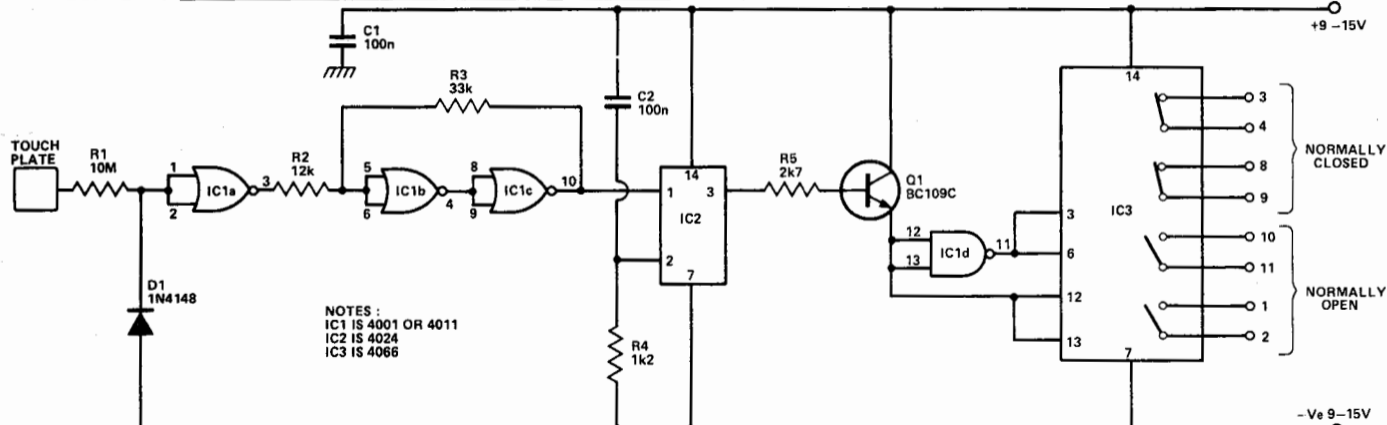


TECH TIPS



One Contact Touch Switch

G.N. Durant

The switch is operated by stray line hum, connected to the touch plate when briefly touched. The hum is coupled to the input of IC1a (used as an inverter) via R1 (a low pass filter). The output of IC1a is not sufficient to operate the final stage, so it goes through a Schmitt trigger (IC1b,c). Once the trigger output starts to change, R3 provides the trigger for a rapid change.

IC2 is a seven stage ripple counter. Q1 is driven from the output of the seventh stage via R5 (current limiter resistor). C2 and R4 reset IC2 at switch - on so the outputs are all low and the switching transistor is off. When the touch -plate is touched, IC2 will receive a 60 Hz signal. At pin 3 the logic state changes every 64 pulses, switching Q1 on and off. The plate is touched until the desired state obtained and then released.

Q1 sends a pulse through to IC3, a solid state CMOS switch. This can be fed via an inverter if desired. The switch must not be used at more than its supply voltage - up to 15 V. The 'off' switch resistance is about 10^{13} ohms and the 'on' resistance is about 80 ohms at 15 V V_{DD} (at 9 V V_{DD} it is 120 ohms).

Tech-Tips is an ideas forum and is not aimed at the beginner; we regret that we cannot answer queries on these items. We do not build up these circuits prior to publication.

ETI is happy to consider circuits or ideas submitted by readers; all items used will be paid for. Drawings should be as clear as possible and the text should be preferably typed. Anything submitted should not be subject to copy right. Items for consideration should be sent to the Editor.