FUTURE KIT

HIGH QUALITY ELECTRONIC KITS

THREE STEP FLASHER 19 LED
CODE 172
LEVEL 1

The three step flasher circuit is a small and flashing circuit. 19 LEDs for 3 steps blinking circle from internal to external.

Technical specifications:

- power supply : 9-12VDC.

- consumption : 40mA max. @ 9VDC.

- PCB dimensions : 2.69 x 3.56 inches.

How to works:

TR1, TR3 and TR5 is configured as frequency generator. TR1, TR3 and TR5 will step operation 3 steps. The frequency generate is depending on R 10KΩ and C 33μF which configured as speed of chasing light. TR2, TR4 and TR6 are invert the frequency and drive LEDs. R1 to R7 are voltage drop for each group LED. VR10K is used to adjust the speed of blinking.
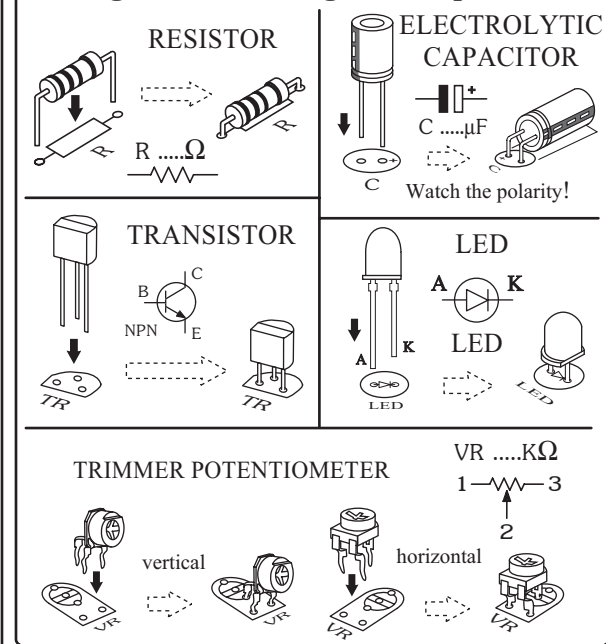
PCB assembly:

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:

Before supply the power supply to adjust VR1 max. counterclockwise and then connect the power

supply 9 to 12VDC to circuit. LED will be chasing internal to external and restart against. Adjust VR2 clockwise slowly. The speed chasing light is following adjust VR1.

Figure 1. Installing the componants

RESISTOR

R .....Ω

ELECTROLYTIC CAPACITOR

C .....μF

Watch the polarity!

TRANSISTOR

B C

NPN E

LED

A K

LED

A K

TRIMMER POTENTIOMETER

vertical   horizontal
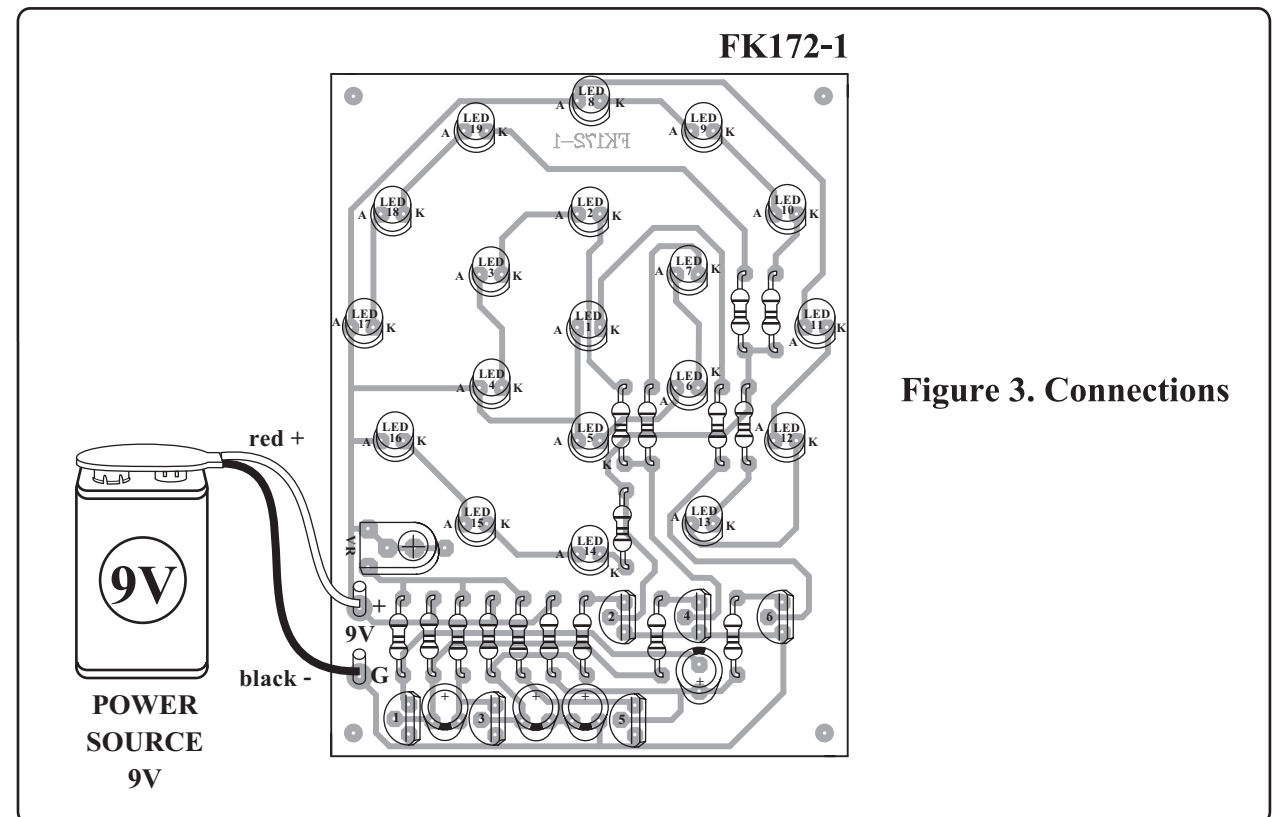
VR .....KΩ

1 —— 3
2

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.

