

# VFO-5 bands on MC3362

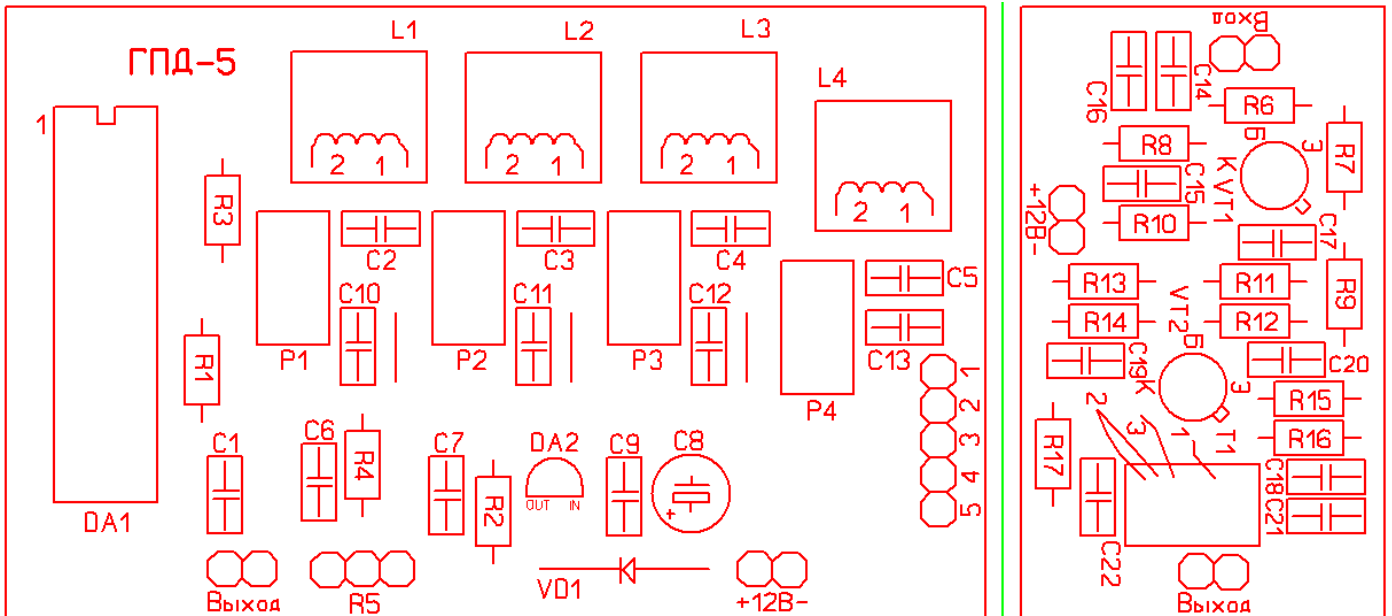
This VFO is based on Motorola MC3362. This chip allows create a functionally complete device – is a radio receiver for operating in FM and SSB modes. This device is designed for heterodyne amateur HF transceiver with a single frequency conversion type "Rosa", "Desna", Druzhba-M", "Klopik" and others with intermediate frequency (IF) 8.86 MHz.

