

# EK031 – LM317 Regulator

## Kit description:

EK031 is a linear voltage regulator with rectifier, that enables it to be powered by either an AC voltage from a transformer or a DC voltage from an (un)regulated DC source. The output voltage can be adjusted using the included trimmer potentiometer (VR1). The board also has a pattern for a larger panel-mounted potentiometer (sold separately), for easier adjustment. The circuit is based around the well-known LM317 regulator and can be powered with voltages from around 4V to 40V. To ensure proper regulation, the input voltage must be around 2V higher than the



set output voltage. If the input voltage is DC, the diode rectifier can be bypassed using wires or component leads (see markings on the back side of the board). The regulator will require cooling in most applications as the difference between input and output voltage will be converted into heat. Please note that the exposed metal on the regulator tab is internally connected to VOUT and should be isolated if mounted to a heatsink or chassis with a different potential. The included screw terminals will fit wires from around 0.5 to 2.5mm<sup>2</sup>.

- \* Supply voltage: ~4 - 40VDC
- \* Output voltage: 1.25 – 32V (at least 2V above input voltage)
- \* Dimensions: 36 x 36mm
- \* Mounting holes: c-c 31 x 31mm,  $\varnothing$ 2.5mm

## Assembly guide:

Before soldering anything, please inspect the PCB and make sure it's free from damages. Check that all the components are included, compare with the component list below.

Start by mounting the smallest components. Resistors, ceramic capacitors and diodes will be mounted first. The regulator, trimmer pot, connectors and electrolytic capacitor last. Some components are polarized and must be mounted in the correct orientation. Double check the markings on the PCB!

## Component list:

RefDes	Value	Qty	Art.nr.	
C1	2200uF 50V	1	41024619	
C2, C5	100nF 50V	2	41003038	
C3, C4	10uF 50V	2	40520021	
D1 – D6	1N4004	6	40310004	
LD1	LED 3mm red	1	40307000	
R1	200ohm	1	40811220	
R2	2.2kohm	1	40811322	
U1	LM317T	1	40350028	
VR1	5k 3266Y	1	40900450	
VR2	5k 16mm	0	40910026	Sold separately

## Schematic:

