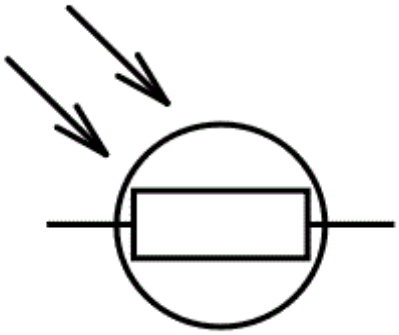
1.INTRODUCTION:

This Laser Security System is very useful in high command security place. In a high secured place where nobody is allowed to enter we can install it. These are easy to install and work at both within as well as outside houses. These are very effective perimeter alarm systems around properties. In indoor systems can utilize the normal power outlets and jacks making them inconspicuous. At outside these can be easily be hidden behind the bushes or plants without causing any damage. They consume less power when compared to the laser system as the whole, which is expensive. These laser systems can be installed in homes either by self or by hiring a technical person. By technological innovations cost of the security systems has been cut to a large extent. So, making laser systems one among affordable security system options can be very safe. It has ability to work continuously; it is not only human but also a small animal or any other movable objects. Its alarming Sound does not stop until anybody stops it after checking. Now we can use this system in a wide range of area.

A security alarm is a system designed to detect intrusion – unauthorized entry – into a building or area. The word LASER stands for Light Amplification by Stimulated Emission of Radiation.These are available in different types like semiconductor, infrared, Ga As laser diode. This has an energy wavelength of approximately 900 nanometers with a beam divergence of 3 million radians i.e. equal to a beam width small beam width.Security alarms are used in residential, commercial, industrial, and military properties for protection against burglary (theft) or property damage, as well as personal protection against intruders. Car alarms likewise protect vehicles and their contents. Prisons also use security systems for control of inmates.

2.LIGHT DEPENDENT RESISTOR(LDR):

A Light Dependent Resistor (LDR) or a photo resistor is a device whose resistivity is a function of the incident electromagnetic radiation. Hence, they are light sensitive devices. They are also called as photo conductors, photo conductive cells or simply photocells. They are made up of semiconductor materials having high resistance. There are many different symbols used to indicate a LDR, one of the most commonly used symbol is shown in the figure below. The arrow indicates light falling on it.



2.1 Working Principle of LDR:

A light dependent resistor works on the principle of photo conductivity. Photo conductivity is an optical phenomenon in which the materials conductivity is increased when light is absorbed by the material. When light falls i.e. when the photons fall on the device, the electrons in the valence band of the semiconductor material are excited to the conduction band. These photons in the incident light should have energy greater than the band gap of the semiconductor material to

make the electrons jump from the valence band to the conduction band. Hence when light having enough energy strikes on the device, more and more electrons are excited to the conduction band which results in large number of charge carriers. The result of this process is more and more current starts flowing through the device when the circuit is closed and hence it is said that the resistance of the device has been decreased. This is the most common working principle of LDR.

2.2 Characteristics of LDR:

LDR's are light dependent devices whose resistance is decreased when light falls on them and that is increased in the dark. When a light dependent resistor is kept in dark, its resistance is very high. This resistance is called as dark resistance. It can be as high as $10^{12}\Omega$ and if the device is allowed to absorb light its resistance will be decreased drastically. If a constant voltage is applied to it and intensity of light is increased the current starts increasing. Figure below shows resistance vs. illumination curve for a particular LDR.

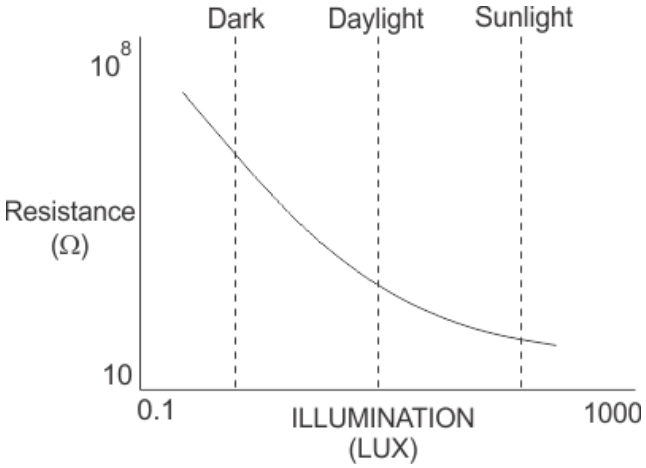


Fig:2 LDR CHARACTERISTICS

Photocells or LDR's are non linear devices. There sensitivity varies with the wavelength of light incident on them. Some photocells might not at all response to a certain range of wavelengths. Based on the material used different cells have different spectral response curves.

