

**SOUND TESTER GAME 10 LED**  
CODE 181 **LEVEL 2**

A basic sound power testing circuit that used for measuring of preliminary sound power and sound level which do not require precision or as a sound power testing game.

**Technical Specifications:**

- Power supply: 9VDC.
- Consumption : 20mA. (stand by), 50mA. (working)
- Adj. sensitivity : trimmer potentiometer.
- PCB dimensions : 2.29 x 1.11 in.

**How to Work:**

The circuit working as shown in Figure 1, will start when it receives incoming sound signal. The signal will be changed to electric power and fed to IC3/4 for amplifying a stronger signal. VR1 will act as a signal amplifying controller. The output signal from pin 7 of IC3/4 will be fed to the base of TR1 for bias and TR1 starts working. When TR1 works, voltage from the collector will move out from the emitter to positive pins of IC1/2 to IC3/3 for comparing with negative pins of each IC that receives voltage from IC1/1 (buffer circuit). In case of the positive pin voltage is bigger than the negative pin voltage, the attached LED of that IC will be lit up. And LED will be off when the positive pin voltage is less than the negative pin voltage. C5 and R7 will delay the switching off time of each LED while switch SW RESET will reset all LEDs being off.

VR2 will adjust the comparing voltage amount that being fed to the negative pin of IC1/2 to IC3/3 as required.

**Circuit Assembling:**

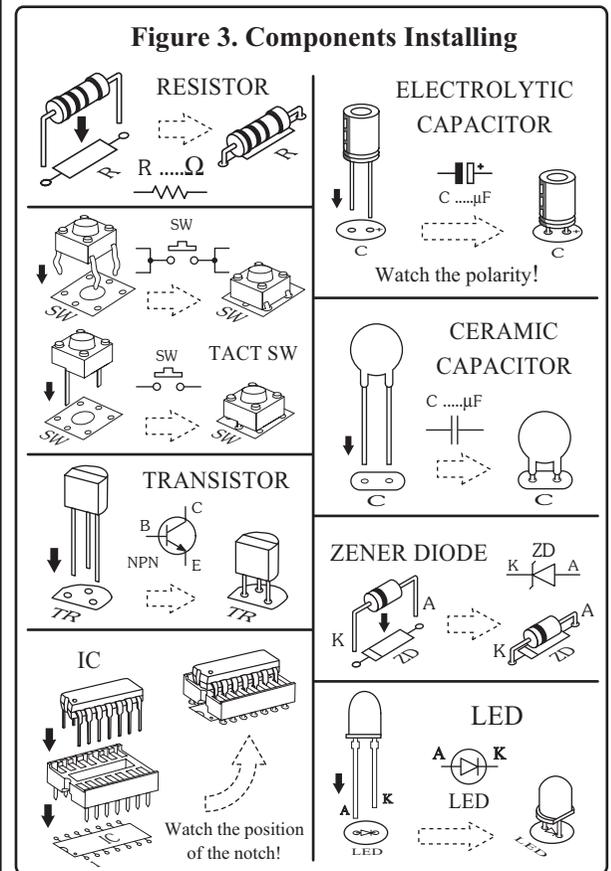
External connecting and fitting of components are shown in Figure 2. It is recommended to assemble the circuit starting with a lower component i.e. diodes, resistor, electrolite capacitors and transistors etc. Be careful while assembling and check for the matching of PCB poles and components before soldering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

