



# FUTURE KIT

HIGH QUALITY ELECTRONIC KITS

## VARIABLE REGULATOR 0-30V. 3A.

CODE 809

LEVEL 2

This regulator circuit is high efficiency because of IC regulator. It is designed to prevent over power supply maximum to 3A, so it requires transformer 4A. with 12-0-12 pole. If lesser than 12V, connecting 12 pole with 0. If more than 12V, connecting 12 pole with 12. Connecting switch according to the figure.

### Technical specifications:

- need transformer : 12-0-12V 4A.
- voltage output : 0-30VDC (adjustable)
- current maximum : 3A.
- PCB dimensions : 3.08x1.95 inches.

### How to works:

AC from transformer transfers through bridge rectifier diode set which composes of 4 bridge diode changing AC to DC by having C1 as a filter before sending to regulator circuit. Parallel R value (R1-R5) will be decreased to 2 ohms to detect voltage. If there is over 3A. voltage, voltage at the base is 0.6 volt, making TR3 works. Ther will high voltage at the collector of TR3 and connecting with the base of TR1 making TR1 unworkable, voltage output is down respectively.

### PCB assembly:

Shown in Figure 3 is the assembled PCB. Starting with the lowest height components first, taking care not to short any tracks or touch the edge connector with solder. Some tracks run under components, and care should be taken not to short out these tracks. All components with axial leads should be carefully bent to fit the position on the PCB and then soldered into place. Make sure that the electrolytic capacitors are inserted the correct way around. The LED has a flat spot on the body which lines up with the line on the overlay. Now check that you really did mount them all the right way round!

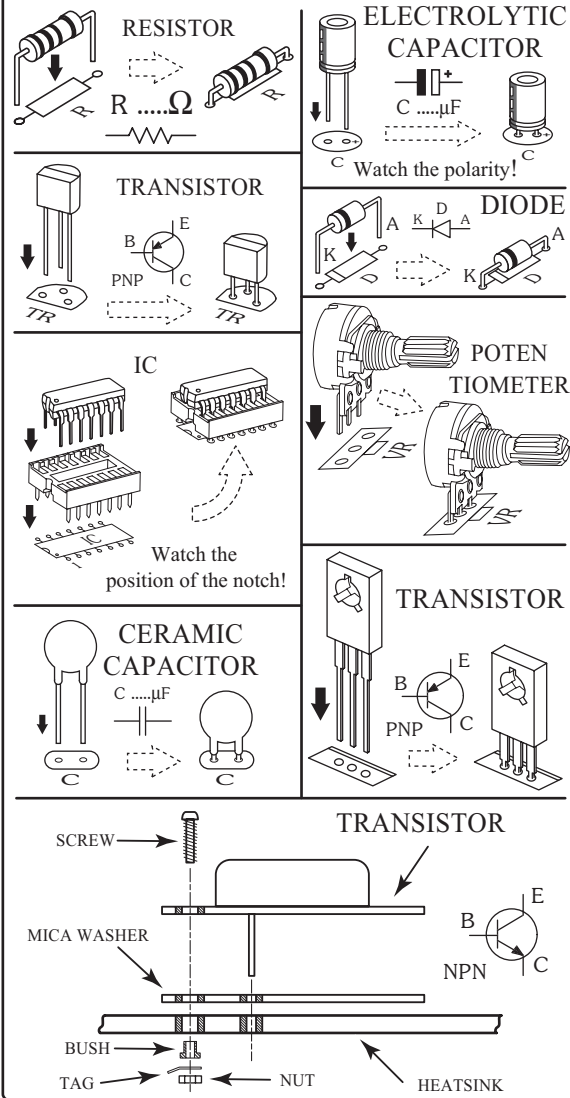
### Testing:

Connecting transformer from 12, 12 coil to AC and measuring current at "OUT" point. Setting voltmeter at range 50VDC. There would be 0.2-30 volts when adjusting VR1 from minimum to maximum.

### Application:

Connecting 12, 0 through switch as per figure 3 shown that requires 0-12 volts. If over 12 volts required, switching to 12, 12 in order to reduce transistor heating OUT is suggested to connect through 3A. Fuse prior to actual usage.

### Figure 1. Installing the componants



### Troubleshooting:

The most problem like the fault soldering. Check all the soldering joint suspicious. If you discover the short track or the short soldering joint, re-solder at that point and check other the soldering joint. Check the position of all component on the PCB. See that there are no components missing or inserted in the wrong places. Make sure that all the polarised components have been soldered the right way round.

