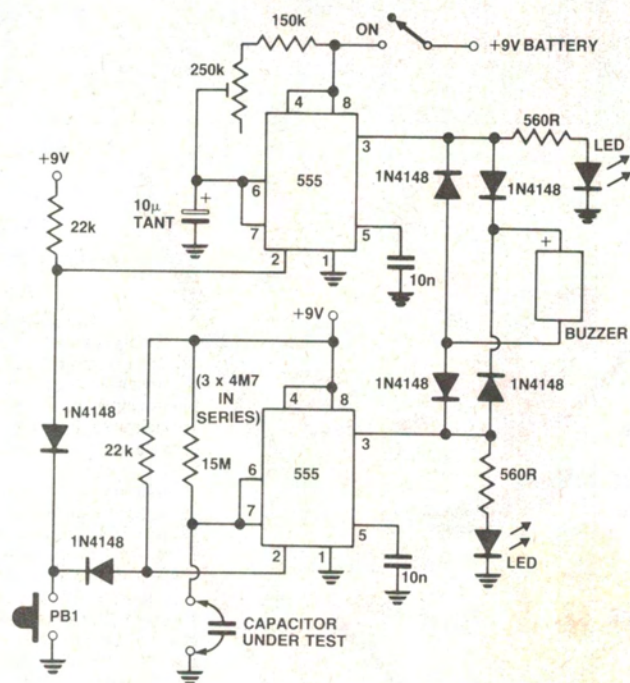


IDEAS FOR EXPERIMENTERS



Capacitance tester

A. Glover of Cootamundra NSW 2590 sent us this idea for a simple, ultra low cost capacitance tester. It works by comparing the value of a known capacitor with one under test. The amount of time the voltage on pin 3 of the 555 is high is proportional to the value of the capacitance hanging off pin 6 and 7. In the circuit shown, when the two capacitors are of the same value the LEDs will be on for the same length of time and the buzzer will not sound. Any discrepancy in value will result in one LED being on for longer than the other and the buzzer sounding.

Flasher

M. Howe of Mitcham, Vic used this variation on the common LED flasher theme in which daylight controls the flasher.

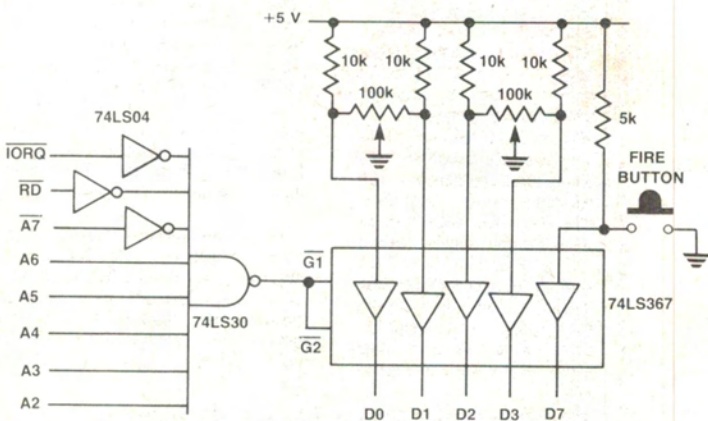
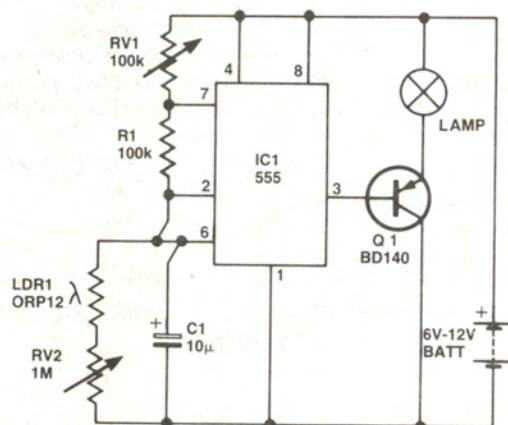
During daylight hours RV2 is adjusted to keep voltage at pins 2 and 6 of IC1 just below 2/3 Vcc. As darkness falls the resistance across the LDR increases until pin 6 sees 2/3 rail voltage and the 555 starts to operate, flashing the light via Q1.

When the sun rises the opposite occurs and C1 is effectively shorted out, stopping the 555.

The prototype, using a 6 V battery, flashes every 1-2 seconds. Current consumption in daylight is 2.4 mA. Operating current depends on the globe used. In daylight RV2 holds pins 2 and 6 at 3.8 V.

I used a BD140 as Q1 because I had a few to spare.

All components except the LDR and light-bulb will fit on a pc board only 25 mm square. The LDR is not affected by the operation of the globe and they can be mounted side by side.



Nine position joystick

This simple circuit was sent to us by R. Howie of Mansfield Qld. It should work with any computer running the Z80 processor and equipped with an expansion port. The two joystick pots are used as voltage dividers for the 74LS367. Gating signals are supplied from the computer via the 74LS30. This circuit is cheap and very easy to build.