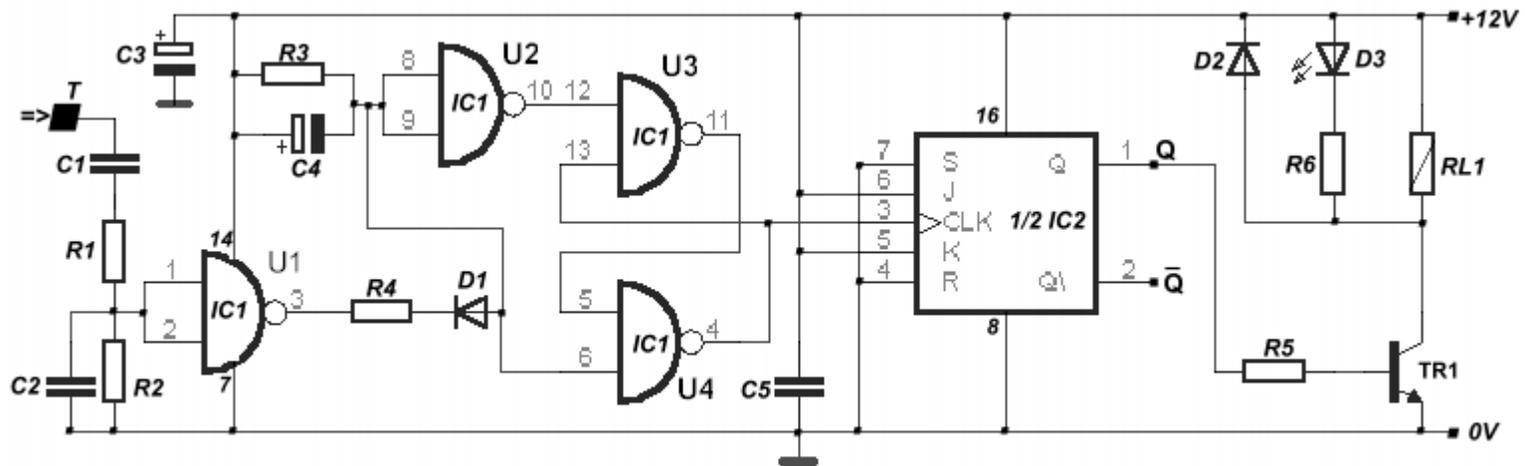# Touch Button

Touch Button

Sam 8/01

   Is acquaintance that circuits CMOS present very big resistance of entry, thus if through this resistance it passes a small current, will be created a enough important fall of voltage, which we can exploit suitably so that we drive various circuits. In this beginning is supported also the operation of touch switch. In the circuit exist four gates NAND and a j-k FLIP FLOP. The Gate U1 is connect, as voltage amplifier and the other as schmitt trigger. In the situation of calm we have logic [0] in the entry of U1, via the R2 and in the his exit [1], so that not conduct the D1. Simultaneously in entry U2, exists logic [1], via the R4. In the exit it has logic [0], with result the exit of U3 has logic [1] and the exit of U4 it finds in the logic [0]. . When we touch the finger our in contact T (square or round metal surface, that should not oxidise easily), in the entry of U1 is

applied a signal 50HZ, that come from the environment and is changed in square pulses, the negative half-s period of which, make conductible the D1, whenever it begins charge the capacitor C4, through resistance R4. After few tenths of second (in order to do not exist accidental excitations from noises), it is presented in the entry of U2 a slow negative forehead and in the exit of U4, a abrupt positive forehead, so that it changes the situation of IC2. In order to we increase the sensitivity of circuit, then it will be supposed is decreased the R2. Hardly we remove the our finger from the contact, they are suppressed the pulses 50 HZ in the entry of U1, it is cut-off the D1, discharge the C4 through the R3 and comes back in logic [0] in the exit of U4, the situation of j-k flip-flop however it does not change because has locked. In order to changes the situation of j-k flip-flop it should we touch again the contact T. From the exits of IC2, we can drive various circuits of power, taking into consideration that the exits of IC2, are complemental (when the one is [1] in pin 1, the other is [0], in the pin 2. The circuit drive the TR1 and relay RL1, but can drive a TRIAC, via a optocoupler or any other circuit, it is enough we use the suitable adaptation. If is not used the second flip-flop of IC 2, all the entries it should in 0V. The circuit can be supplied with stabilised voltage from 6-15V DC and the current roughly 1ma, except circuit that drives.

Part List

R1=1Mohm	C1=10nF 100V Polyest.	IC1=**4011**
R2=10Mohm	C2=100pF	IC2=**4027**
R3=100Kohm	C3=47uF 25V	D1=1N1448
R4=2.2Kohm	C4=2.2uF 25V	D2=1N4148
R5=4.7Kohm	C5=10nF 100V cer.	D3=LED
R6=1.2Kohm	TR1=**BC550C**	RL1=RELAY 12V dc

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