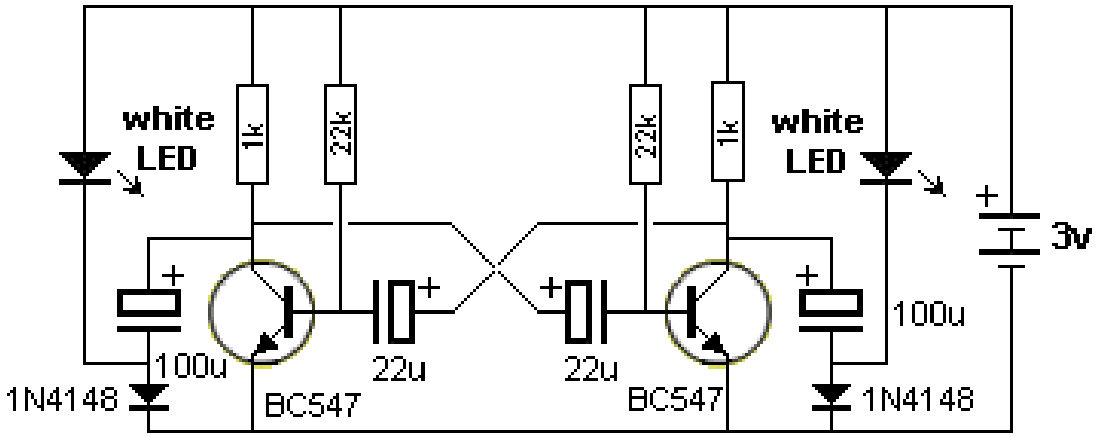
1. DUAL 3V WHITE LED FLASHER

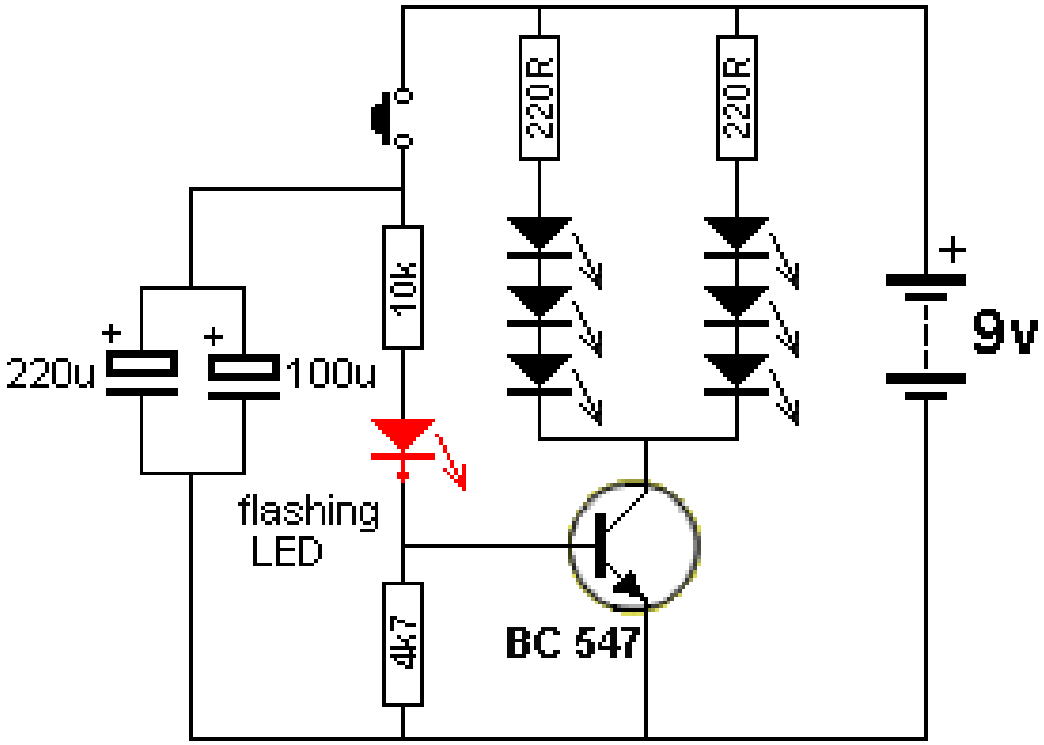
This circuit alternately flashes two white LEDs, on a 3v supply and produces a very bright flash. The circuit produces a voltage higher than 5v if the LED is not in circuit but the LED limits the voltage to its characteristic voltage of 3.2v