NOTE:
FUTURE BOX FB04 is suitable for this kit.
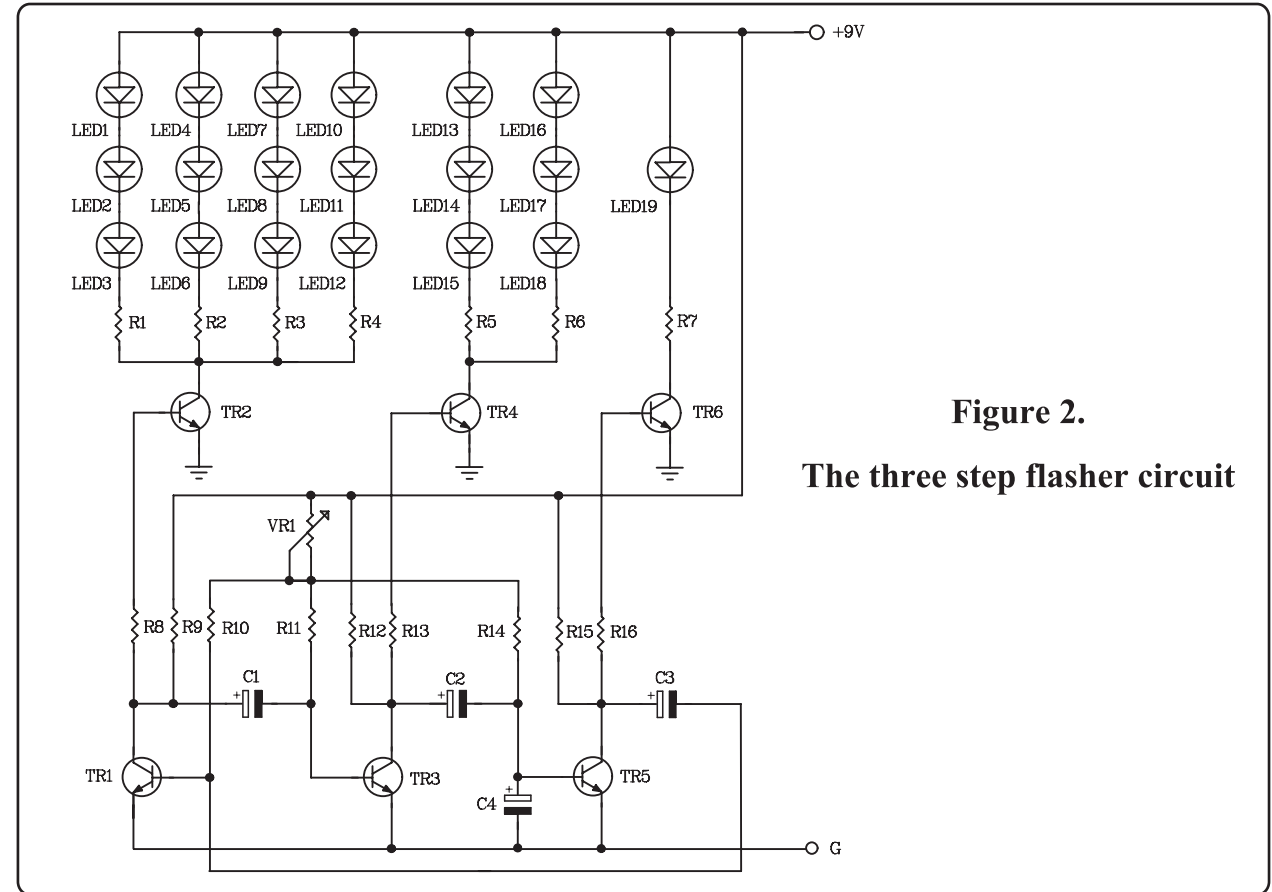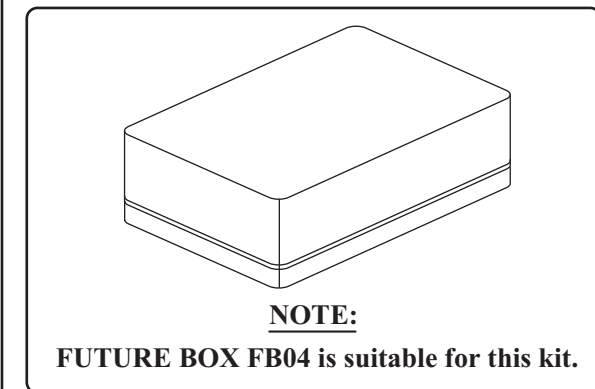
Figure 2.
The three step flasher circuit

FK172-1

Figure 3. Connections

POWER SOURCE 9V