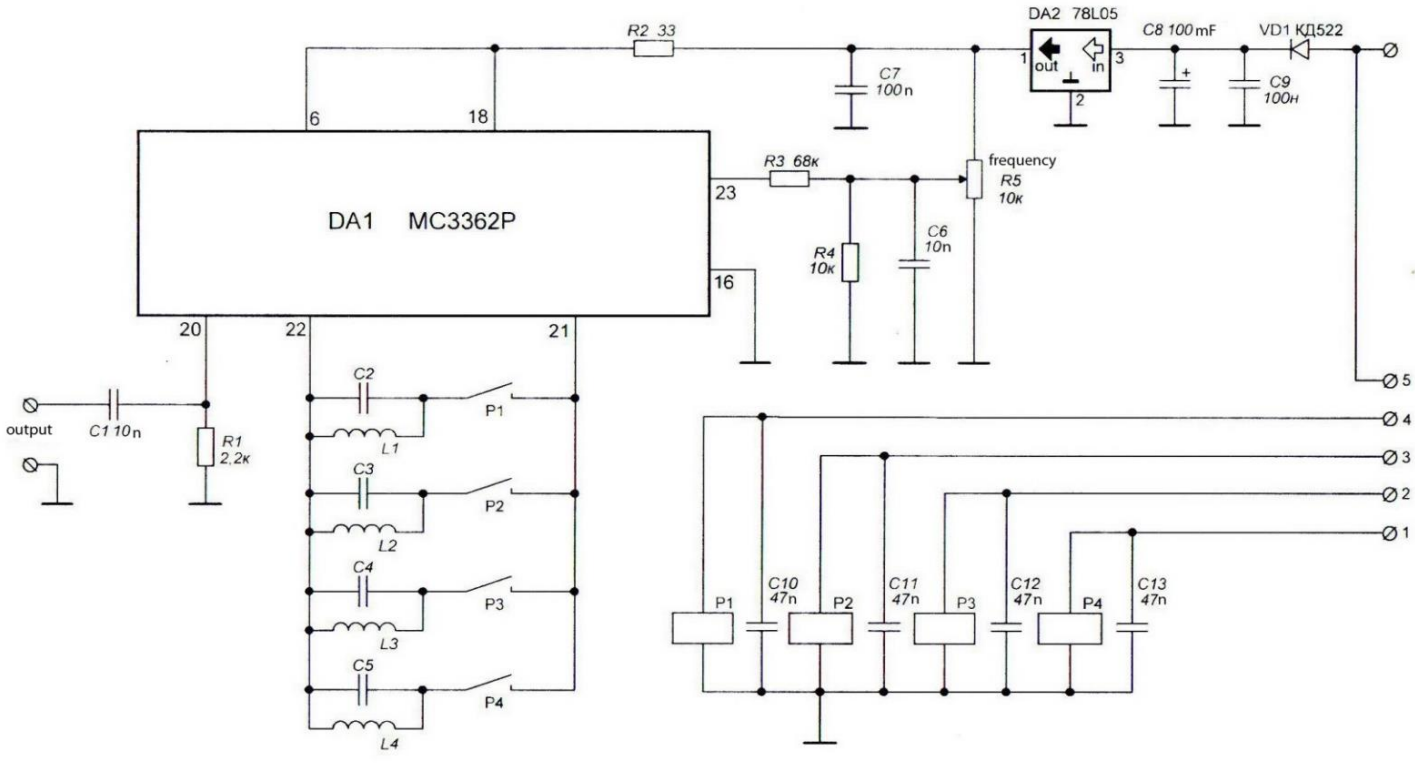
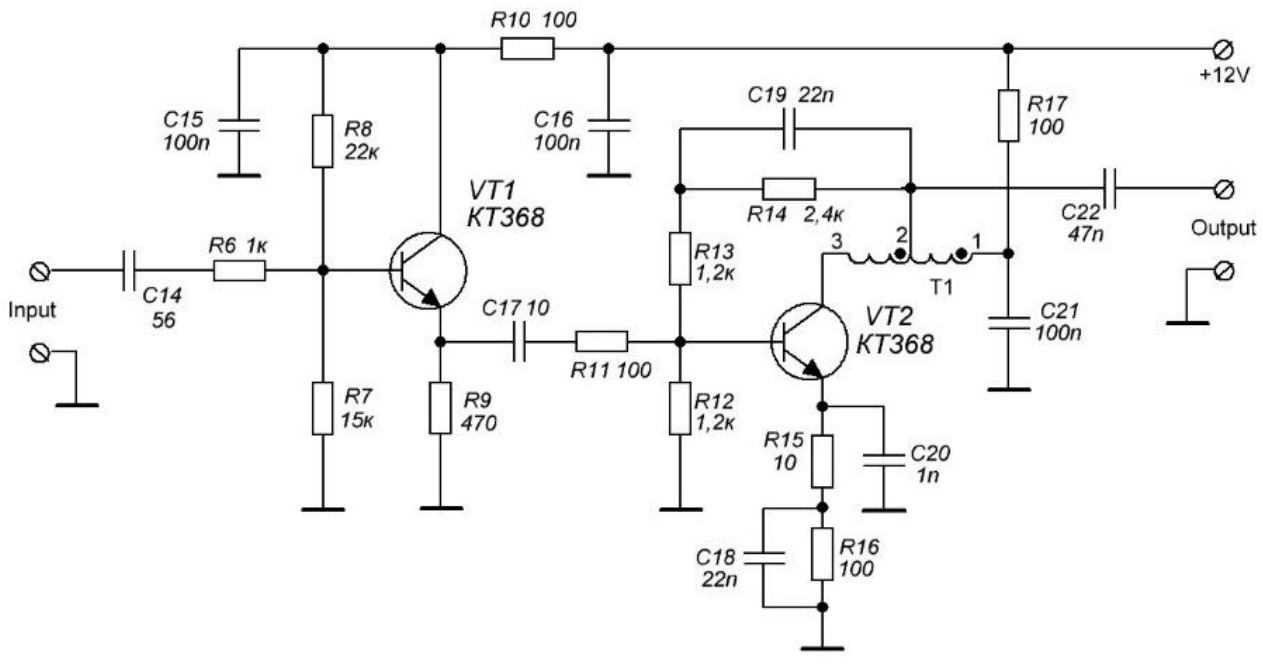
During the tests VFO worked with the different frequencies and kept the stability for more 8 hours. The departure frequency was 200 Hz with a frequency coasting during this time, not to exceed 600 Hz. Alternating sinusoidal voltage at the output of VFO board is 100 mV.