DUAL 3V WHITE LED FLASHER

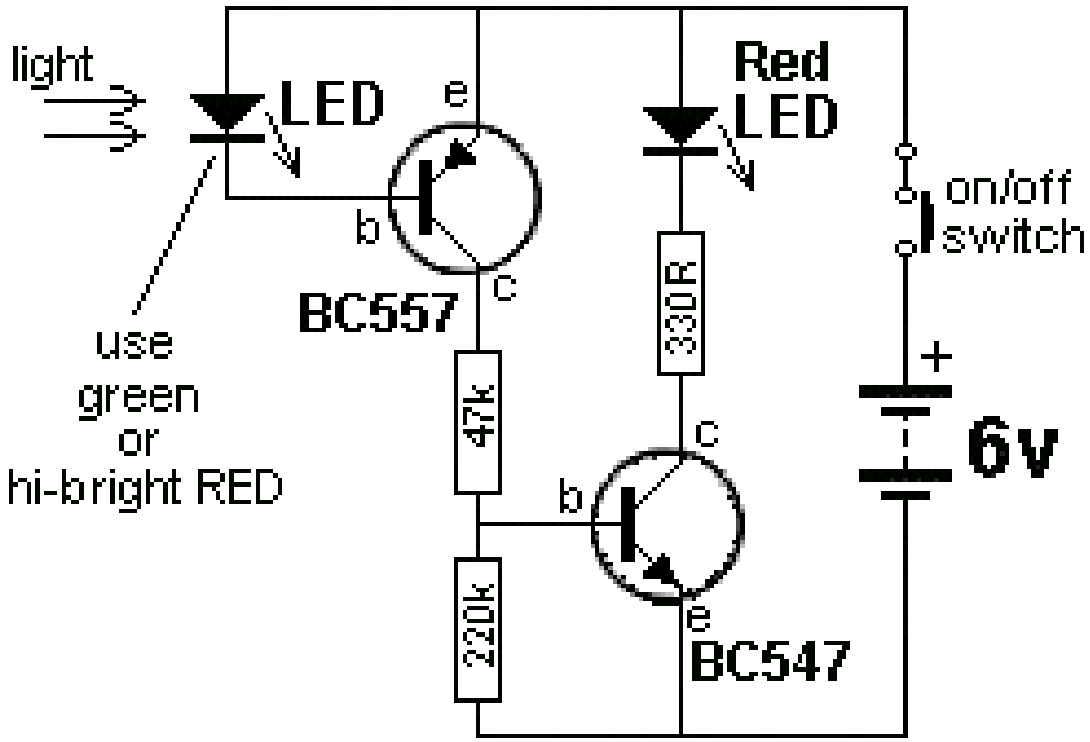
2. LED FLASHES FOR 5 SECONDS AFTER BUTTON IS RELEASED

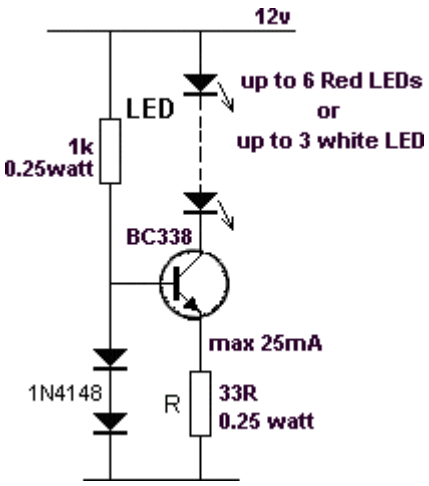
This circuits uses a FLASHING LED - not an ordinary LED. When the switch is pressed, the LEDs flash for about 5 seconds when the switch is released. and turn off. The circuit takes NO CURRENT after the LEDs have turned OFF. You can experiment with the value of the electrolytics, the 4k7 and 10k to get the result you want. Use red or green LEDs. Only 2 white LEDs can used in each string for 9v supply



3. LED DETECTS LIGHT

All LEDs give off light of a particular colour but some LEDs are also able to detect light. Obviously they are not as good as a device that has been specially made to detect light; such as solar cell, photocell, photo resistor, light dependent resistor, photo transistor, photo diode and other photo sensitive devices. A green LED will detect light and a high-bright red LED will respond about 100 times better than a green LED, but the LED in this position in the circuit is classified as very high impedance and it requires a considerable amount of amplification to turn the detection into a worthwhile current-source. All other LEDs respond very poorly and are not worth trying. The accompanying circuit amplifies the output of the LED and enables it to be used for a number of applications. The LED only responds when the light enters the end of the LED and this makes it ideal for solar trackers and any time there is a large difference between the dark and light conditions. It will not detect the light in a room unless the lamp is very close.

