FUTURE KIT

HIGH QUALITY ELECTRONIC KITS

MELODY ORGAN 25 TONE
CODE 244

LEVEL 1

This mini organ circuit is an electric musical instrument for playing at home which produces different clear soft 25 tones. Including all low to high keys.

Technical specifications:

- power supply: 9VDC.
- consumption: 83mA max. (working), 9mA (stand by)
- there are 25 different tones.
- dimensions: 2.14 x 1.24 inches (keyboard), 3.72 x 0.92 inches (motherboard)

How to works:

IC1 555 timer is connected to be an oscillating circuit producing a wave frequency related to R7 to R32 and C5. R9 to R32 are connected in serie as frequency turner converting the frequency to be different from high to low. TR1 and TR2 are connected to function as low frequency oscillating circuit which makes soft tones. The circuit has two imprinted connected patterns, one is generated and controlled section which produces a tone of a sound and controls its quality to be clear, the other is network section whichanalyses the frequency and being a keyboard.
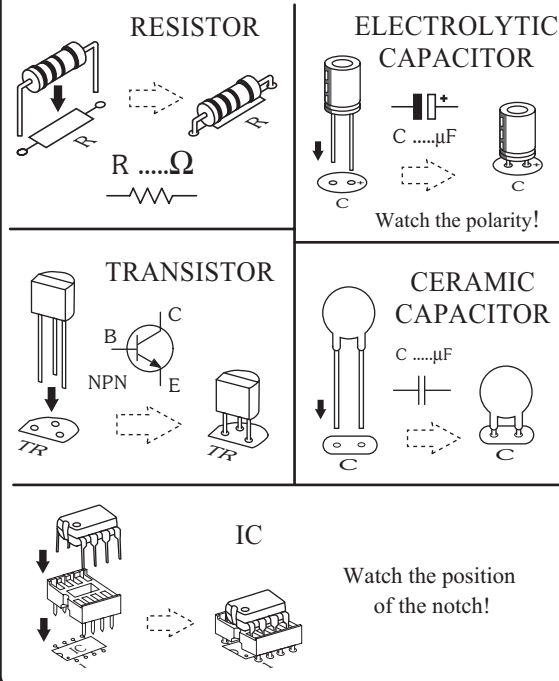
PCB assembly:

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. 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:

This kit has an operating voltage range of 9 VDC. Apply power supply. Touch the probe ("P" point of motherboard) to "A" to "M" point of keyboard, you will hear the tone from the loudspeaker which have 25 differant tones follow touching each point.

Figure 1. Installing the componants

RESISTOR	ELECTROLYTIC CAPACITOR

R .....Ω

Watch the polarity!

TRANSISTOR	CERAMIC CAPACITOR

NPN

IC

Watch the position of the notch!

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.
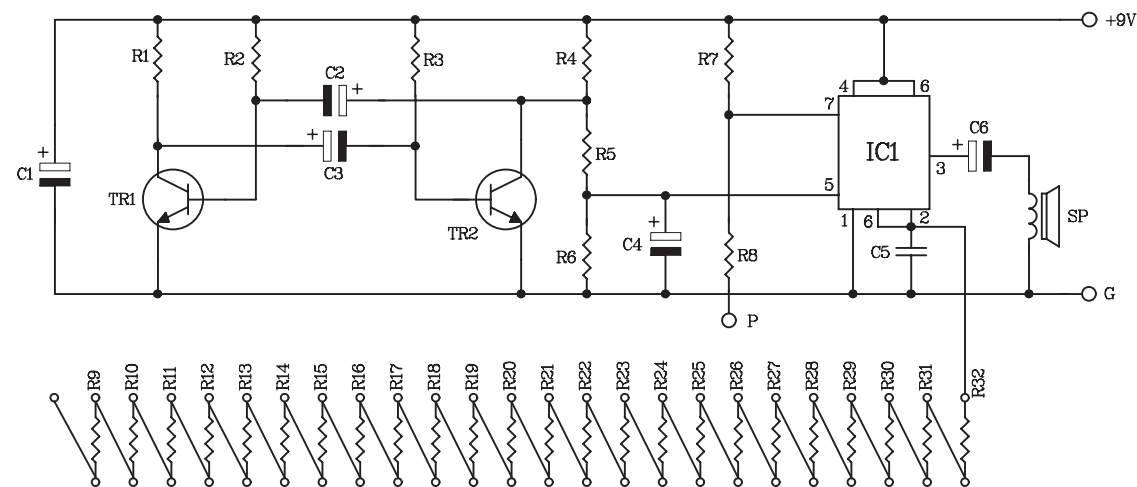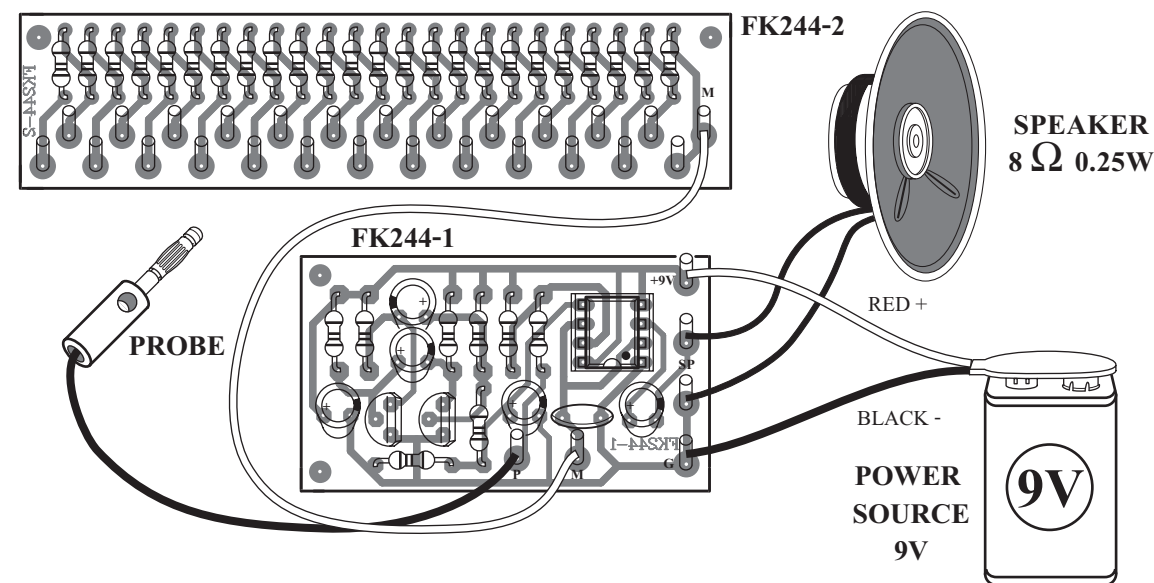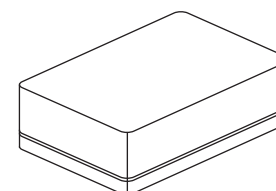

Figure 2. The melody organ 25 tone circuit

Figure 3. Connections

SPEAKER 8 Ω 0.25W

RED +

BLACK -

POWER SOURCE 9V

PROBE

NOTE:

FUTURE BOX FB04 is suitable for this kit.