

**VARIABLE REGULATOR 0-30V. 1A.**  
**CODE 808** **LEVEL 1**

Regulator circuit control DC to be consistent. This circuit is not only control voltage to be directed but has volume for voltage adjustment between 1.5-30V current maximum 1A. This circuit has rectifier on PC-board. The circuit is working only by giving 24VAC.

Technical specifications:

- need transformer : 12-0-12V 1A.
- voltage output : 1.5-30VDC (adjustable)
- current maximum : 1A.
- PCB dimensions : 2.40x1.65 inches.

How it works:

Connecting 24 VAC from transformer with diode to rectify AC to 32VDC. C1 is a filter. TR2 transfers current to output. Bias current is taken from TR1, TR2 bias is taken from R2. When TR1 bias, TR1 will conduct current. The base of TR1 less, output will have less current accordingly. We use TR3 to control voltage divider at the base of TR1 to ground. If we turn volume to maximum, voltage at positive pole of output will transfer to R6 to bias TR3 to conduct current. In this case, the base of TR2 does not have voltage, output will be less also. If we turn volume to negative pole, the base of TR3 will have low voltage, TR3 conduct less current while TR2 conduct more, output will have high voltage.

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!

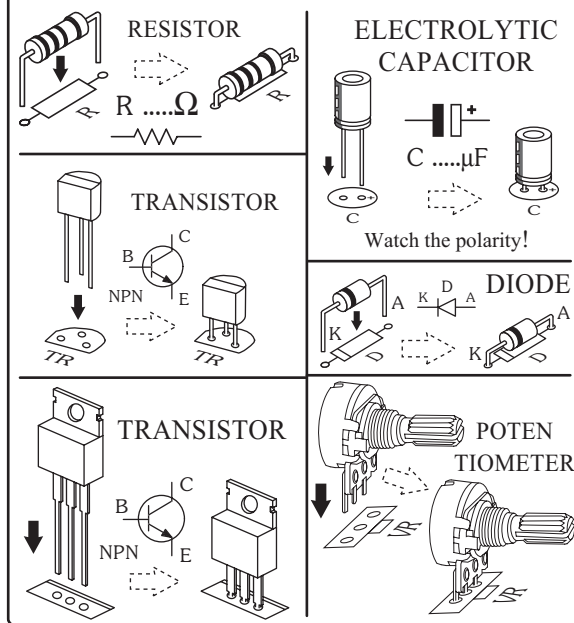
Testing:

Setting voltmeter at range 50VDC. Measuring at "OUT" point. Turning VR1, voltmeter should measure 1.5-30VDC.

Application:

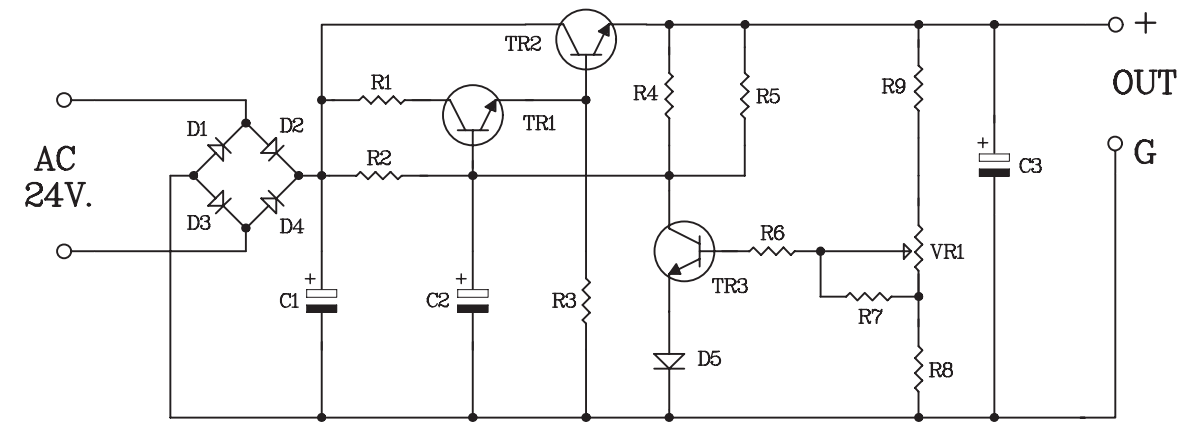
It is suggested to use at least 1A. Transformer and should connect 12 through switch according to figure 3. If there is lesser than 12 volts, turning switch to 0. If over 12 volts, switching to 12 to reduce TR2 heat. If should insert heat ventilating board to TR2 out requires over 1A. current.

