceramic
C8 - 10uF electrolytic radial
D1, D2 – 1N400x diodes
D5, D6, D7 - LEDs
J1 - DC power socket 2.1mm
J2 - 2 way 5mm PCB terminal blocks
J3 ~ J4 – 2/4 way 5mm PCB terminal blocks
J5, J6 - SIL sockets
R1, R2, R3 - 1k 1/4 watt resistor
R4 – 330R 1/4 watt resistor
RV1 - 4k7 variable resistor
SW1 - Ultra miniature PCB slide switch
U1 – LM317 TO252 variable voltage regulator
U2 –7805 TO252 5V regulator
U3 - LD1117 V33 3V3 regulator

Description

The PSU smt Power Supply has been designed for electronic project work and is ideal to use with electronic projects.

- Small and compact
- Easily connected to breadboards and stripboards
- Uses LM317T, 7805 and LD1117 voltage regulators
- Has a variable output – uses a LM317T variable voltage regulator
- Quad output, outputs the input voltage, variable and regulated 5VDC and 3.3VDC (please note that the input voltage will be reduced by 0.7V due to the diode)
- Power switch and LED power indicators

Instructions

When constructing PCBs always start with the components with the lowest profile, for example the surface mount ICs.

Once constructed operation is simple, input 12VDC and the unit will output approx 11VDC, regulated 5VDC and 3V3 and a variable output,

to vary this voltage adjust RV1. To ensure the unit is operating correctly test the voltages with a digital multi meter – DVM. The unit has 1N4007 diodes in series with the input voltage incase of reverse polarity, this reduces the input voltage by approx. 0.7V, to overcome this they can be replaced with shorting links or the input voltage can be increased.

To use simply connect the output from the unit to the target circuit using jumper wires inserted into the terminal blocks.

When using the power supply with high output currents the components will become hot and will need heat sinking to prevent damage.

