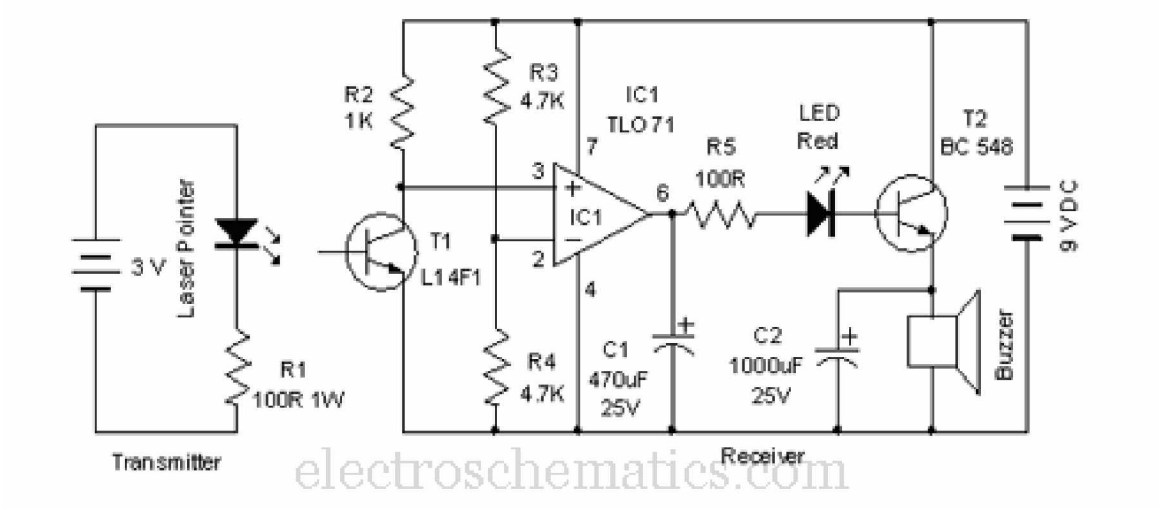
# LASER DOOR ALARM CIRCUIT

This laser door alarm is based on the interruption of Laser beam. A low cost Laser pointer is used as the source of light beam. When somebody breaks the laser path, the alarm will be generated for few seconds.




The laser door alarm circuit has two sections. The laser transmitter is a laser pointer readily available. It should be powered with 3 volt DC supply and fixed on one side of the door frame. The receiver has a Phototransistor at the front end. L14F1 NPN Darlington phototransistor is used as the laser sensor. IC1 is used as a voltage comparator with its inverting input tied to a potential divider R2-R3. So that the inverting input is kept at half supply voltage.

The non inverting input receives a variable voltage based on the conduction of T1. The receiver should be fixed on the opposite door frame and should be properly aligned to the laser beam. Normally the laser beam illuminates the face of phototransistor and it conducts. This keeps the voltage at pin 3 lower than pin 2 of IC1.

As a result, output of comparator remains low. LED and Buzzer remain off in this state. When a person crosses the door, laser beam breaks and T1 cease to conduct. Collector voltage of T1 rises and voltage at pin 3 of comparator increases and its output becomes high. This activates LED and buzzer. Capacitor C1 keeps the base of T2 high for few seconds even after the output of IC1 becomes low again. C2 gives current to the buzzer for few seconds even after T2 turns off.

Caution: This circuit uses harmful laser rays. Do not look into the Laser pointer. It should not be placed in places accessible to children.