

SUPER ELECTRONIC RULET 36 DOT
CODE 126 **LEVEL 2**

The super electronic rulet circuit which consist of 36 LEDs and necessitates the current at 9 to 12 volts is used as a game player in spare time, otherwise can be applied as one of running-light decorations.

Technical specifications:

- power supply: 9-12VDC.
- consumption: 50mA max.
- light indication: 36 LEDs, each 5 mm.
- this circuit is apply to chasing light 36 LEDs.
- dimensions of PCB : 4.50 x 4.50 inch.

How to works:

As the circuit is turned on, IC1/2 generate a frequency and transmit to pin 14 of IC3 (CK) resulting to count the 3, 2, 4 and 7 sequentially. Then the pin 10 lets IC3 to reset and recount as a result. Every times that IC3 is reset, IC2 count. As illustrated in figure circuit it can be seen that LED1-LED4 are the first runner. When IC3 firstly reset, IC2 move output to the pin 2 resulting LED5-LED8 to run according to IC3 counting. It works in this fashion till LED33-LED36 finally run according to IC3 counting. After IC3 was third reset, IC2 reset to count starting with the pin 3. Therefore, LED1-LED4 begins to run again. IC1/1 reck on time taken. When the switch is released, C1 disc is charged with electricity. Then IC1/2 gradually oscillates lower frequency until one of LED remains lighted. As C1 disc is charged with electricity till there is low voltage at IC1/1, the pin 4 of IC1/2 is high voltage resulting the LED to be unlighted. IC1/3 reverses the face of time signal which transmitted through IC1/4 to generate a frequency out through the pin 10 and through TR1 in order to be amplify by dynamic buzzer. By this, there is a buzz sound according to LED running. TR2-TR5 reverse signal face from IC3. Supposing J1 spot is connected, the voltage at this one will be standing as the VR1 adjusted so LED continue sequentially running according to the adjustment of VR1 manner.

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!

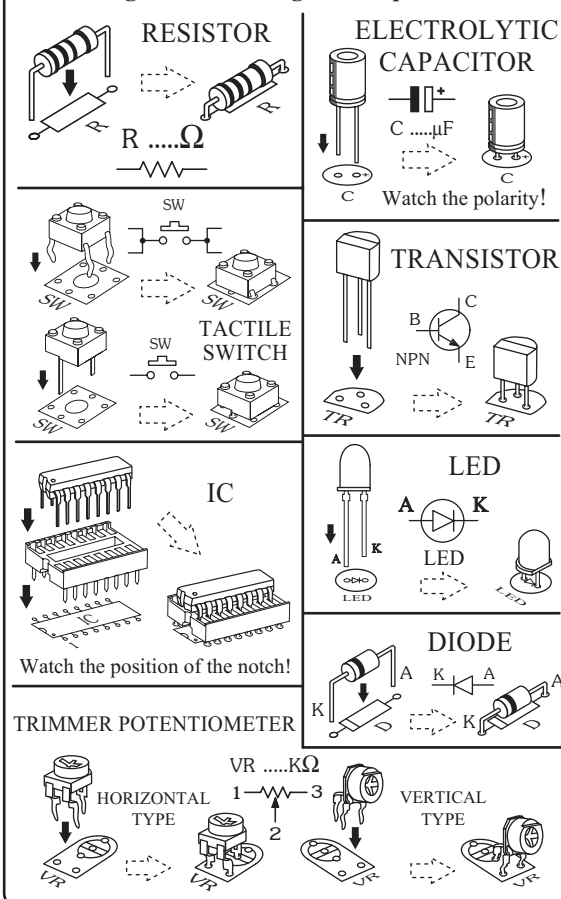
Testing:

This kit has an operating voltage range of 9-12 VDC. Connect the power supply to the circuit. Press the switch SW, LED to be lighted sequentially along with the sound through dynamic buzzer. Release the switch SW, LED gradually run slower and one of LED remains lighted and then automatic unlighted. Connect J1 and adjust VR1 at 22K so LED sequentially run as one like.