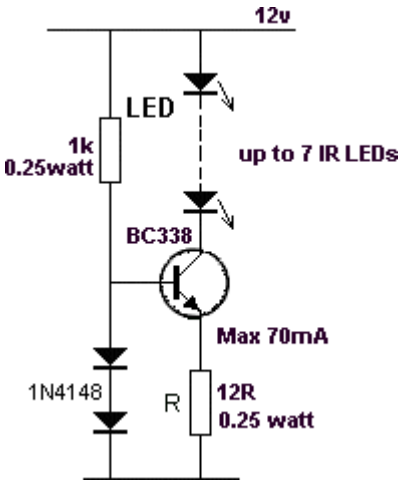




4. LED driver for 12v CAR

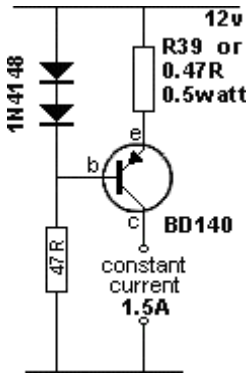
Here is a simple circuit that will drive any number of LEDs in a single string with a constant 25mA without having to work out the value of the dropper resistor. You can use up to 6 red LED or up to 3 white LEDs with the same circuit.
The supply can be 12v to 16v without the brightness altering.

-



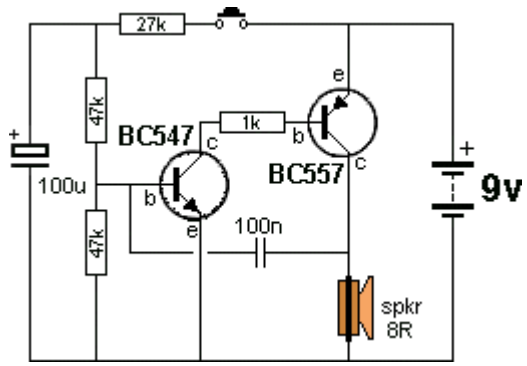
5. LED driver IR LEDs in a 12v CAR

This circuit will drive up to 7 IR LEDs at a constant current of 70mA from a 12v supply. These LEDs will illuminate ultra-violet sensitive paint to produce a white glow.



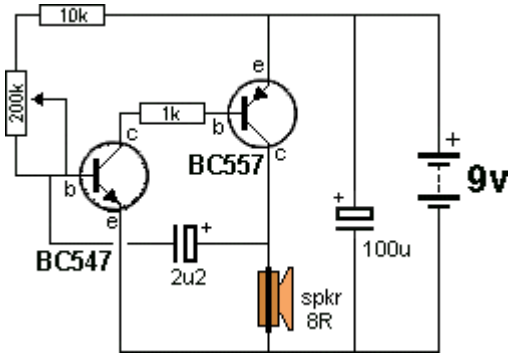
6. CONSTANT CURRENT SOURCE circuit 4

The output will be limited to 100mA by using a red LED and 10R for Re.
The output will be limited to 500mA by using a red LED and 2R2 for Re.
BC328 - 800mA max
Use a BD140 in the first circuit and the output will be limited to 1A by using a red LED and 1R0 for R_e.
5watt LEDs (sometimes called "White Big Chip LEDs") have a characteristic voltage across them of 3.2v and draw 1.75amp.
1, 2 or 3 can be connected in series to the second circuit using a heatsinked BD140 transistor.



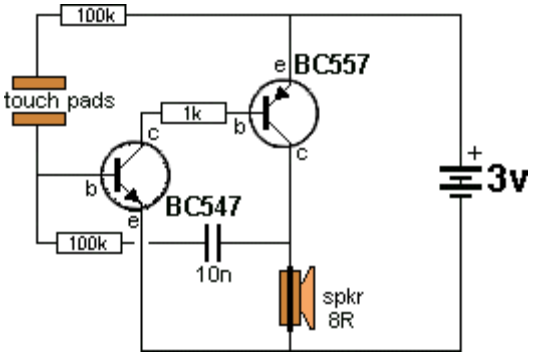
7. SIREN
This circuit produces a wailing or siren sound that gradually increases and decreases in frequency as the 100u charges and discharges when the push-button is pressed and released. In other words, the circuit is not automatic. You need to press the button and release it to produce the up/down sound.

