

**FLASHER 2 COLOUR 1 LED**  
**CODE 134**

LEVEL 1

This flasher circuit is a basic circuit that is suitable for those who interested in electronic. Easily application with low-price.

**Technical specifications:**

- power supply : 9 to 12VDC.
- consumption : 12 to 15mA.
- PCB dimensions : 1.30 x 1.03 inches.

**How to works:**

Multi-vibrator (TR1 and TR2) is configured as low frequency generator. TR1 and TR2 will alternately one by one. If TR1 works, LED RED will light on and LED GREEN will light off. But if TR2 works, LED RED will light off and LED GREEN will light on. Speed of LED blinking is depending on R1, R2, C1, C2. R3 and R4 are voltage drop for each LED.

**PCB assembly:**

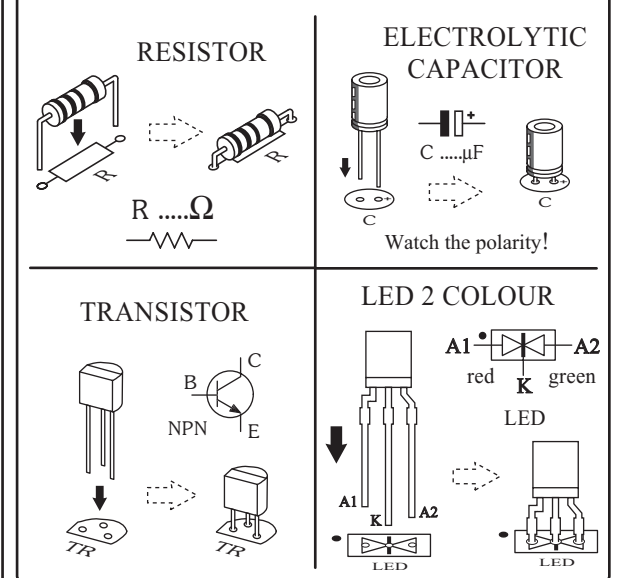
Shown in Figure 3 is the assembled PCB. Starting with the lowest height components first, taking care not to short any tracks or touch the edge connector with solder. Some tracks run under components, and care should be taken not to short out these tracks. If the pins will not enter the holes with ease, use a small drill to slightly enlarge the opening. 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. Some components are particularly sensitive to heat ( ie: Transistors, IC's, diodes etc.) extra care must be taken to only apply the iron for as little time as possible, using a pair of pliers to grip the leads will help conduct heat away. Trim components leads with wire

cutters to prevent excess lengths causing a short circuit. Now check that you really did mount them all the right way round!

**Testing:**

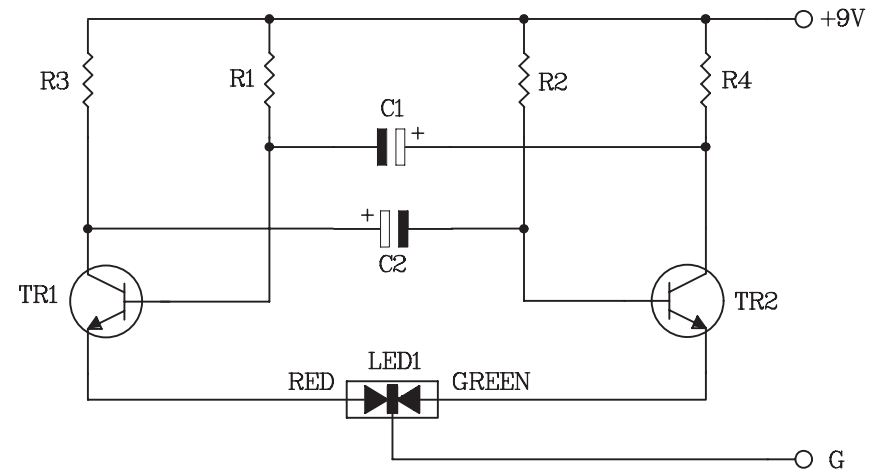
Connect the power supply 9 volts to the circuit. LED RED and LED GREEN will display alternately. If you want to change the speed of LED to slow down can be adjusted by altering the value of capacitor 10 $\mu$ F to 22 $\mu$ F or 33 $\mu$ F or 47 $\mu$ F. But if you want to change the speed of LED to speed up can be adjusted by altering the value of capacitor 4.7 $\mu$ F.

**Figure 1. Installing the components**



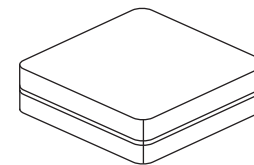
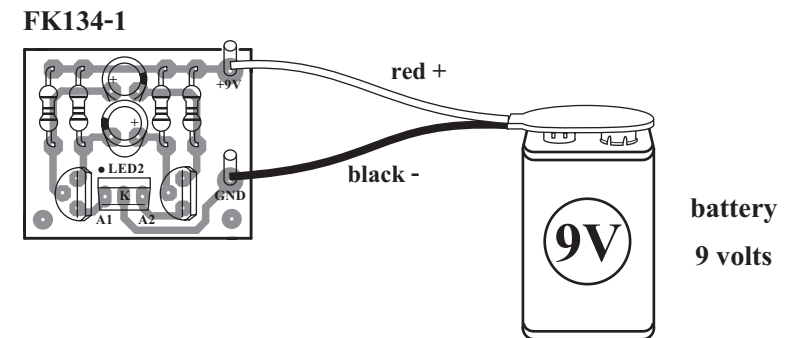
**Troubleshooting:**

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 flasher 2 colour 1 LED circuit**

**Figure 3. Connections**



**NOTE:**

**FUTURE BOX FB01 is suitable for this kit.**

**NEW KIT SET**

CODE FK	DESCRIPTION	POWER
168	NO SMOKING FLASHER 46 LED	9-12VDC.
169	DANCING ROBOT FLASHER 33 LED	9-12VDC.
170	DANGER FLASHER 42 LED	9-12VDC.
171	TWO LAMP FLASHER	3VDC.
172	THREE STEP FLASHER 19 LED	9-12VDC.
173	HALLOWEEN PUMPKIN FLASHER 23 LED	9-12VDC.
174	ANIMATED LED SIGNBOARD (5x7 DOT MATRIX)	3-5VDC.
816	VARIABLE REGULATOR 0-50V. 3A.	50VDC.
817	TRANSFORMERLESS POWER SUPPLY 6-9-12V 50mA	220-240VAC.