MAXX TRONIC

THE QUALITY ELECTRONIC KIT SET & MODULE

RELAY CARD 1 CH.
CODE MX016

This relay card circuit is the multipurpose circuit. It can be applied to the other circuit.

Technical specifications:

- power supply : 12VDC./ 40mA.max.
- LED indication for operation of relay.
- 500W maximum output load.
- the operation can be choose push-switch or push-on push-off switch.
- Can be used with Maxx Tronic module: MX015 UHF TX/RX module or MX013 encoder/decoder module 10 CH. (TX/RX)
- PCB dimensions : 2.28 x 1.69 inches.

How to works:

In first case , if jump J2 at "F/F" point, the circuit will be operated to push-on push off switch. Q1, Q2 is connected to flip-flop circuit which both transistor will work alternately. When has the voltage at "T" point or push switch SW, Q3 is working and short the voltage to ground, causing filp-flop circuit is working. In the first time, Q1 is working and Q2 is not working and now Q1 is not working and Q2 is working but if trig at "T" point again, Q1 and Q2 will alternated working.

In second case, if jump J2 to "PB" point, the circuit will be operated to push switch. When has no voltage at "T" point, Q3 is not working, causing the collector of Q3 has the high voltage. This high voltage is fed to the base of Q2 through J2. Q2 is working and at the collector of Q2 has no voltage, causing the base of Q1 is working and is not working.

For LED and RELAY is connected to the collector of Q1. When Q1 is working, LED is light on and RELAY is working.

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!

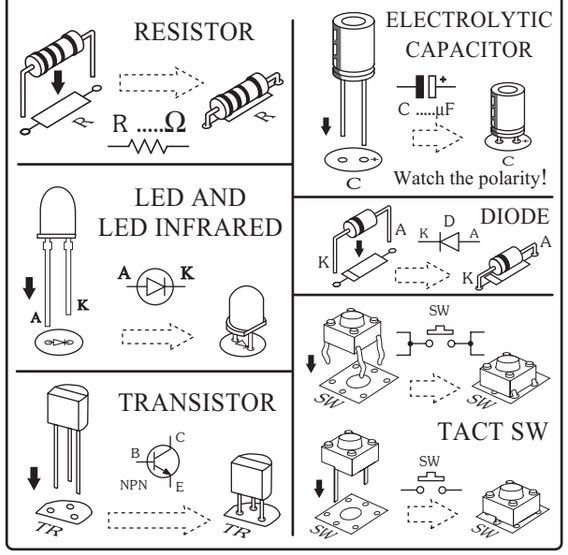
Testing:

Jump J1 to "OFF" point and jump J2 to "F/F" point. Supply the power supply 12VDC to circuit. Push switch TEST, RELAY is working and LED is light on. When push switch TEST again, RELAY is not working and LED is light off. Move jump J2 to "PB" point. Push and hold switch TEST, RELAY is working and LED is light on. But if release switch TEST, RELAY is not working and LED is light off.

Using:

Jumper J1 used for select the output ON or OFF when power-on. Jumper J2 used for select the operation of push-switch or push-on power-off switch. Switch TEST used for test of relay. "T" point used for connected to the control-signal from external.

Figure 1. Installing the componants



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.

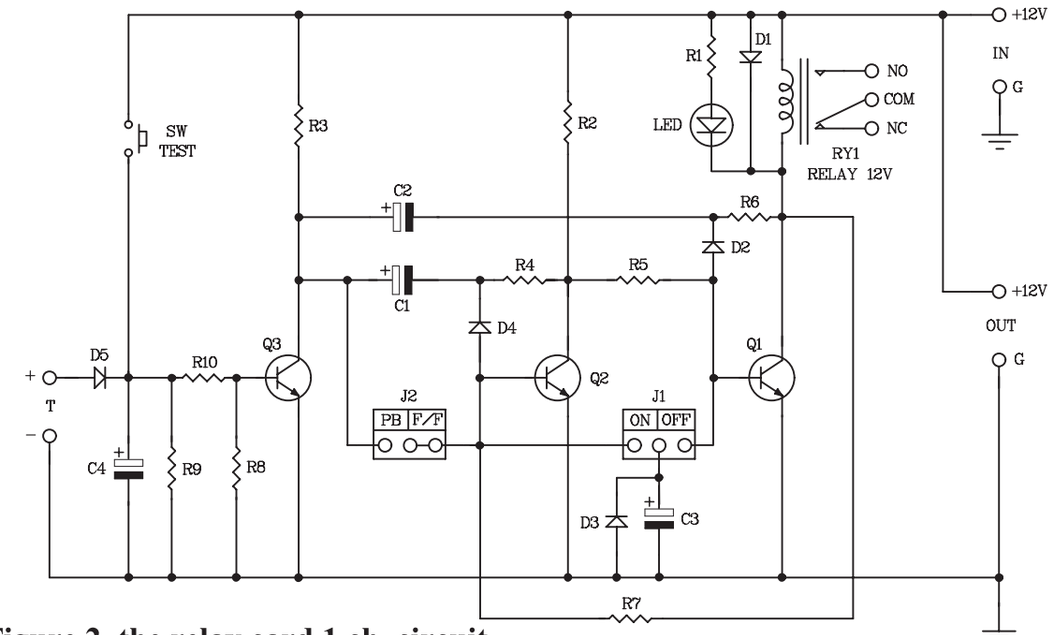


Figure 2. the relay card 1 ch. circuit

Select jumper

J1 : Select output

OFF ON — **ON**

OFF ON — **OFF**

J2 : Select operation

OFF ON — **push-on push-off**

OFF ON — **push switch**

Figure 3. Connections