When light is incident on a photocell it usually takes about 8 to 12 ms for the change in resistance to take place, while it takes one or more seconds for the resistance to rise back again to its initial value after removal of light. This phenomenon is called as resistance recovery rate. This property is used in audio compressors. Also, **LDR**'s are less sensitive than photo diodes and photo transistor. (A photo diode and a photocell (LDR) are not the same, a photo-diode is a p-n junction semiconductor device that converts light to electricity, whereas a photocell is a passive device, there is no p-n junction in this nor it "converts" light to electricity). Types of Light Dependent Resistors: Based on the materials used they are classified as:

1. Intrinsic photo resistors (Un doped semiconductor): These are made of pure semiconductor materials such as silicon or germanium. Electrons get excited from valance band to conduction band when photons of enough energy fall on it and number charge carriers is increased.

2. Extrinsic photo resistors: These are semiconductor materials doped with impurities which are called as dopants. Theses dopants create new energy bands above the valence band which are filled with electrons. Hence this reduces the band gap and less energy is required in exciting them. Extrinsic photo resistors are generally used for long wavelengths.

2.3 Applications of LDR:

LDR's have low cost and simple structure. They are often used as light sensors. They are used when there is a need to detect absences or presences of light like in a camera light meter. Used in street lamps, alarm clock, burglar alarm circuits, light intensity meters, for counting the packages moving on a conveyor belt, etc.

Photoresistors come in many types. Inexpensive cadmium sulphide cells can be found in many consumer items such as camera light meters, street lights, clock radios, alarm devices, night lights, outdoor clocks, solar street lamps and solar road studs, etc.

They are also used in some dynamic compressors together with a small incandescent or neon lamp, or light-emitting diode to control gain reduction. A common usage of this application can be found in many guitar amplifiers that incorporate an onboard tremolo effect, as the oscillating light patterns control the level of signal running through the amp circuit.The use of CdS and CdSe photoresistors is severely restricted in Europe due to the RoHS ban on cadmium.

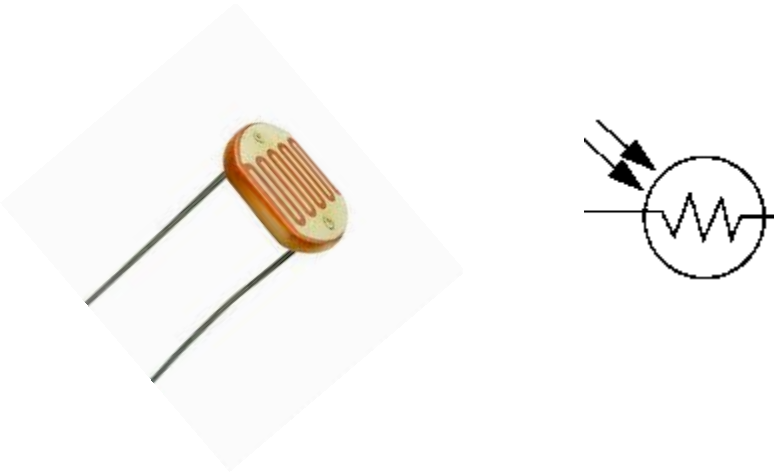


Fig:2.1 symbol of LDR

3.BC547:

It is named as Transistor which is of two terms: “transfer-of-resistor.” It means that the internal resistance of transistor transfers from one value to another values depending on the biasing voltage applied to the Transistor. Thus it is called **TRANS**fer res**ISTOR**: i.e. **TRANSISTOR**.

A Transistor is a semiconductor device used to amplify and switch electronic signals and electrical power. Transistors works wonderfully for computer production. With smart engineering, Transistors help computers power through huge numbers of calculations in a short time. The simple switch operation of transistors is what enables our computer to complete massively complex tasks. In a computer chip, Transistors switch between two binary states — 0 and 1. This is the language of computers. One computer chip can have millions of transistors continually switching, helping complete complex calculations.

