

**ROBOT FLASHER 7 LED**  
**CODE 180**

**LEVEL 1**

A basic light flashing circuit that suits those who are interested in electronics. Easy to assemble, to understand and low cost with only a few components. The circuit is good for decoration at parties.

**Technical Specifications:**

- Power supply : 9VDC.
- Consumption : 65 mA. max.
- PCB dimensions : 2.29 x 1.11 in. (PCB circuit)  
1.13 x 1.11 in. (PCB head and leg)

**How to Work:**

When supply voltage to the circuits (shown in Figure 1), both multivibrator frequency generating circuits (TR1, TR2 and TR3, TR4) will start working with LED5-LED7 being permanently lit up.

Although their working character and assembling are the same, they will work independently. The circuit working will start from TR1 and TR2 being assembled in the form of multivibrator frequency generating circuit. They will alternatively work with having C1, C2, R2, R3

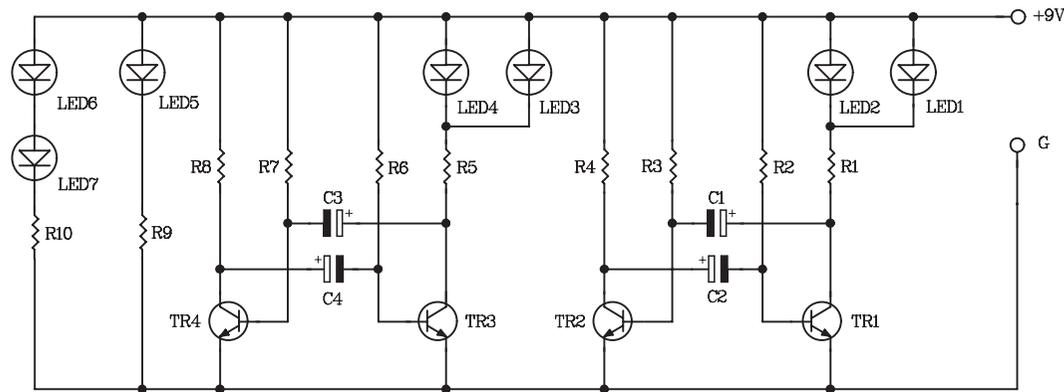
controlled the generated frequency. When TR1 works, LED1 and LED2 will be lit up. But when TR2 works, LED1 and LED2 will be off. R1 will act as a voltage reducer for LED1 and LED2.