The buffer is assembled on Transistor VT1, and the signal amplification (VFO amplifier) is transistor VT2. At the output of the VFO amplifier, at a load 100 Ω, the sinusoidal voltage is 1-1.2 V. The Range of VFO is from 5 MHz to 20.4 MHz, divided into 4 sub bands – “10 m”, “20 m”, “40 m”, “80 m and 15m”. Tuning ranges of VFO and data circuits L1C2, L2C3, L3C4, L4C5 are shown in the table:

| Band       | Tuning ranges of VFO | Data of coils               | Capacitors |
|------------|----------------------|-----------------------------|------------|
| 10 m       | 19.100 – 20.400 MHz  | L1 – 10 turns, wire 0,2mm   | C2 – 47 pF |
| 20 m       | 5.100 – 5.400 MHz    | L2 – 38 turns, wire 0,16 mm | C3 – 27 pF |
| 40 m       | 15.600 – 16.300 MHz  | L3 – 12 turns, wire 0,2 mm  | C4 – 56 pF |
| 80 & 15 m. | 12.100 – 12.700 MHz  | L4 – 14 turns, wire 0,16 mm | C5 – 43 pF |

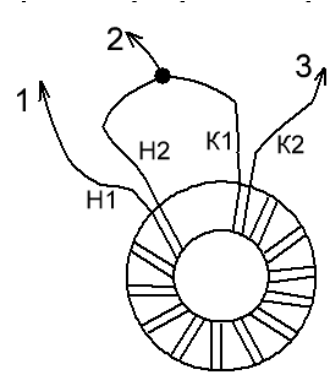
Coils are wound on form with a diameter 6 mm and put into the screens. The relays 12V are regulate the band switching. Tuning is by multi-turn potentiometer 10K. The transformer T1, the VFO amplifier, wound on a ferrite coil 10x6x5; two twisted wires 0.2 mm; 9 turns. (See an illustration on diagram).



