

ENERGY-SAVING LED LAMP (21 LED)
CODE 439 **LEVEL 1**

This is a energy-saving LED lamp. It is the same as a flashlight. A good thing of this circuit is selecting two power supply as 12VDC or 220VAC. It can be used for application such as a small lamp, a lamp of emergency light, etc.

Technical Specifications:

- Power supply : 12VDC or 220-240VAC (select by jumper).
- Consumption : max. 155mA. at 12VDC
- Display : 21 LEDs.
- PCB dimensions : 3.27 x 2.27 in.

How to Work:

The circuit diagram is shown in Figure 1. This circuit can be selected to rise with two power supply at 12VDC or 220VAC. User has to jumping J1-J6 correctly. If you want to supply 12VDC, jumping J1-J6 at 1 and 2, 3 and 4. When supply 12VDC to circuit, the voltage is fed to all seven set LED and there is resistor for limit current.

If you want supply 220VAC, jumping J1-J6 at 2 and 3 and supply 220VAC to circuit. The voltage is fed to all LED.

Circuit Assembling:

External connecting and fitting of components are shown in Figure 2. It is recommended to assemble the circuit starting with a lower component first i.e. diodes, resistor, electrolytic capacitors and transistors etc. Be careful while assembling and check for the matching of PCB poles and components before soldering as shown in Figure 3. Use a max. 40W. solder and soldering lead with a tin and lead ratio of 60/40 together with a joint solution inside. Recheck the assembled circuit for your own assurance. Better using a lead sucker or a lead wire absorber in case of misplacing component to protect PCB from damage.

Testing:

- When the circuit is completely assembled.
1. In case of using 12VDC, jump J1-J6 correctly. Then supply 12VDC to positive (+) and negative (-) to position G. All 21 LEDs will be lighted on.
 2. In case of using 220VAC, jump J1-J6 correctly. Then supply power to the 220V. point. All 21 LEDs will be lighted on.

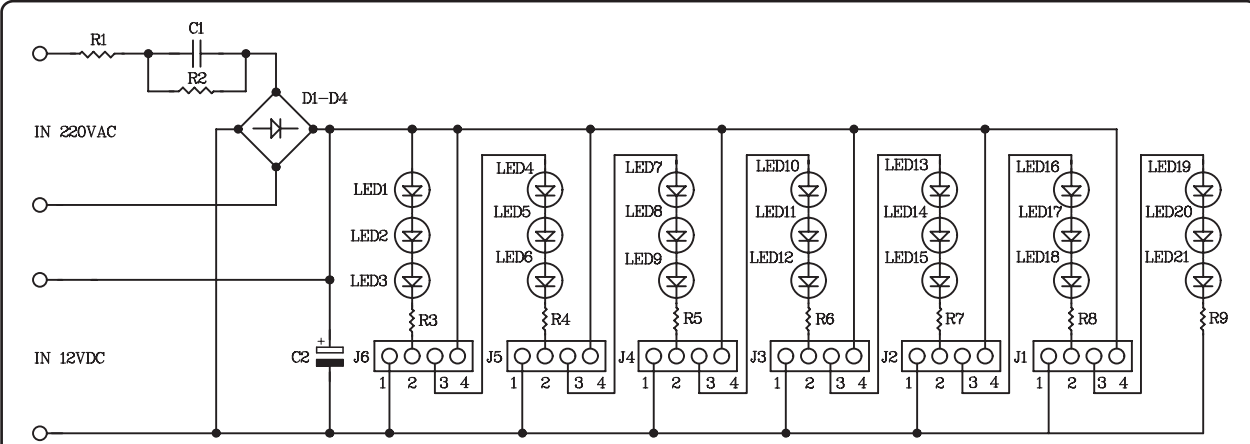
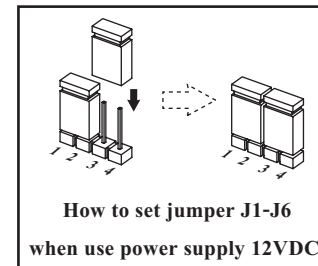
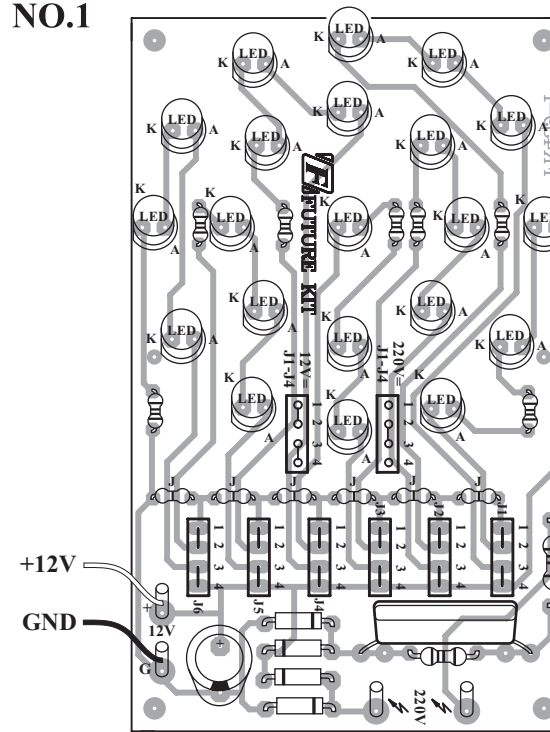


Figure 1. Energy-Saving LED Lamp (21 LED) Circuit

NO.1



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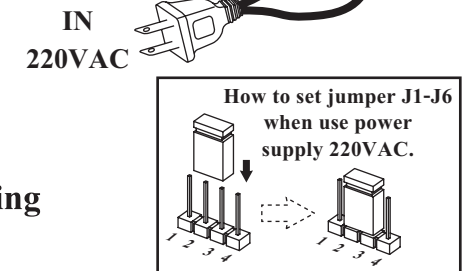
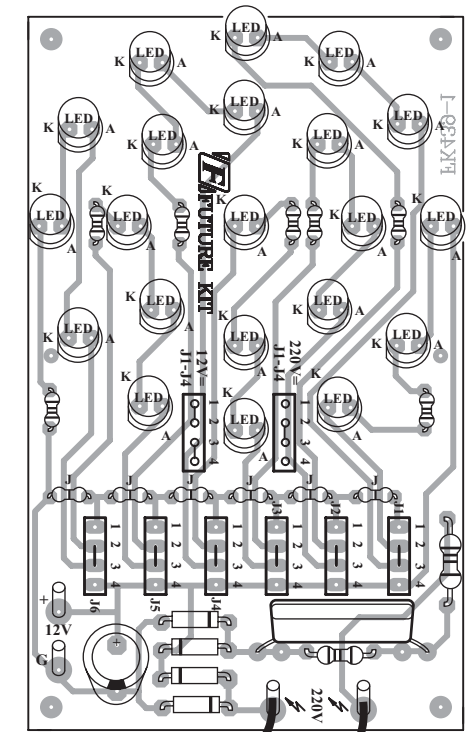
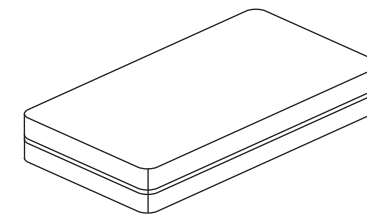


Figure 2. Circuit Assembling



NOTE:

FUTURE BOX FB17 is suitable for this kit.

Troubleshooting:

As the circuit has only a few components, the main cause of troubles will come from component misplacing and defaulted soldering. When found out that the circuit does not work, check for the proper component placings and various soldering points.

Figure 3. Components Installing

