FUTURE KIT

HIGH QUALITY ELECTRONIC KITS

SMALL BELL SOUND
CODE 251

LEVEL 1

This circuit is a sound generator. The sound of this circuit is the same a small bell. It is suitable for studying, easy application.

Technical specifications:

- power supply: 6-12VDC.
- consumption: 15mA max.
- dimensions: 1.55 x 1.24 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, LED1 will light on. But if TR2 works, LED1 will light off and TR3 is working, causing TR3 is generated the high frequency (2KHz). This high frequency is drived to the piezo speaker. The low frequency is depending on R1-R4, C1-C2. R1 is voltage drop for LED. The frequency of the tone is set by the value of C3. If increasing the capacitance C3 will produce a lower note with longer sustain.

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:

This kit has an operating voltage range of 9 VDC. Apply power supply. LED will be blinking and you will hear small bell sound from a piezo speaker.

Figure 1. Installing the components

RESISTOR

$R \ .....\Omega$

ELECTROLYTIC CAPACITOR

$C \ .....\mu F$

Watch the polarity!

TRANSISTOR

NPN

LED

A — K

LED
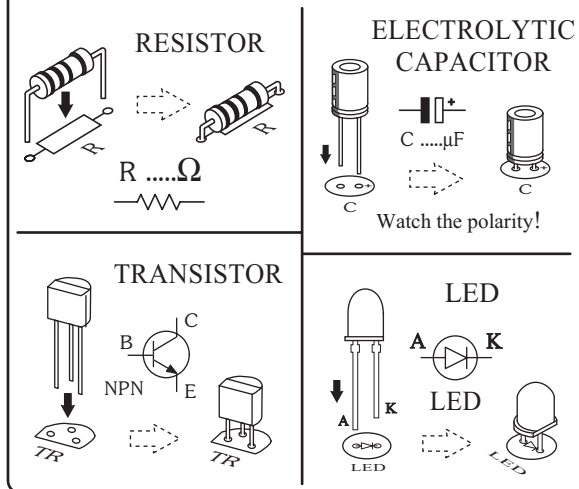
Troubleshooting:

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.
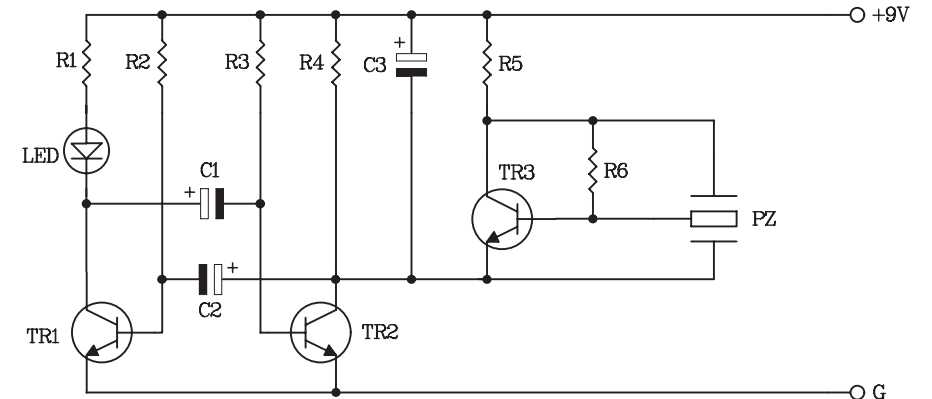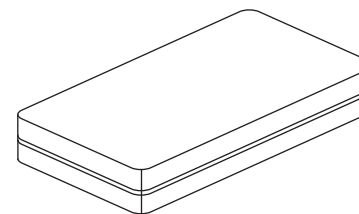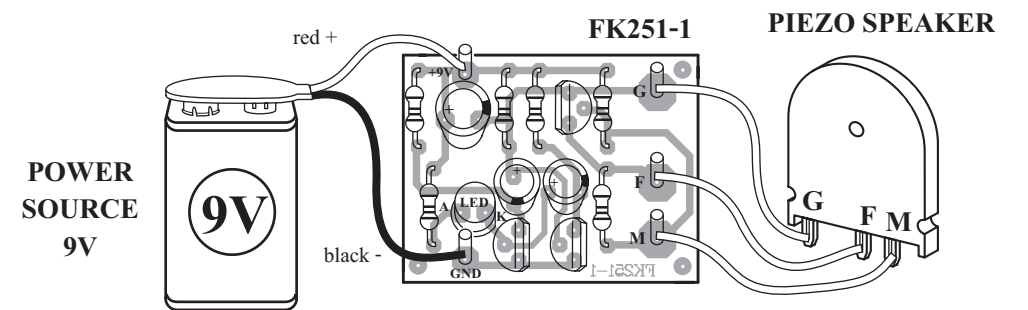

Figure 2. The small bell sound circuit

Figure 3. Connections

POWER SOURCE 9V

9V

red +

black -

FK251-1

PIEZO SPEAKER

NOTE:

FUTURE BOX FB17 is suitable for this kit.