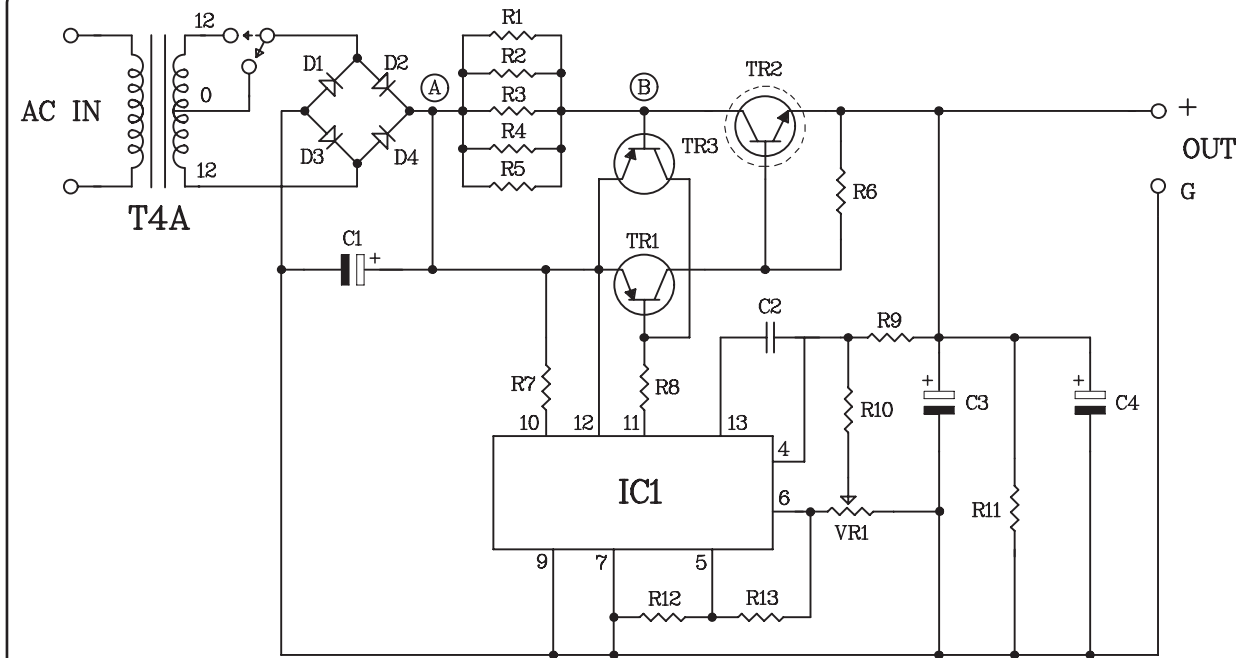
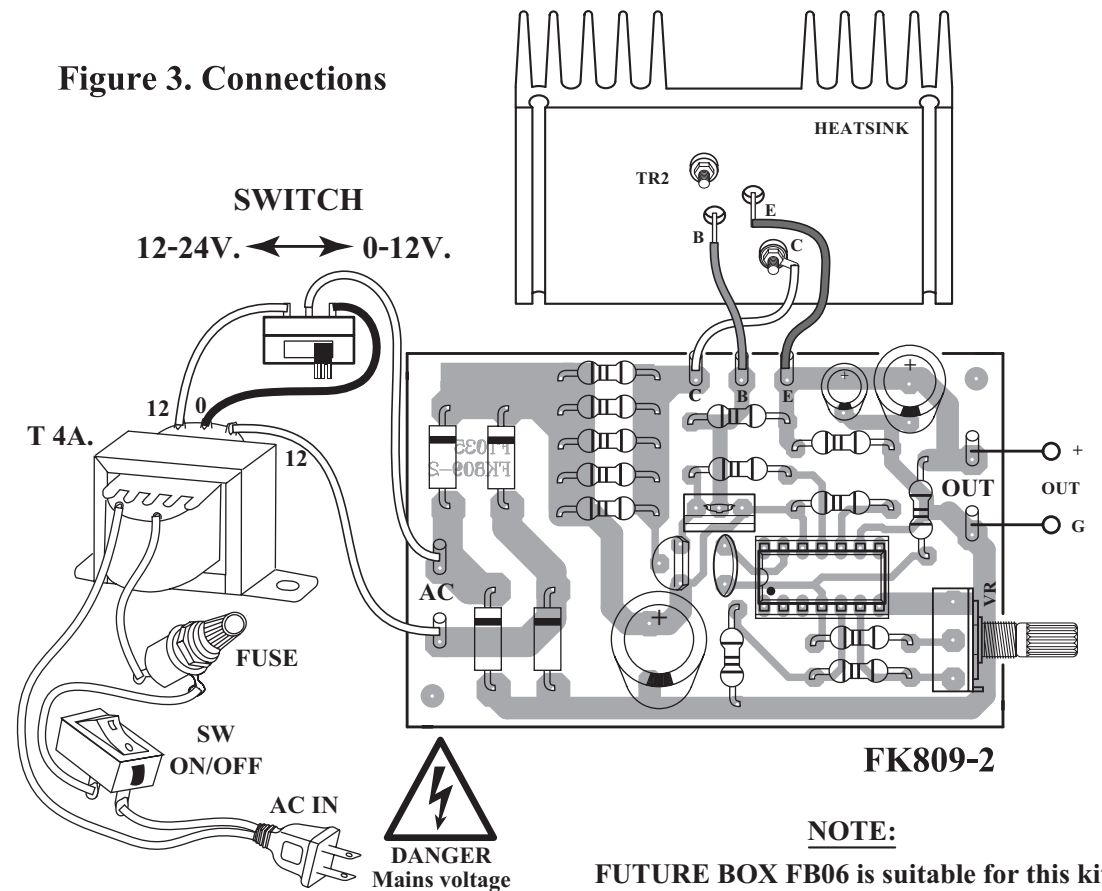


Figure 2. The variable regulator 0-30V. 3A. circuit

### Figure 3. Connections



**NOTE:**  
FUTURE BOX FB06 is suitable for this kit.