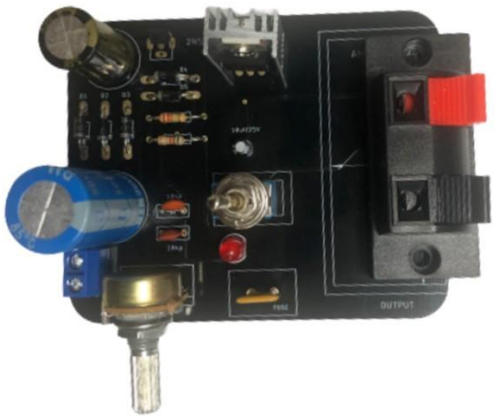
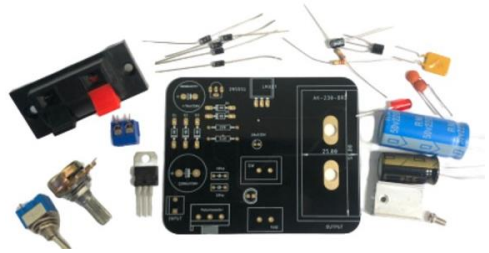
AK-230
DIY 30VDC Regulated Power Supply
(0-30VDC/1A)



Parts Included:

- **Diodes:** 1N4007(5)
- **Transistors:** 2N5551(1)
- **Capacitors:** 470uf/50V (1), 10uf/25V (1), 2200uf/50V (1),0.1uf (CD104-2).
- **Resistors:** 5.1K Ohm (1), 220 Ohm (1)
- Switch (1), 5K Mini Potentiometer (1), 5mm 2 pin Terminal block (1).
- Speaker Terminal (1), Heat Sink for TO220,5mm Red LED (1).
- 3mm Screw (1)
- One PCB Board.



Let us Begin Soldering!

We Require Solder Iron, Flux and Solder Wire.

This Manual does not talk more about soldering, you need to know basics of how to use solder.

#The PCB Side with names and symbols is “TOP” and opposite side is “BOTTOM”. We need to place the components on the TOP and solder to the BOTTOM.

Step 1: Start with Diodes. Solder all 1N4007 diodes at their respective places on the PCB. The diode is labelled with its name on PCB top.
* White mark on the diode indicates the N side (Cathode).

The polarity of the Diode is important. The White band on the diode should go to the same direction of white band on the PCB TOP.

Step 2: Solder all the Resistors at their respective places. Use marking on PCB TOP. *Direction does not matter.

Step 3: Attach Heatsink to the LM317T Regulator with the M3 screw provided and then solder on to the PCB Top as indicated.

Step 4: Solder 5k potentiometer and 5mm LED on their respective indicators on the PCB top. For LED, The bigger lead goes into +Ve. Please follow as shown in the image below.

Step 5: Solder the Capacitors. In the Kit there are two types, Polarized and ceramic. The polarized should be soldered carefully. * The marking on the polarized capacitors indicates for +Ve and -Ve. Match the +Ve and -Ve to the marking on the PCB. Solder the ceramic capacitors in any direction.

Polarised Capacitors in the Kit:2200uf/50V, 470uf/63V,10uf/25V.

Ceramic Capacitors in the Kit: 104p(0.1uf)

Step 6: Now, solder the Terminal blocks with the screw holes facing outward.

There are two terminal blocks in the kit. One is for input(5mm) and other speaker terminal block is for output. Follow image below.

**Please fill the hole of speaker terminal block with solder on the back of the PCB. The hole is big for some of the terminal blocks in the kit.

Step 7: Solder the 2N5551 transistor and fuse at their respective places. For transistor, follow the logo on the PCB board. Whereas for fuse, no directions.

Step 8: Solder Toggle Switch provided in the kit. Sometimes the drill hole will exactly fit the switch, you need to press hard to fix in to the holes.

Now, its time to Connect your input and get output voltage. Use potentiometer to increase or decrease the voltage. You can give AC or DC input between 5-30V to get DC output between 0-30VDC.

Note: Remember, as it works with Linear regulator, due to heat loss you much give higher input voltage than require output voltage. For example, you need to give 25V AC or DC to get output between 0-23VDC.

Precautions:

- Before Powering on, ensure that the excess lead lengths are cut off on the bottom side of the PCB and there are no shorts or components leads touching each other.
- Reverify the direction of components soldered. It should be as per instructed.

Note: This Kit is not for beginners and be careful before connecting transformer. Any fault soldering will cause damage to the board and components.