FUTURE KIT

HIGH QUALITY ELECTRONIC KITS

FUTURE KIT

FIRE SIREN

CODE 233

LEVEL1

A simple fire siren circuit with only few components that is most suitable for beginners who are interested in electronics.

Technical specifications:

- Power supply: 9VDC.

- Consumption: 20mA max.

- Loudspeaker : 8 Ohm/0.25W

- PCB dimensions: 1.11 x 1.28 in.

How to work:

TR1, TR2, R3, C2 and loudspeaker are assembled as a frequency generator. The frequency will be controlled at the base and then connected through R2 to bias TR1. When switch on, C1 will be charged through R1 and switching will cause voltage at C1 gently increased. The frequency generator will start working when frequency is increased according to acrossed voltage at C1. When C1 is charged upto a certain level it will produce a constant sound frequency. And when switch off, the voltage at C1 will be decreased accordingly. As such, the frequency will also be decreased respectively and stop making sound when C1 discharged voltage is lower than 0.6 volt. The produced sound like the fire siren.

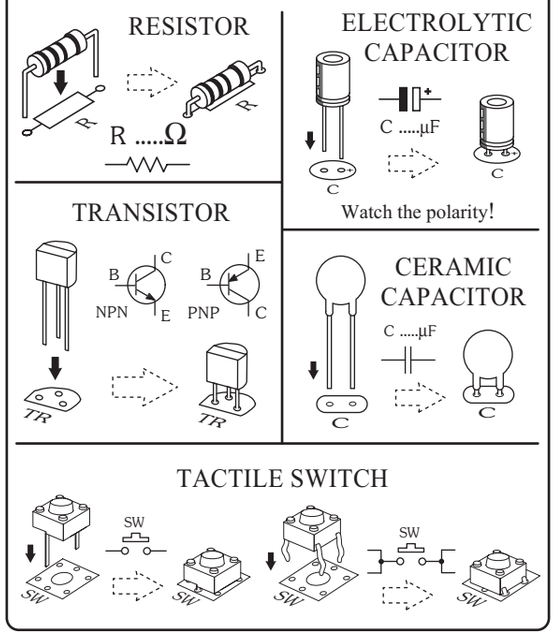
Circuit connecting:

External connecting and fitting of components are shown in figure 3. It is recommended to assemble the circuit starting with a less height component i.e. diodes, resistor, electrolite capacitors and transistors etc. Be careful while assembling and check for the matching of PCB poles and components before soldering as shown in Figure 1. 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 confidence. Better using a lead sucker or a lead wire absorber in case of misplacing component to protect PCB damage.

Testing:

Supply voltage of 9VDC to the circuit, if there is no sound from loudspeaker, press the switch and hold on for a while, there will be a siren sound that gently increased. Release the switch when sound level is constant. The sound level will be gently decreased and stopped finally.

Figure 1. Components installion



Troubleshooting:

As the circuit has only a few components, the main cause of troubles will come from misplacing component and defaulted soldering. When found out that the circuit does not work, check the placing component and various soldering points.

Figure 2. The fire siren circuit

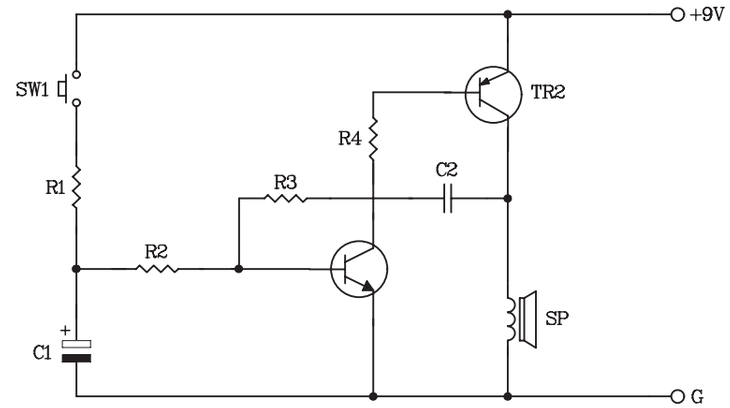
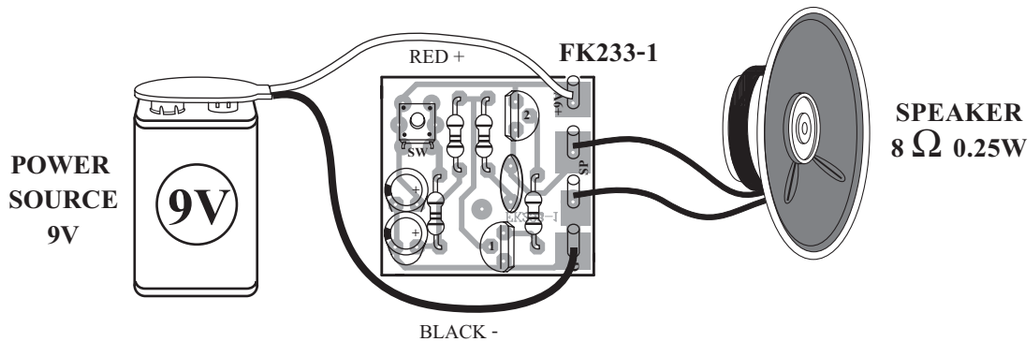
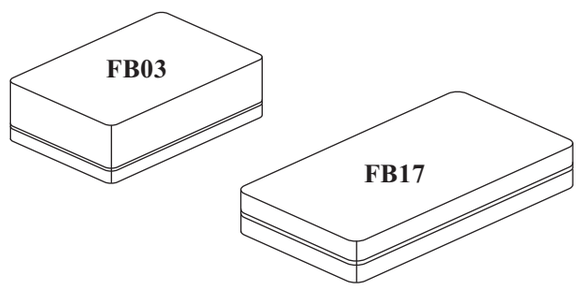


Figure 3. Circuit connecting





NOTE:

FUTURE BOX FB03 and FB17 are suitable for this kit.