**Figure 1. Installing the components**

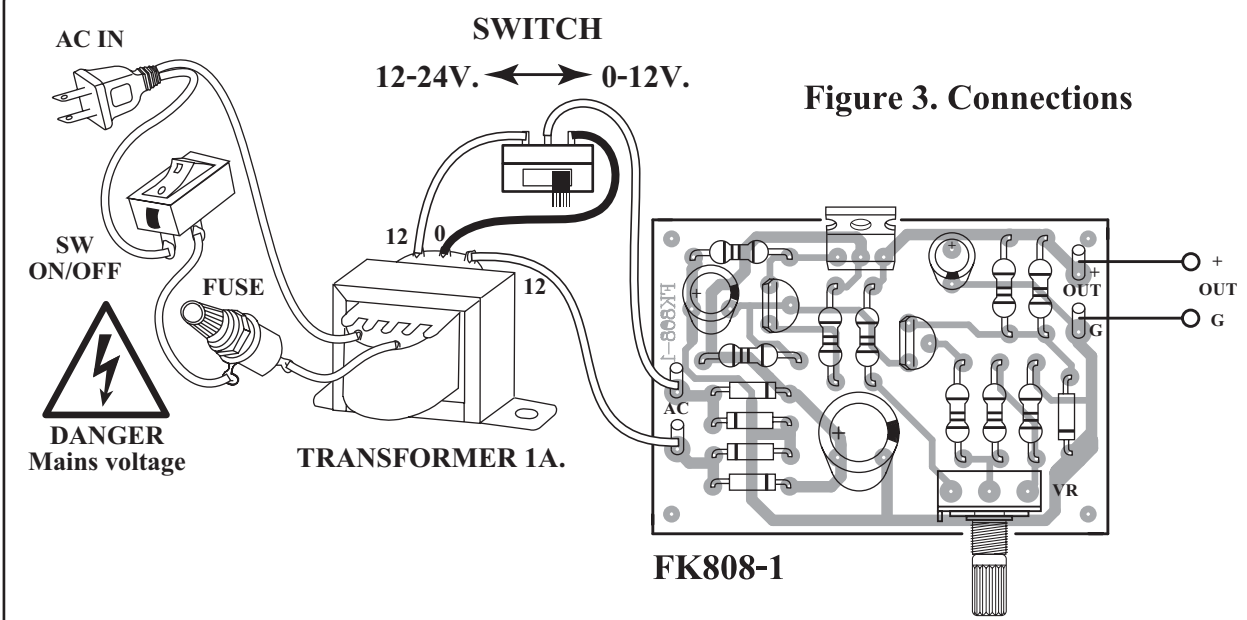


Troubleshooting:

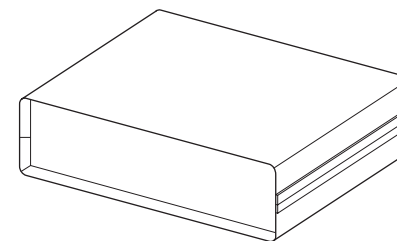
The most problem like the fault soldering. Check all the soldering joint suspicious. If you discover the short track or the short soldering joint, re-solder at that point and check other the soldering joint. Check the position of all component on the PCB. See that there are no components missing or inserted 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. 1A. circuit**



**Figure 3. Connections**



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

NEW KIT SET **NEW**

CODE FK	DESCRIPTION	POWER
168	NO SMOKING FLASHER 46 LED	9-12VDC
170	DANGER FLASHER 42 LED	9-12VDC
172	THREE STEP FLASHER 19 LED	9-12VDC