FUTURE KIT

HIGH QUALITY ELECTRONIC KITS

FUTURE KIT

ROBOT FLASHER
CODE 142

LEVEL 1

This robot flasher circuit is flasher circuit. The shape of robot face is outlined by a series of green LED and yellow LED while the rest LEDs is blinking.

Technical specifications:

- **power supply: 3 x 1.5V AA batteries (not incl.)**
- **consumption: 30mA max.**
- **adjustable flashing speed with potentiometer.**
- **PCB dimensions : 1.58 x 1.61 inch.**

How to works:

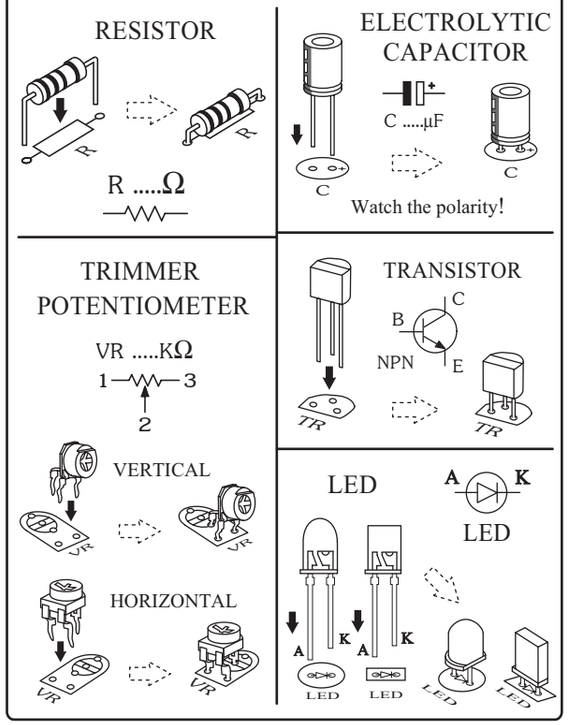
The circuit diagram shown in Figure 2. The circuit is constructed using two transistors (TR1 and TR2), two electrolytic capacitors (C1 and C2), six LEDs (LED1 to LED6), a potentiometer trimmer (VR1), and nine resistors (R1 to R9). This is an astable multivibrator circuit to alternately flash LEDs. The frequency of the multi-vibrator circuit is controlled by capacitor C1 and C2 and resistors R4 and R5. The 100Ω resistors (R6 to R9) is the load resistor for LED3 to LED6 and the 300Ω collector load resistor set the current. The rest LEDs (LED1, LED2) continued light on. The speed of flash is controlled by means of the potentiometer trimmer VR1 which controls the bias of the two switching transistors.

When a 3V power source is connected to the circuit, the transistors TR1 and TR2 start to switch on and off in turn causing the LEDs to emit pulses of light. The circuit oscillates. The combination of C1, R5 and VR1 determines the time TR2 is switched off, and similarly C2, R4 and VR1 determine the time TR1 is off.

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!

Figure 1. Installing the componants

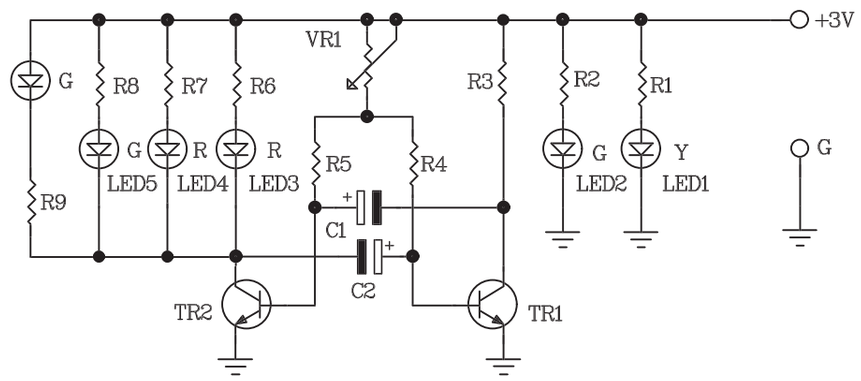


Testing:

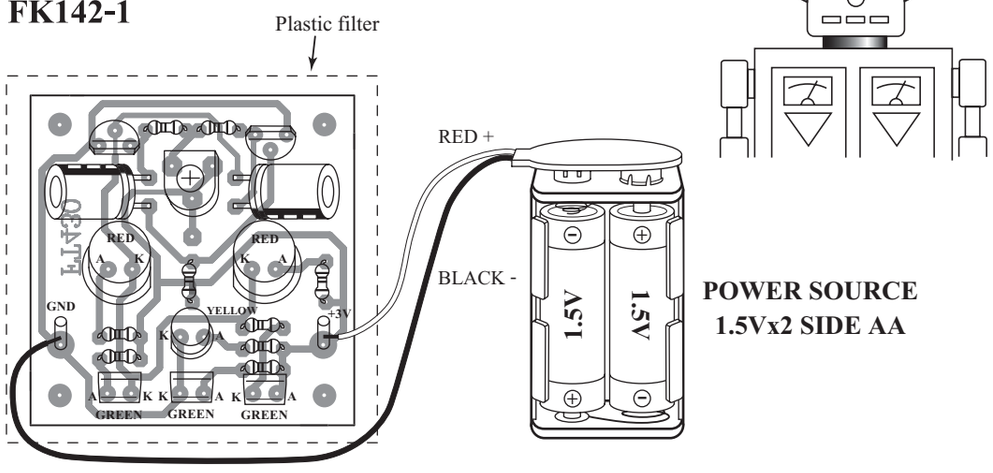
This kit has an operating voltage range of 3 VDC. Apply power supply. The LEDs should be flashing. The flashing speed can be adjust by the potentiometer trimmer (VR1).

Troubleshooting:

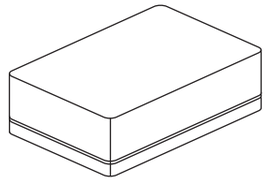
The most problem like the fault soldering. Check all the soldering joint suspicious. If you discover the short track or the short soldering joint, re-solder at that point and check other the soldering joint. Check the position of all component on the PCB. See that there are no components missing or inserted in the wrong places. Make sure that all the polarised components have been soldered the right way round.



Figture 2. Robot flasher circuit



Figture 3. Connections



NOTE:

FUTURE BOX FB03 is suitable for this kit.

NEW KIT SET NEW

CODE FK	DESCRIPTION	POWER
271	LIGHT ACTIVATE ALARM (COCK VOICE) WITH SPEAKER	3VDC
272	SPACE GUN 3 TONE WITH SPEAKER	9VDC