**Circuit Assembling:**

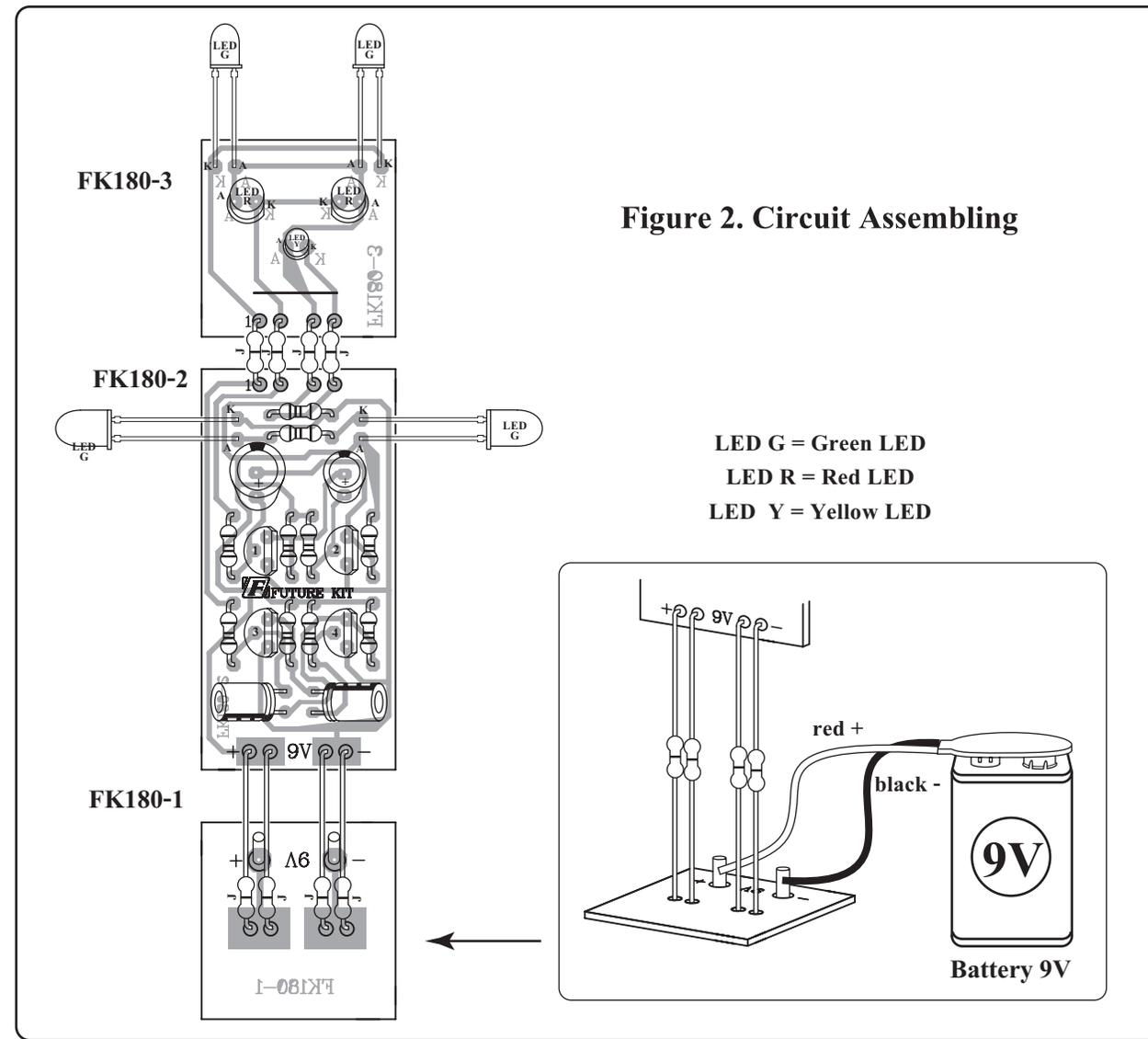
External connecting and fitting of components are shown in Figure 2. It is recommended to assemble the circuit starting with a lower component i.e. diodes, resistor, electrolyte capacitors and transistors etc. Be careful while assembling and check for the matching of PCB poles and components before soldering 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:**

Supply 9VDC to the circuit that having connected positive pole to position +9V and negative one to position G. LED1 to LED4 then will blink and LED5 to LED7 are lighted on. Required slower or faster blinking speeds can be adjusted through C1, C2, C3 and C4. Increase value of capacitor for a slower blinking and reduce value of the same for a faster one.

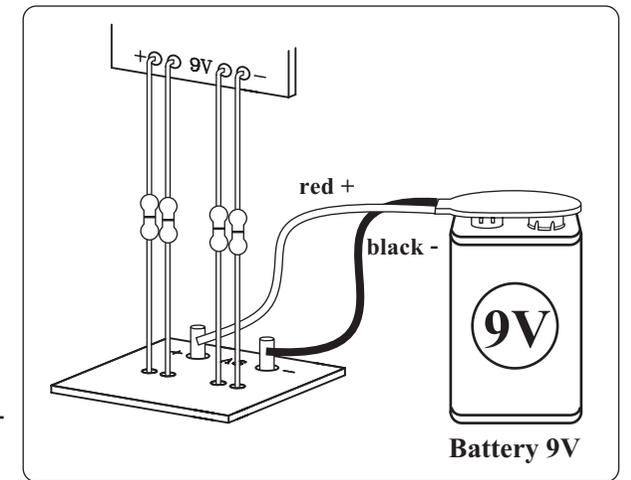


**Figure 1. Robot Flasher 7 LED Circuit**



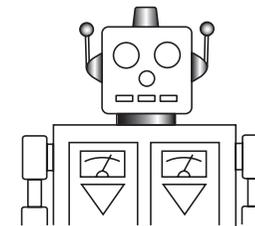
**Figure 2. Circuit Assembling**

LED G = Green LED  
LED R = Red LED  
LED Y = Yellow LED



**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**