Application:

If you want to used as a game player to remove jumper J1 from PC board. But if you want to applied as light decorations to connect jumper J1 and remove the dynamic buzzer. To adjust the running speed, remove C 0.0068 and adjust the speed by VR1.

Figure 1. Installing the components



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.

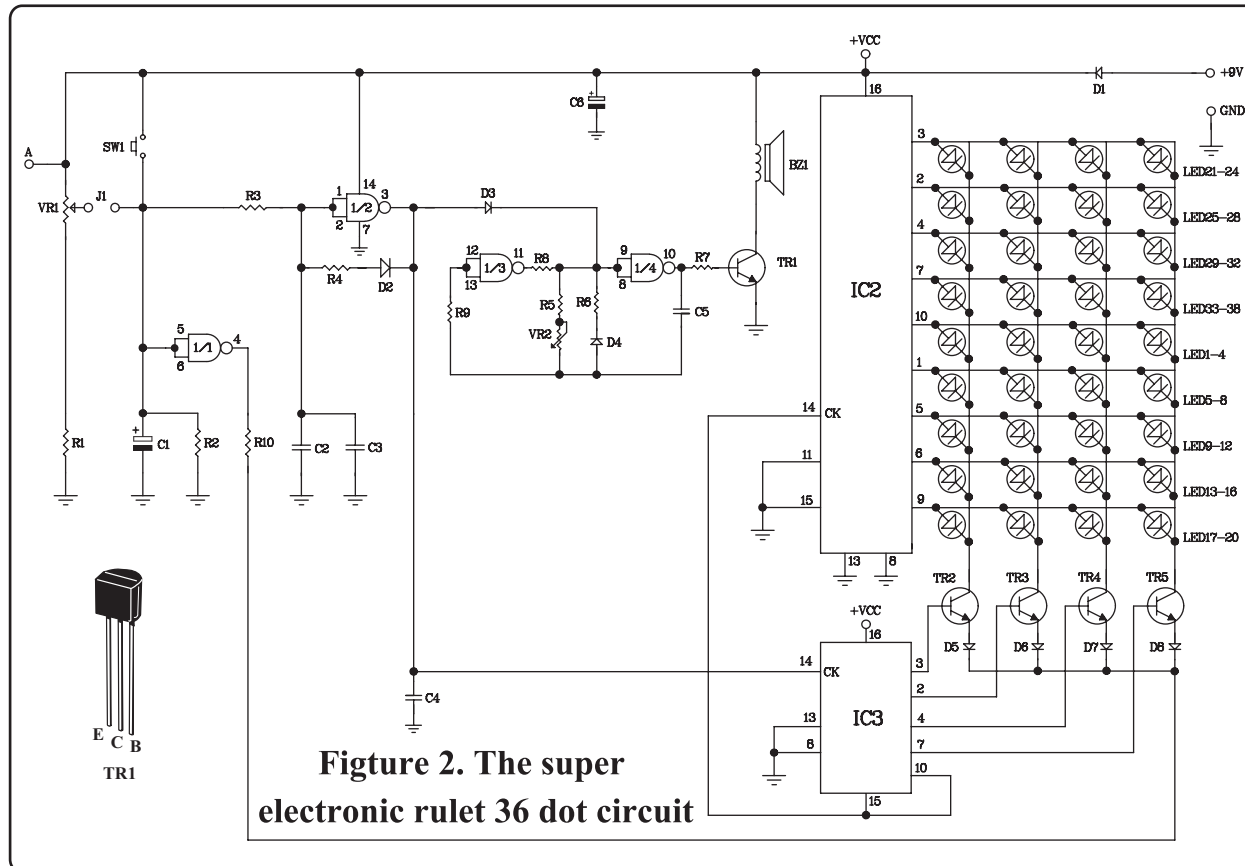


Figure 2. The super electronic rulet 36 dot circuit

