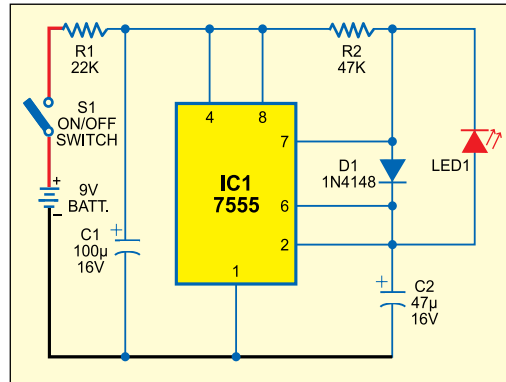


MISER FLASH

■ T.A. BABU

A flashing LED at the doorstep of your garage or home will trick the thieves into believing that a sophisticated security gadget is installed. The circuit is nothing but a low-current drain flasher. It uses a single CMOS timer that is configured as a free running oscillator using a few additional components. As the LED flashes very briefly, the average current through the LED is around $150\ \mu\text{A}$ with a high peak value, which is sufficient for normal viewing. This makes it a real miser.

The 9V battery source is connected via 'on'/'off' switch S1 to the circuit. When switch S1 is closed, the IC receives power from capacitor C1, which



is constantly charged through resistor R1. As capacitor C1 delivers power to IC1, it saves the battery from drain.

Most LEDs consume a current of 20 mA, which in many instances is higher than the power consumed by the rest of the circuit. This is undesirable if the de-

vice is battery-powered. In this circuit, the energy consumed by the LED is a small fraction of the normal value.

Capacitor C2 charges through resistor R2 and diode D1. When the voltage across C2 reaches two-third of the supply voltage, threshold pin 7 of IC1 switches on as a current sink. The capacitor discharges through LED1 into pin 7 rapidly. Diode 1N4148 (D1)

provides the one-way charging path for capacitor C2 via resistor R2. LED1 illuminates briefly for a while with the accumulated charges in C2. Again, the charging cycle repeats. This way, LED continues flashing. A 9V PP3 battery can perfectly handle this job. ●