CUPID SWEETHEART FLASHER (32 LED) CODE 155

LEVEL 1

This circuit is the chasing light circuit. The shape is the same to the heart&arrow. This circuit is consist of 32 LEDs. Idea as light-shows for model construction, say love to boyfriend or grilfriend etc.

Technical specifications:

- power supply: 9-12VDC.

- consumption: 50-80mA max.

- PCB dimensions : 2.47 x 3.36 inch.

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 47 µF which configured as speed of chasing light. TR2 and TR4 are invert the frequency and drive LEDs. R 330Ω is voltage drop for each LED. D2 is the diode feed back of the voltage. When TR3 isn't work, the voltage at the collector of TR3 is fed to the base of TR2 and TR4 through D2 and D3, causing TR2 and TR4 are working simultaneously.
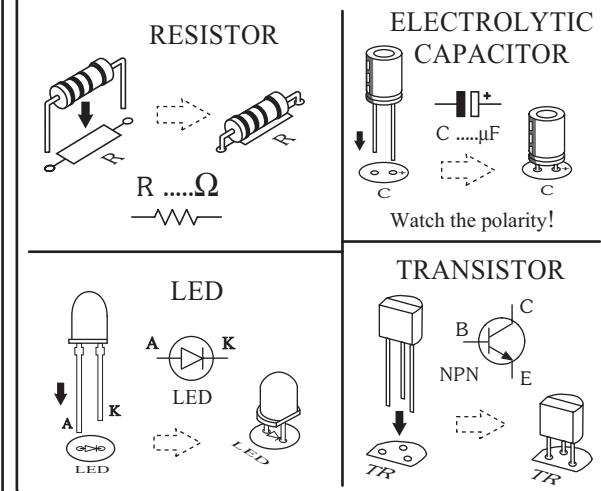
PCB assembly:

Shown in Figture 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:

The board should be given a final inspection

before power is applied. After connect the battery 9V to the circuit. With the positive pole is connected to "+" point and the negative pole is connected to "-" point. All LEDs is chasing to the heart&arrow shape. Step 1, LEDs is light on at heart and then step 2, the arrow is light on. In the step 3, all LEDs is light off. If you want to increase or decrease the speed of chasing can be adjusted by altering the value of C 47µF. And if you want to use a long time, you can used by the power supply 9-12VDC/300mA.

Figure 1. Installing the componants

RESISTOR

R ....Ω

ELECTROLYTIC CAPACITOR

C ....µF

Watch the polarity!