-



8. TICKING BOMB

This circuit produces a sound similar to a loud clicking clock. The frequency of the tick is adjusted by the 220k pot.
The circuit starts by charging the 2u2 and when 0.65v is on the base of the NPN transistor, it starts to turn on. This turns on the BC 557 and the voltage on the collector rises. This pushes the small charge on the 2u2 into the base of the BC547 to turn it on more.
This continues when the negative end of the 2u2 is above 0.65v and now the electro starts to charge in the opposite direction until both transistors are fully turned on. The BC 547 receives less current into the base and it starts to turn off. Both transistors turn off very quickly and the cycle starts again.

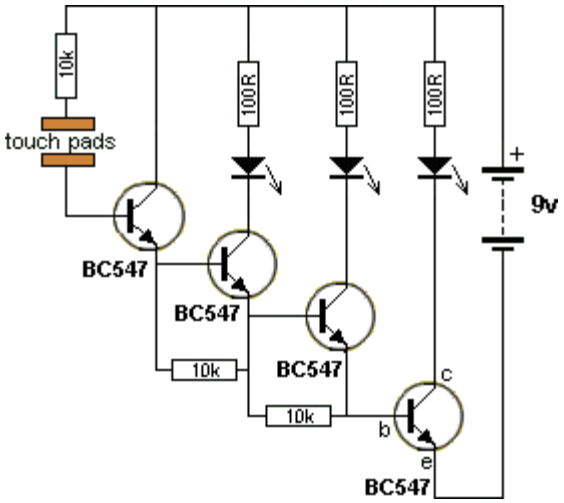


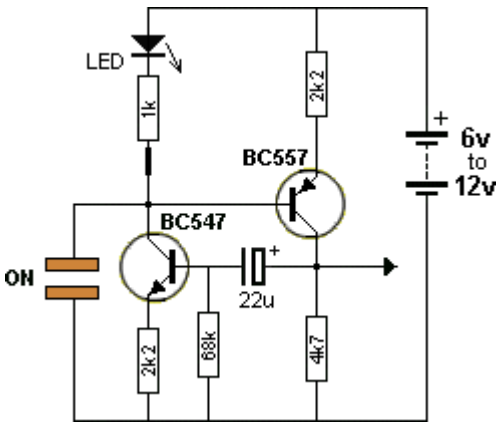
9. LIE DETECTOR-1

This circuit detects the resistance between your fingers to produce an oscillation. The detection-points will detect resistances as high as 300k and as the resistance decreases, the frequency increases.
Separate the two touch pads and attach them to the back of each hand. As the subject feels nervous, he will sweat and change the frequency of the circuit.
The photos show the circuit built on PC boards with separate touch pads.

10. LIE DETECTOR-4

This circuit detects the resistance between your fingers to turn the 3LEDs. As you press harder, more LEDs are illuminated. The circuit is simpler than **Lie Detector-3**.

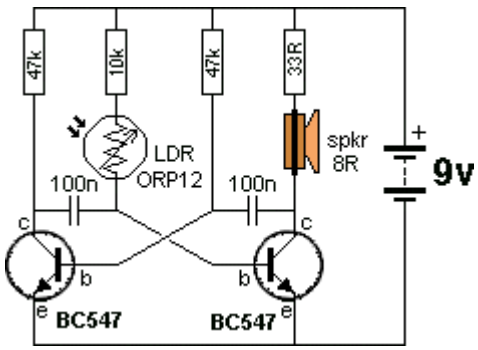




11. TOUCH SWITCH-2

This circuit detects the skin resistance of a finger to turn the circuit ON for about 1 second. The output can be taken to a counting circuit. The circuit consumes no current when in quiescent mode:

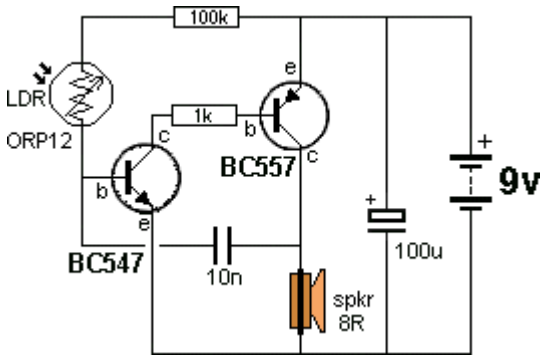
-



12. LIGHT ALARM - 1

This circuit operates when the Light Dependent Resistor receives light.
When no light falls on the LDR, its resistance is high and the transistor driving the speaker is not turned on.
When light falls on the LDR its resistance decreases and the collector of the second transistor falls. This turns off the first transistor slightly via the second 100n and the first 100n puts an additional spike into the base of the second transistor. This continues until the second transistor is turned on as hard as it can go. The first 100n is now nearly charged and it cannot keep the second transistor turned on. The second transistor starts to turn off and both transistors swap conditions to produce the second half of the cycle.

