

K203.1 EN Heart Shape Breathing LED effect

The kit includes:
 EN printed circuit board; components according to the list, instruction.
 Store under normal climatic conditions
 Shelf-life Unlimited

The constructor consists of 20 LEDs arranged in the shape of a heart, will decorate a family holiday and a shop window. "Heart" will serve as a good teaching aid for teaching you and your child the basics of electronics. The simplicity of the scheme, ease of assembly and clarity of the result will make the task easier. The result of assembling this constructor is a spectacular LED "heart" with a running fire effect.

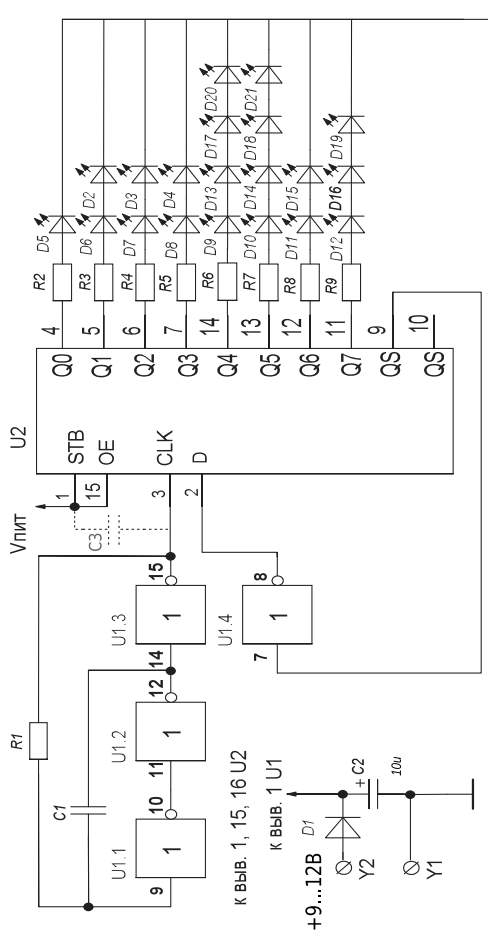
Specifications:

Supply voltage 9 - 12V;
 Current consumption < 150mA;
 Board dimensions 60x60mm

List of components:

R1..... 1-1.1 MΩ
 R2, R3, R4, R5, R8... 620-750 ohms
 R6, R7..... 110-120 ohms
 R9..... 430 ohms
 C1..... 100 nF
 C2..... 47-100 μF x 16V
 D16..... 1N4007
 D1-D15, D17-D21 ... LED
 U1..... 4049
 U2..... 4094
 Board..... PCB203.1

Electrical scheme:



General description:

The device consists of a rectangular pulse generator assembled on the U1 microcircuit, a shift register U2 and 20 LEDs arranged in the shape of a heart. The generator is assembled on the logic elements U1.1, U1.2, U1.3 and the time-setting chain C1-R1. From the generator output, pulses are fed to the input of the U2 microcircuit, which is a sequential shift register. With each incoming pulse, a high logic level will be successively set at the register outputs Q0-Q7, starting with Q0 and shifting to QS. Thus, the LEDs D5, D2-D6, D3-D7, D4-D8, D17-D13-D9-D20, D18-D10-D14-D21, D11-D15, D12-D16-D19 will sequentially light up. When the high signal level reaches QS, the inverter U1.4 inverts the signal, it goes to the D pin of the U2 chip, and now with each pulse at the outputs of the U2 chip, low-level signals will be successively set and the LEDs will go out in the same sequence.

Notes:

When assembling, it is necessary to pay attention to the polarity of the capacitors, LEDs. A correctly assembled circuit does not require debugging and starts working immediately.

