

MINI TRAFFIC LIGHT 3 LED
CODE 156 **LEVEL 1**

This circuit is the chasing light circuit. The shape is like the traffic light at the intersection. This circuit consists of 3 LEDs. Idea as light-shows for model construction etc.

Technical specifications:

- power supply: 9-12VDC.
- consumption: 16mA max.
- dimension of LED : 3 mm. (red, yellow and green)
- dimensions of PCB : 1.07 x 2.39 inches

How to works:

TR1, TR2 and TR3 are configured as a frequency generator. With the both transistor is working together and the rest of the transistor is not working.

Step1 : when TR1 and TR2 are working, LED1 and LED2 are light off and TR3 is not working, causing LED3 is light on.

Step2 : When TR2 and TR3 are working, LED2 and LED3 are light off and TR1 is not working, causing LED1 is light on.

Step3 : When TR1 and TR3 are working, LED1 and LED3 are light off and TR2 is not working, causing LED2 is light on.

This frequency is depending on C3, R9, C2, R6, C1 and R3. C3 has capacitance less than C1 and C3, causing LED3 (yellow) is light on less than LED2 (red) and LED1 (green).

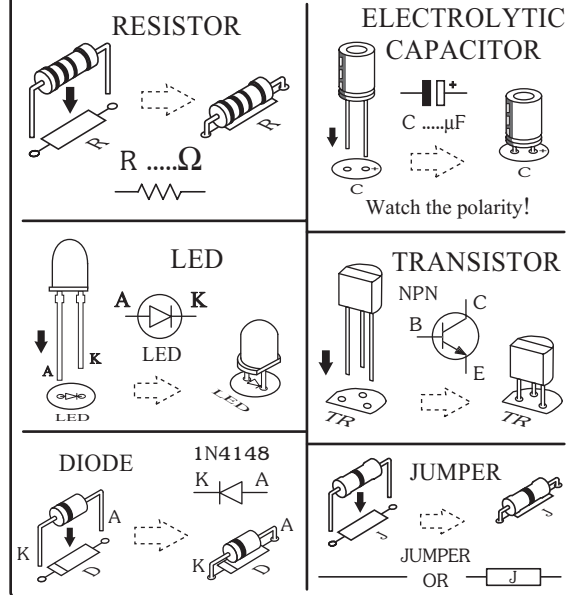
PCB assembly:

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:

This kit has an operating voltage range of 9-12 VDC. Connect the power supply to the circuit. All LED is blinking to the same traffic light. If you want to change the speed of LED can be increased or decreased the value of capacitor C1, C2 and C3.

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.

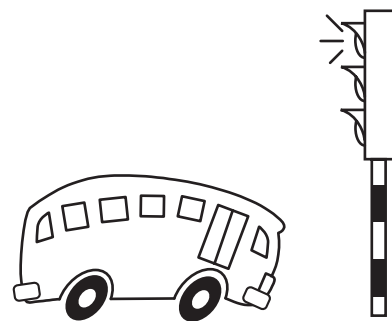
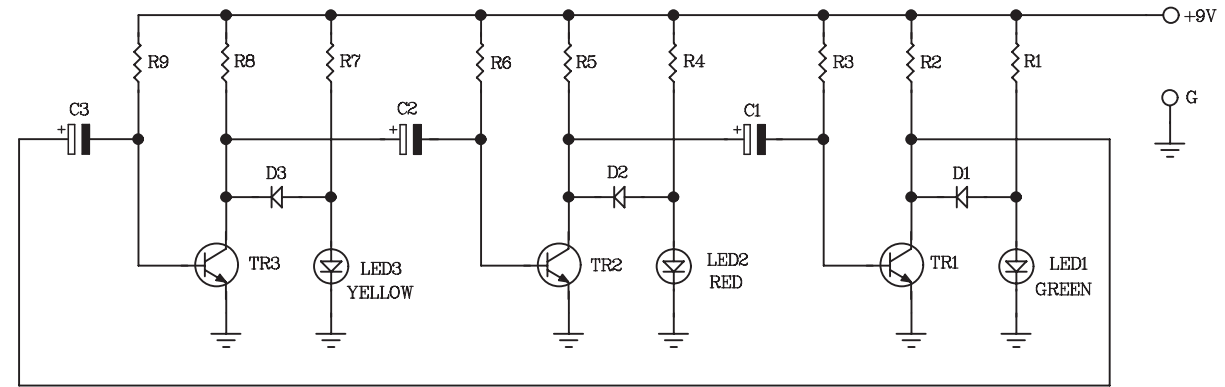


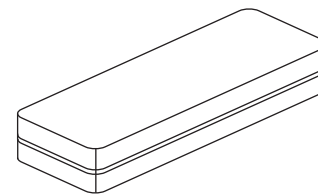
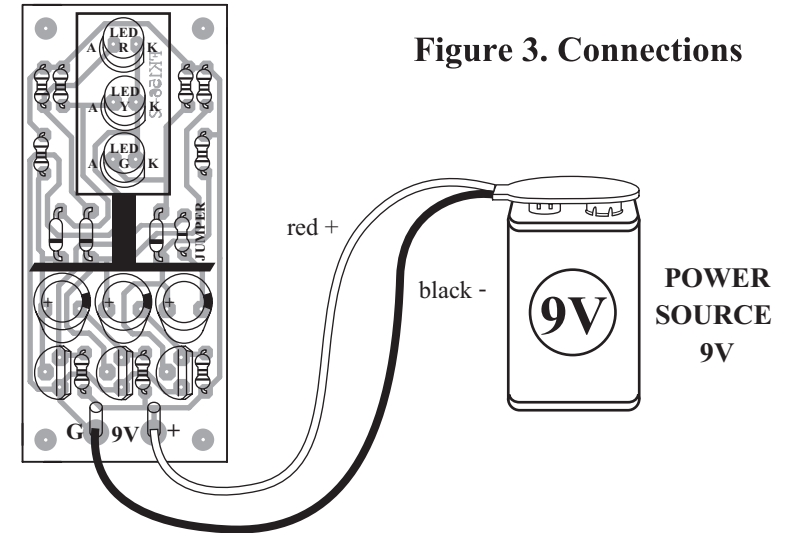
Figure 2. Mini traffic light 3 LED circuit



FK156-2

LED R = RED COLOR
LED Y = YELLOW COLOR
LED G = GREEN COLOR

Figure 3. Connections



NOTE:
FUTURE BOX FB02 is suitable for this kit.

NEW KIT SET **NEW**

| CODE FK | DESCRIPTION | POWER |
|---------|---|-----------|
| 156 | MINI TRAFFIC LIGHT 3 LED | 9-12VDC |
| 157 | TWO WAY CHASING LIGHT TWO COLOUR 10 LED | 9-12VDC |
| 158 | STROBOSCOPE 220V | 220VAC |
| 159 | SHAKING DICE | 9-12VDC |
| 160 | RANDOM NUMBER GAME 1 DIGIT | 9-12VDC |
| 273 | MUSIC DOOR (WITH MAGNATIC SWITCH) | 3VDC |
| 274 | MINI ORGAN 13 TONE (WITH MAGNATIC SWITCH) | 9VDC |
| 325 | RINGING SIGNAL LIGHT 5 LED | NONE |
| 672 | MINI MEGAPHONE (WITH SPEAKER) | 4.5-12VDC |