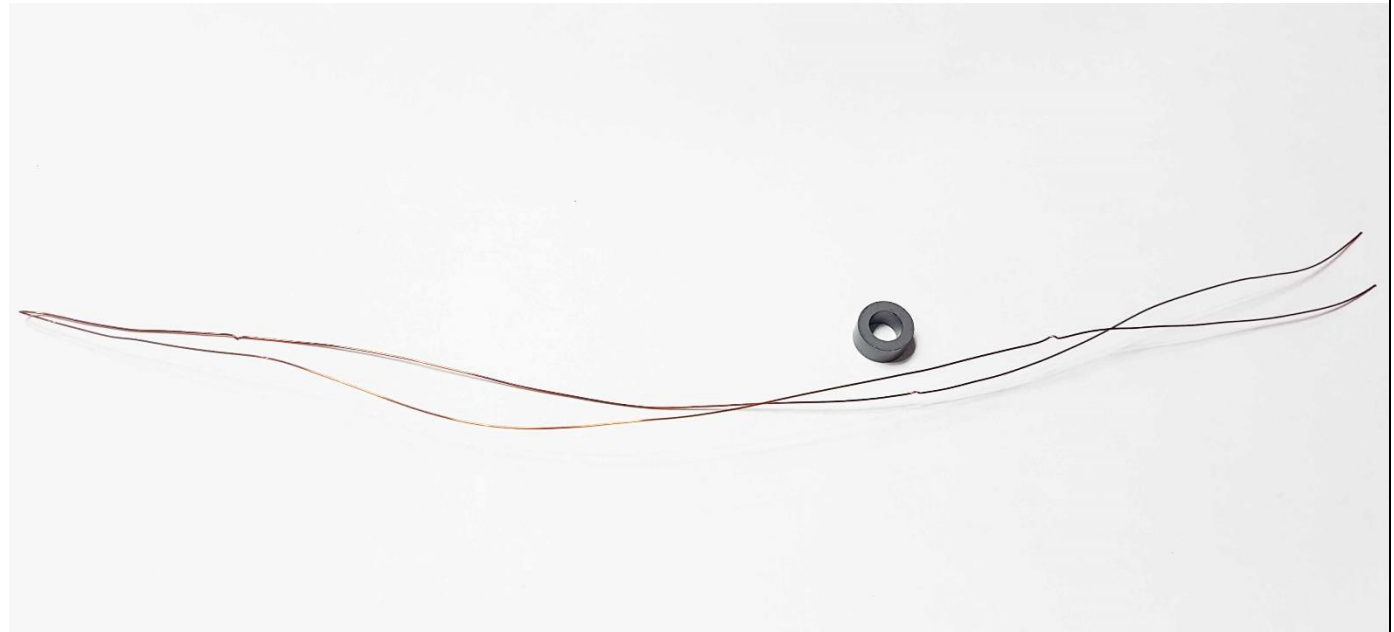


# Transformer T1

The broadband transformer T1 is performed on a toroid K10x6x5 with a wire diameter of 0.2 mm, the number of turns is 2x9. Winding in two twisted wires. In everyday life, twisting two wires is most convenient to do with a screwdriver or drill: one end is inserted into the cartridge, the other is for a ballpoint pen, for example. We turn the drill until we get 2-3 turns per 1 cm. Remove the loop from the handle and remove the second end from the drill chuck – the twist is ready for installation. A detailed illustration of the transformer installation is below.



