FUTURE KIT

HIGH QUALITY ELECTRONIC KITS

HEAD OR TAIL GAMES CODE 128

LEVEL 1

This circuit is suitable for playing during leisure time. Both LEDs will display alternatively with high speed when pressing switch, then output will be stop at either LEDs. It is similar to head or tail games. This circuit has 2 LEDs splash alternately one by one.

Technical specifications:

- power supply: 9VDC.

- consumption: 15mA max.

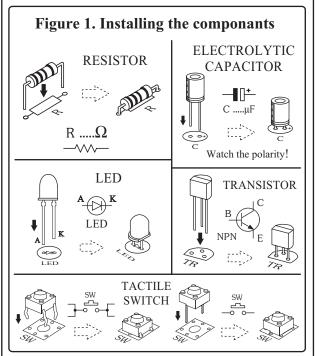- PCB dimensions : 1.98 x 1.27 inch.

How to works:

Multi-vibrator (TR1 and TR2) is configured as frequency generator. TR1 and TR2 will alternately one by one when pressing switch SW1. If TR1 works, LED1 will light on and LED2 will light off. But if TR2 works, LED1 will light off and LED2 will light on. Speed of LED blinking is depending on R4, R5, C1 and C3. When press and hold switch SW1, voltage at C2 is respectively declined, caused lower frequency. When release switch SW1, C2 is discharged, either LED will be displayed. R1 and R8 are voltage drop for each LED.

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!
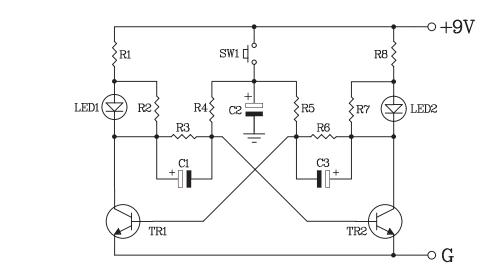
Testing:

Connect the power supply 9VDC to circuit. With the positive pole is connected to "+" point and the negative pole is connected to "-" point. Press and hold switch SW1, LED1 and LED2 will display alternately. Release switch SW1, both LEDs speed will be slow till stop at either LED.

Figure 1. Installing the componants

RESISTOR

R .....Ω

ELECTROLYTIC CAPACITOR

C .....µF

Watch the polarity!

LED

A →|← K

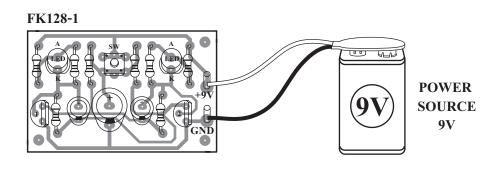TRANSISTOR

B, C, E NPN

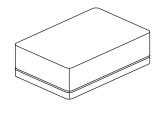TACTILE SWITCH

SW

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. The head or tail games circuit

FK128-1

POWER SOURCE 9V

Figture 3. Connections

NOTE:

FUTURE BOX FB03 is suitable for this kit.