LED

TRANSISTOR

B, C, E NPN

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.
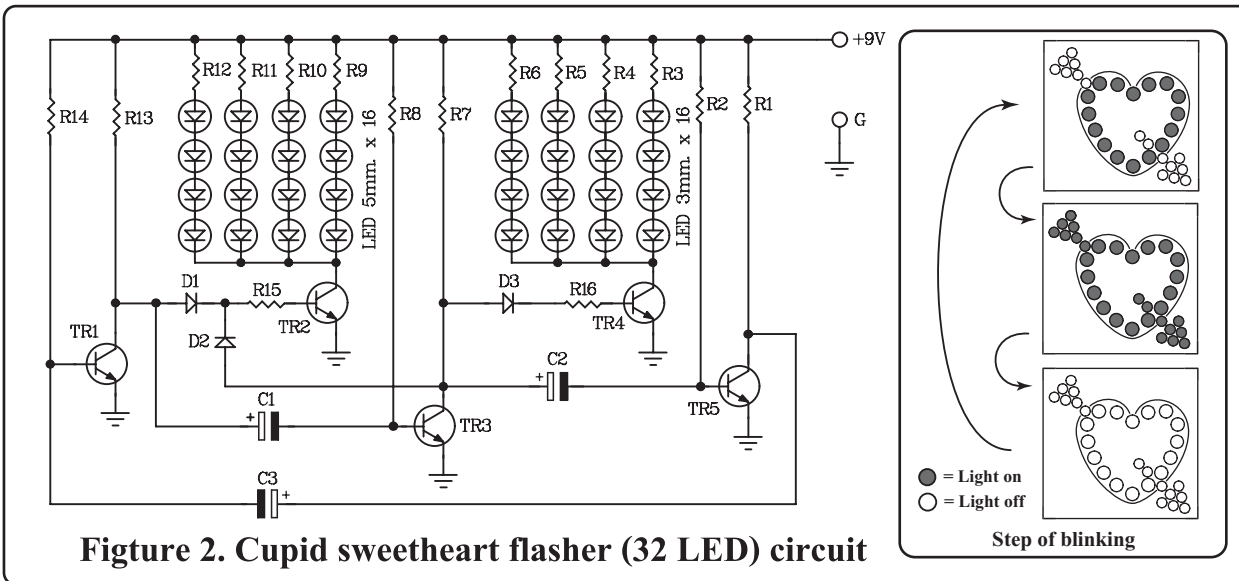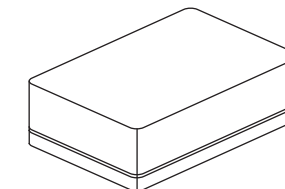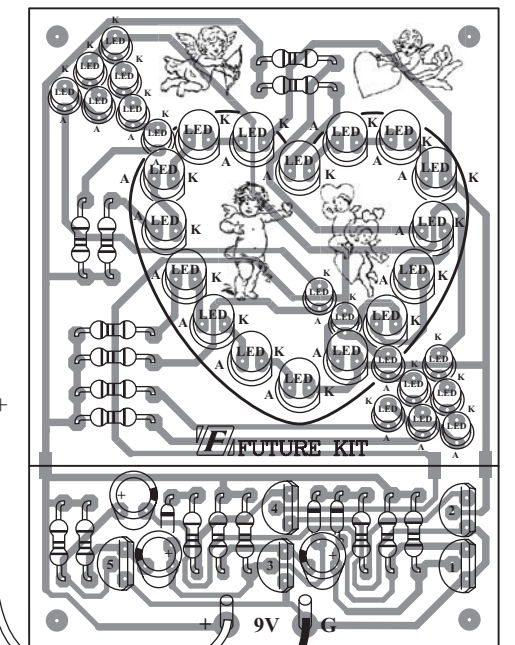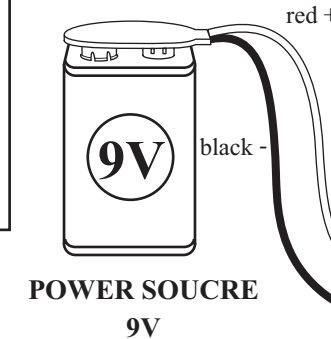

● = Light on
○ = Light off

Figture 2. Cupid sweetheart flasher (32 LED) circuit

Step of blinking

Figture 3. Connections

ELECTRIC WIRE

You can cut PC board for install to FUTURE BOX and then connect both PC board with electric wire.

LED 3 mm.

LED 5 mm.

Direction of LED in the PC board.

red +

black -

POWER SOUCRE 9V

FK155-1
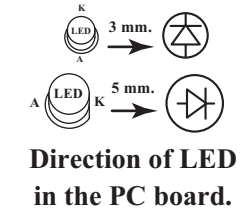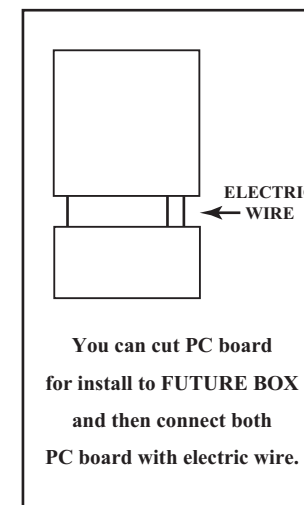
NOTE:
FUTURE BOX FB03 is suitable for this kit.