**Step 1. Take the toroid and piece of wire (50cm). Fold the wire in half as shown**



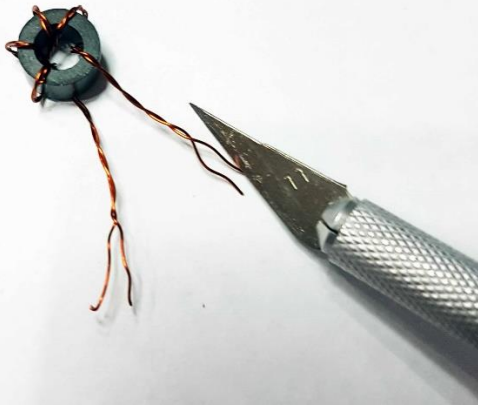
**Step 2. Make a wire twisted. Easy to do it my drill.**



**Step 3. Make wiring (9 turns)**



**Step 4. Cut the isolation from the ends of the wire. Find the ends of wire 1 and wire by using diode tester (multi-tester)**

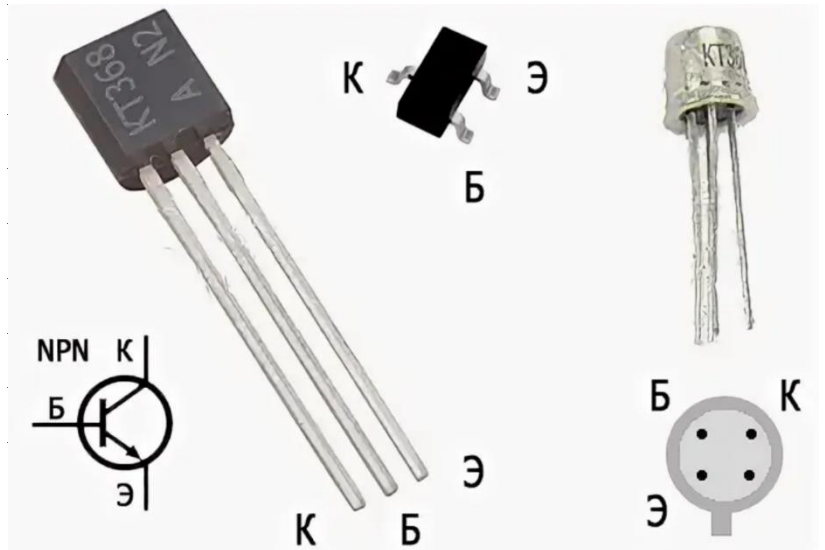
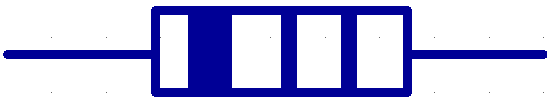
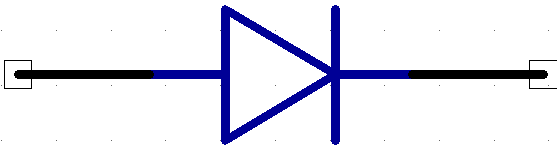


**Step 5. The end of the first wire should be connected to the beginning of the second wire (see illustration on page 1).**

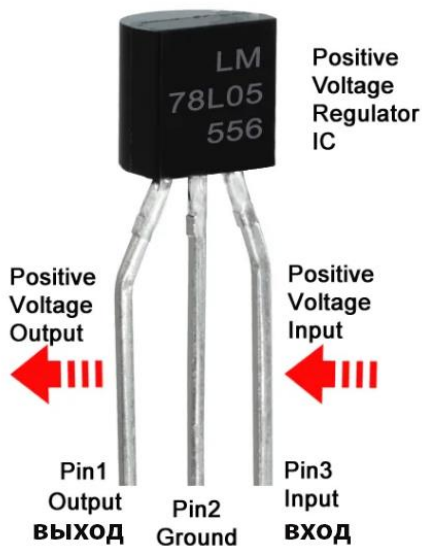


### Pinout of components

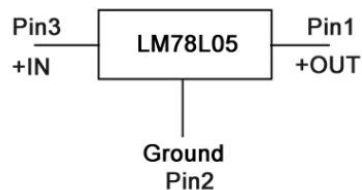
**КД522**



**TO - 92 Package**



**Symbol In Diagram**



**Application Circuit**