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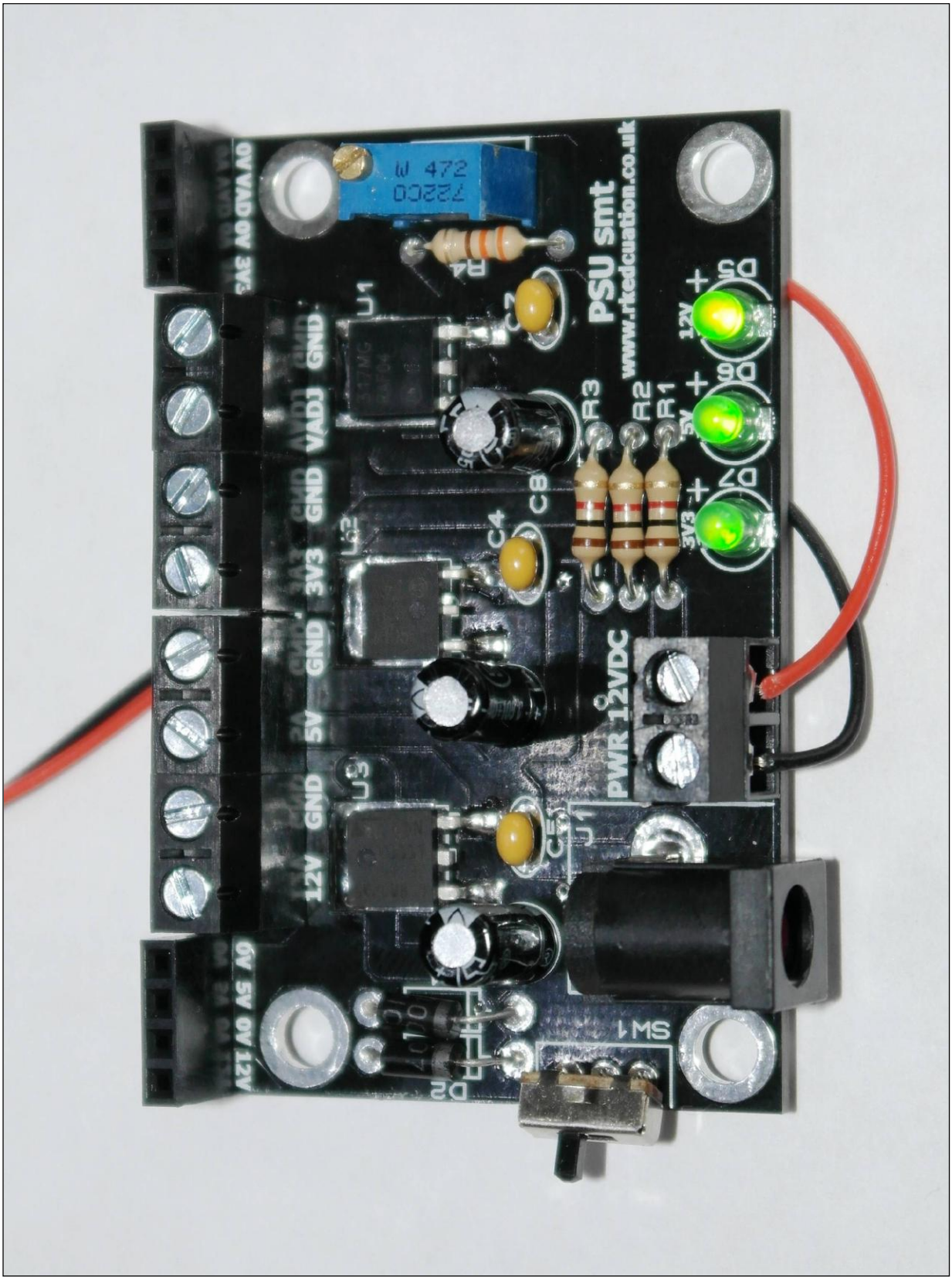
PSU smt
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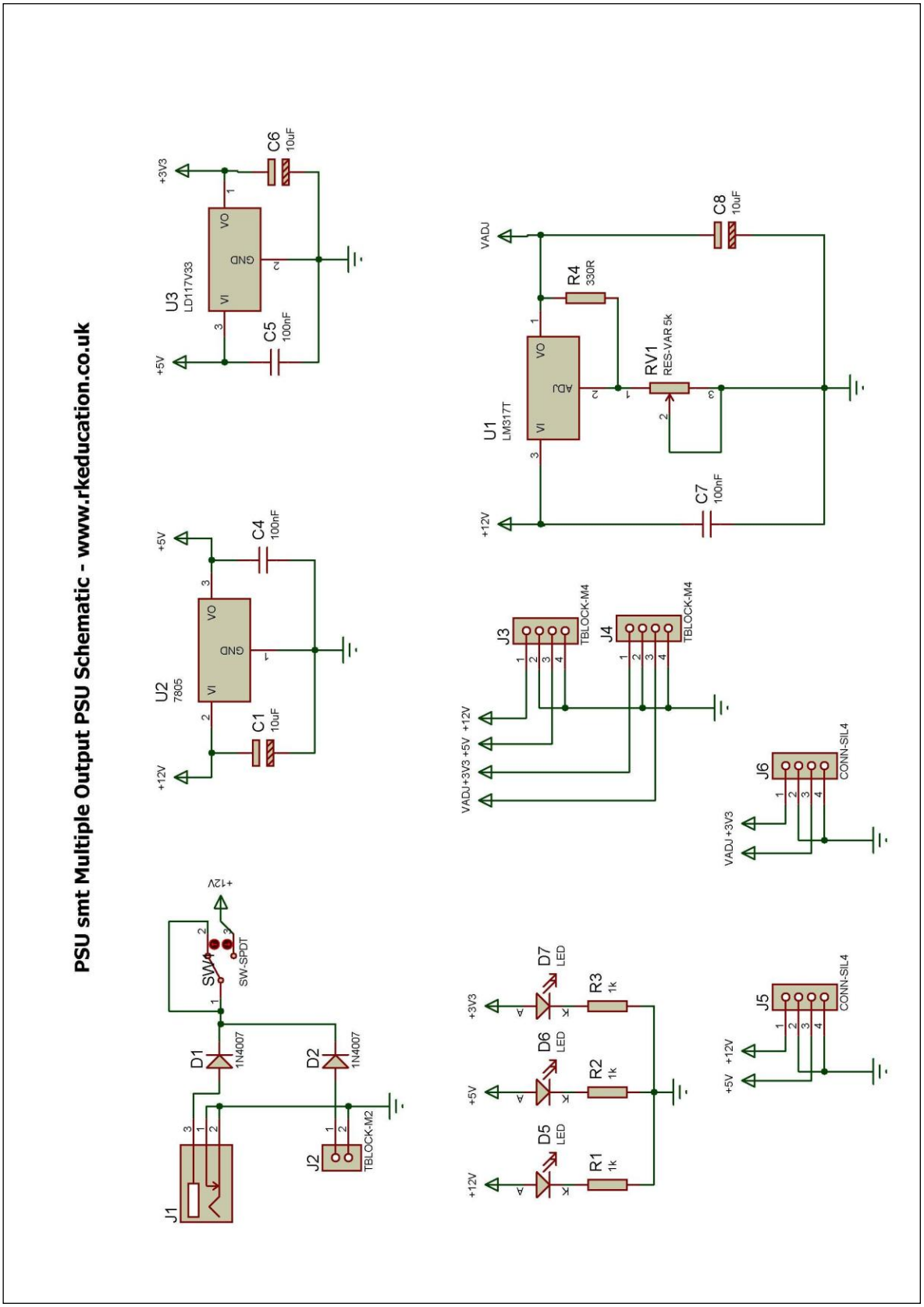
PWR 12VDC
SW1
U1
U2
U3
R1
R2
R3
R4
C4
C8
D5
D6
D7
12V
5V
3V3
GND
VADJ


PSU smt Multiple Output PSU Schematic - www.rkeducation.co.uk
+3V3
C6
10uF
U3
LD1117V33
VO
GND
VI
C5
100nF
+5V
C4
100nF
U2
7805
C1
10uF
+12V
VADJ
C8
10uF
R4
330R
RV1
RES-VAR 5k
U1
LM317T
ADJ
C7
100nF
J3
TBLOCK-M4
J4
TBLOCK-M4
VADJ+3V3 +5V +12V
J6
CONN-SIL4
VADJ+3V3
+12V
SW1
SW-SPDT
D1
1N4007
D2
1N4007
J1
J2
TBLOCK-M2
D7
LED
R3
1k
D6
LED
R2
1k
D5
LED
R1
1k
J5
CONN-SIL4
+5V +12V