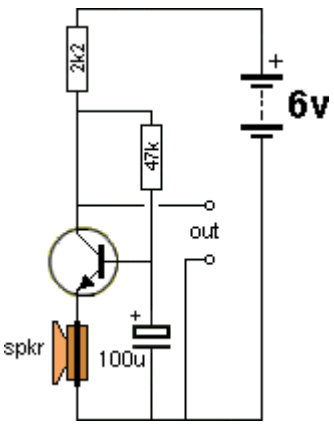
-



13. LIGHT ALARM - 2

This circuit is similar to Light Alarm -1 but produces a louder output due to the speaker being connected directly to the circuit.
The circuit is basically a high-gain amplifier that is turned on initially by the LDR and then the 10n keeps the circuit turning on until it can turn on no more. The circuit then starts to turn off and eventually turns off completely. The current through the LDR starts the cycle again.

-



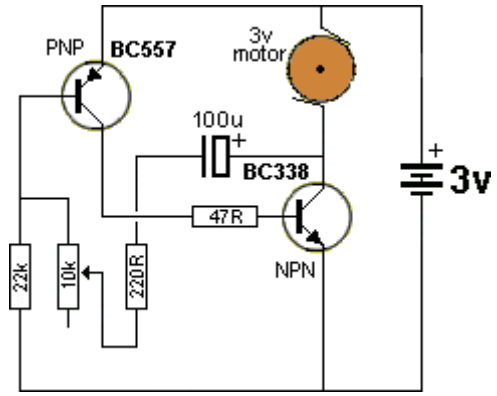
14. DYNAMIC MICROPHONE AMPLIFIER

This circuit takes the place of an electret microphone. It turns an ordinary mini speaker into a very sensitive microphone.
Any NPN transistors such as BC 547 can be used. The circuit will work from 3v to 9v. It is a common-base amplifier and accepts the low impedance of the speaker to produce a gain of more than 100.

15. SIMPLE MOTOR SPEED CONTROL

This circuit is better than reducing the RPM of a motor via a resistor. Firstly it is more efficient. And

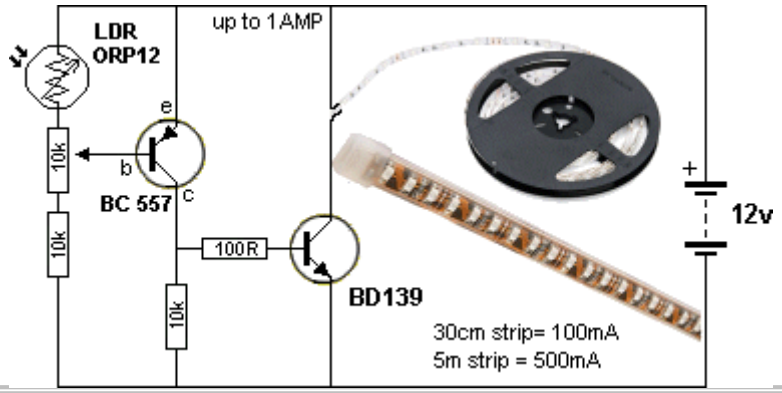
secondly it gives the motor a set of pulses and this allows it to start at low RPM. It's a simple Pulse-Width circuit or Pulse-Circuit.



16. NIGHT LIGHT

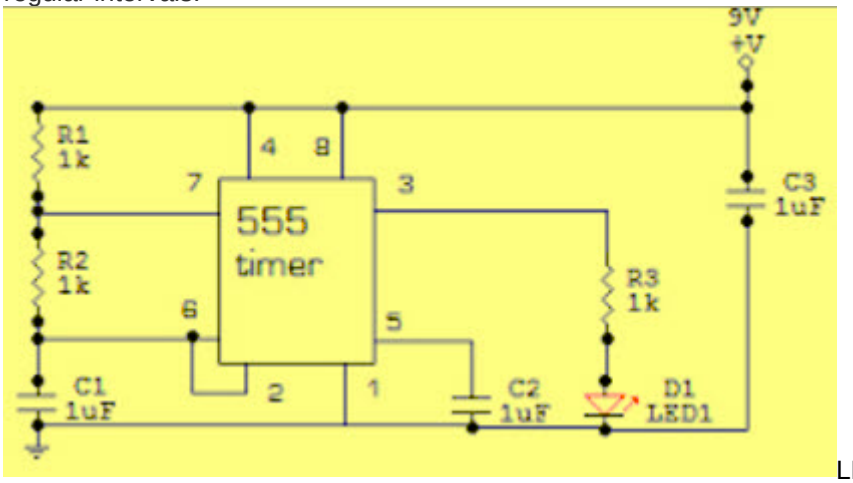
This circuit activates a relay when illumination falls below a preset level on the Light Dependent Resistor (Photo Cell).