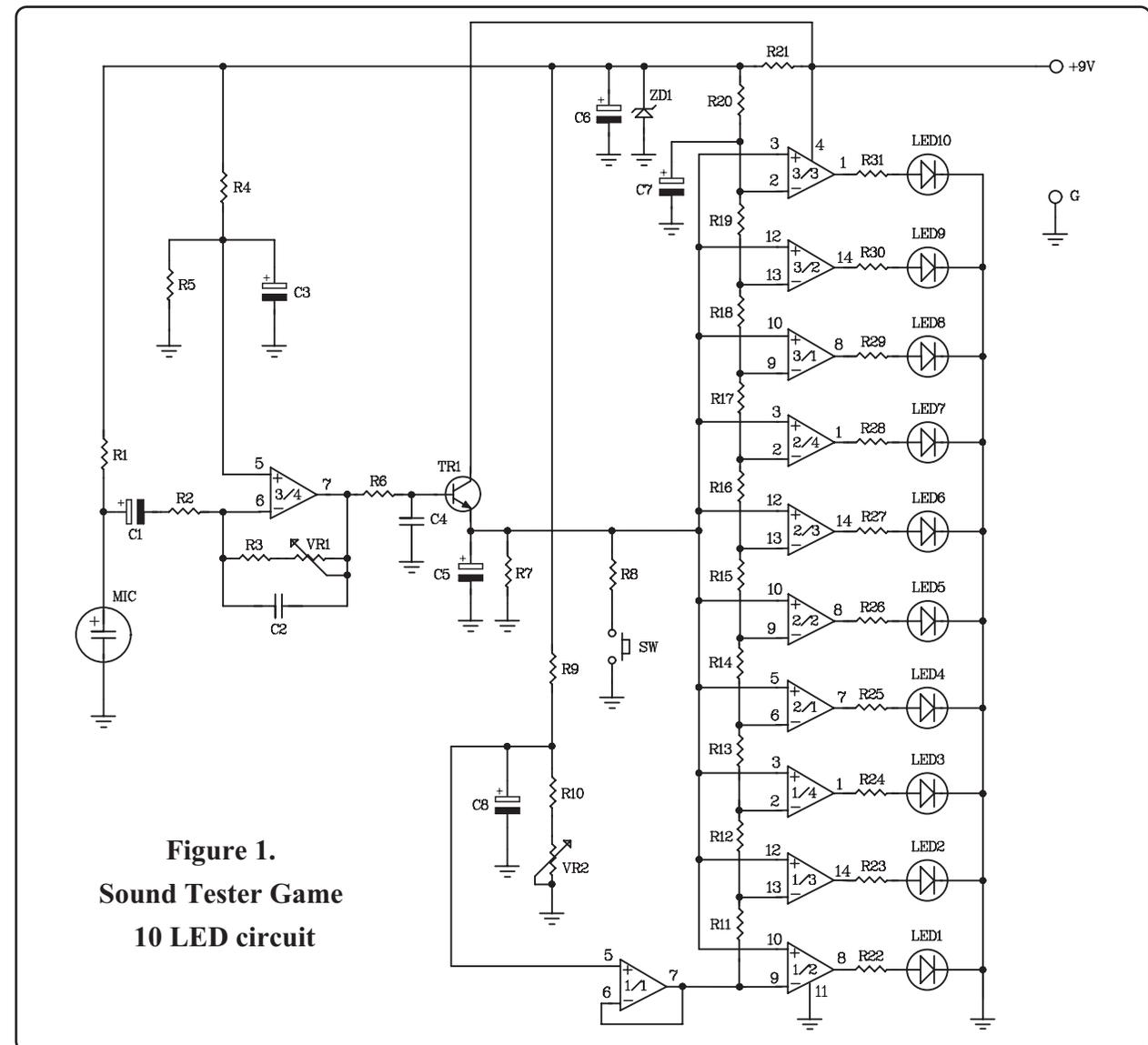
Supply 9VDC to the circuit that having connected positive pole to position +9V and negative one to position G. Then adjust VR1 and VR2 to the most right hand side. Try to clap closely at the microphone, all LEDs will be lit up. LEDs will be off one by one if there is no incoming sound. Turn on switch RESET if require an instant switching off. Those results show that the circuit is workable.

VR1 will act as a signal receiving sensitivity adjuster of the microphone while VR2 will control the comparing voltage level for lighting up LED to suit the surrounded environment.

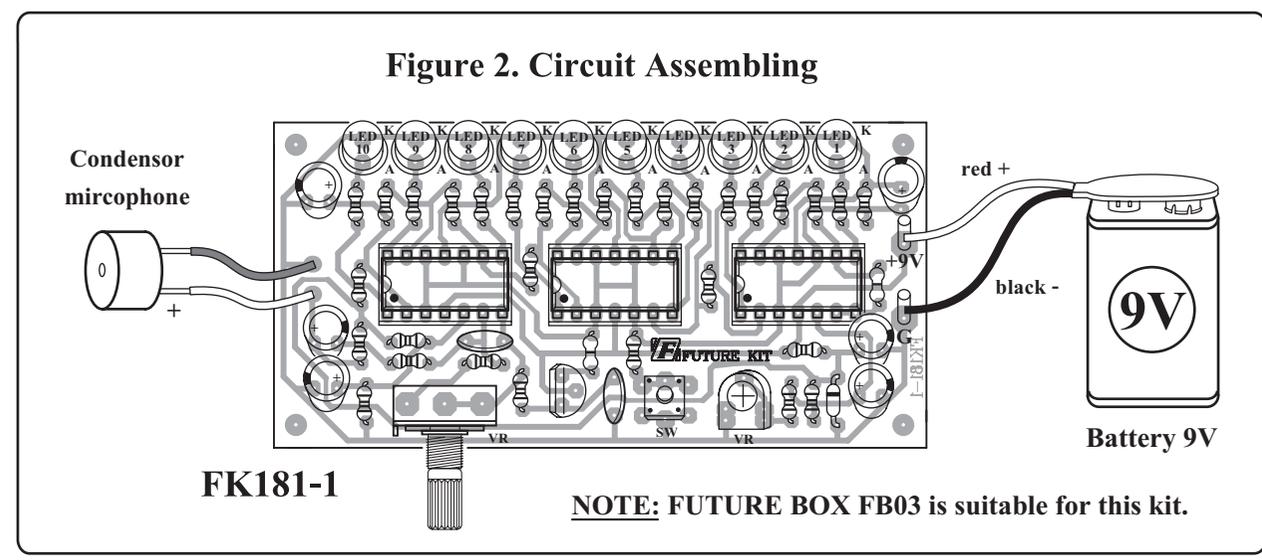


**Troubleshooting:**

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 1.**  
**Sound Tester Game**  
**10 LED circuit**



**FK181-1**

**NOTE: FUTURE BOX FB03 is suitable for this kit.**