This circuit will drive 30cm strips to 5m strips. Two 5m strips have been tested with this circuit.



17. LED Flasher Circuit

The circuit configuration of LED flasher is shown below. The following circuit is built with one of the most popular components like the 555 timer and integrated circuits. This circuit will blink the led ON & OFF at regular intervals.

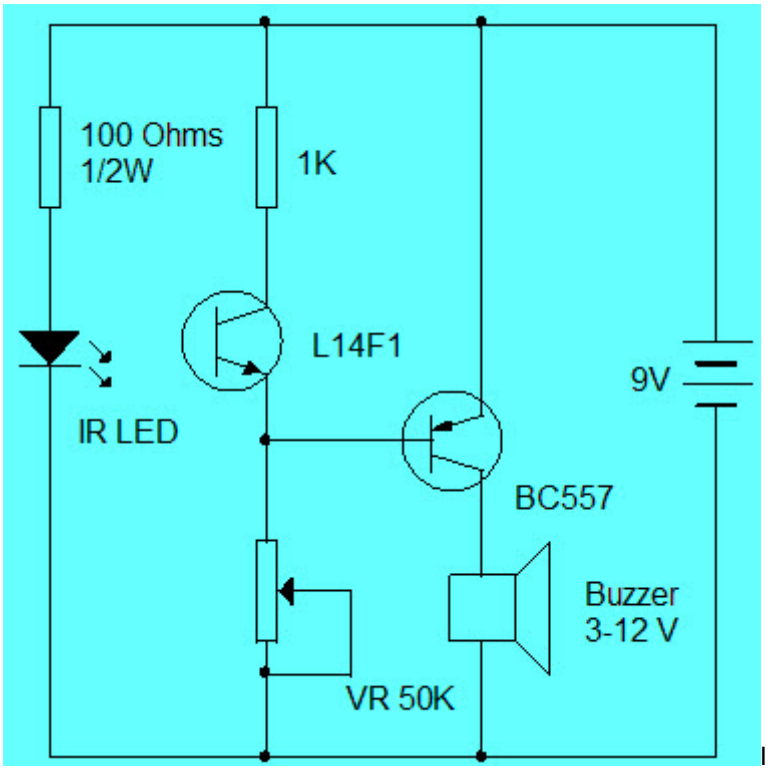


LED Flasher Circuit

From left to right in the circuit, the capacitor and the two transistors set the time and it takes to switch the LED ON or OFF. By changing the time it takes to charge the capacitor to activate the timer.The IC 555 timer is used to determine the time of the LED stays ON & OFF. It includes a difficult circuit inside, but since it is enclosed in the integrated circuit.The two capacitors are located at the right side of the timer and these are required for the timer to work properly. The last part is the LED and the resistor. The resistor is used to restrict the current on the LED. So, it won't damage

18. Invisible Burglar Alarm

The circuit of the invisible burglar alarm is built with a photo transistor and an IR LED. When there is no obstacle in the path of infrared rays, an alarm will not generate buzzer sound. When somebody crosses the Infrared beam, then an alarm generated buzzer sound. If the photo transistor and the infrared LED are enclosed in black tubes and connected perfectly, the circuit range is 1 meter.



Invisible Burglar Alarm

When the infrared beam falls on the L14F1 photo transistor, it performs to keep the BC557 (PNP) out of conduction and the buzzer will not generate the sound in this condition. When the infrared beam breaks, then the photo transistor turns OFF, permitting the PNP transistor to perform and the buzzer sounds. Fix the photo transistor and infrared LED on the reverse sides with correct position to make the buzzer silent. Adjust the variable resistor to set the biasing of the PNP transistor.Here other kinds of photo transistors can also be used instead of LI4F1, but L14F1 is more sensitive.