Transistors are made from silicon, a chemical element found in sand, which does not normally conduct electricity (it doesn’t allow electrons to flow through it easily).Because electrons have a negative charge, silicon treated this way is called n-type (negative type) and also known as NPN Transistor. We can also dope silicon with other impurities such as boron, gallium, and aluminum. Silicon treated this way will lose some electrons, so electrons in nearby materials will tend to flow into it. A lack of electrons is the same thing as a positive charge, so we call this sort of silicon p-type (positive type) and also known as PNP Transistor.

BC547 is an NPN bi-polar junction transistor. A transistor, stands for transfer of resistance, is commonly used to amplify current. A small current at its base controls a larger current at collector & emitter terminals.BC547 is mainly used for amplification and switching purposes. It has a maximum current gain of 800. Its equivalent transistors are BC548 and BC549.

The transistor terminals require a fixed DC voltage to operate in the desired region of its characteristic curves. This is known as the biasing. For amplification applications, the transistor is biased such that it is partly on for all input conditions. The input signal at base is amplified and taken at the emitter. BC547 is used in common emitter configuration for amplifiers. The voltage divider is the commonly used biasing mode. For switching applications, transistor is biased so that it remains fully on if there is a signal at its base. In the absence of base signal, it gets completely off.

Fig:3.1 BC547

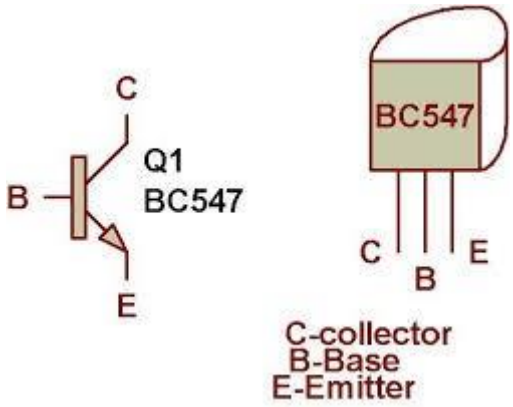


Fig:3.2 BC547 TRANSISTER CONFIGURATION

BC547 is an NPN Bi-polar junction transistor (BJT) as shown in figure 3.1. A transistor, stands for transfer of resistance, is commonly used to amplify current. A small current at its base controls a larger current at collector & emitter terminals.

Together with other electronic components, such as resistors, coils, and capacitors, it can be used as the active component for switches and amplifiers. Like all other NPN transistors, this type has an emitter terminal, a base or control terminal, and a collector terminal as shown in figure 3.2. In a typical configuration, the current flowing from the base to the emitter controls the collector current. A short vertical line, which is the base, can indicate the transistor schematic for an NPN transistor, and the emitter, which is a diagonal line connecting to the base, is an arrowhead pointing away from the base.

BC547 is mainly used for amplification and switching purposes. It has a maximum current gain of 800. Its equivalent transistors are BC548 and BC549. The transistor terminals require a fixed DC voltage to operate in the desired region of its characteristic curves. This is known as the Biasing. For amplification applications, the transistor is biased such that it is partly on for all input conditions. The input signal at base is amplified and taken at the emitter. BC547 is used in common emitter configuration for amplifiers. The voltage divider is the commonly used biasing mode. For switching applications, transistor is biased so that it remains fully on if there is a signal at its base. In the absence of base signal, it gets completely off.

4.POTENTIOMETER:

A potentiometer is a manually adjustable variable resistor with 3 terminals. Two terminals are connected to both ends of a resistive element, and the third terminal connects to a sliding contact, called a wiper, moving over the resistive element. The position of the wiper determines the output voltage of the potentiometer. The potentiometer essentially functions as a variable voltage divider. The resistive element can be seen as two resistors in series(potentiometer resistance), where the wiper position determines the resistance ratio of the first resistor to the second resistor.

A potentiometer is also commonly known as a **potmeter** or **pot**. The most common form of potmeter is the single turn rotary potmeter. This type of pot is often used in audio volume control (logarithmic taper) as well as many other applications. Different materials are used to construct potentiometers, including carbon composition, cermet, wirewound, conductive plastic or metal film.

4.1 Types of potentiometers:

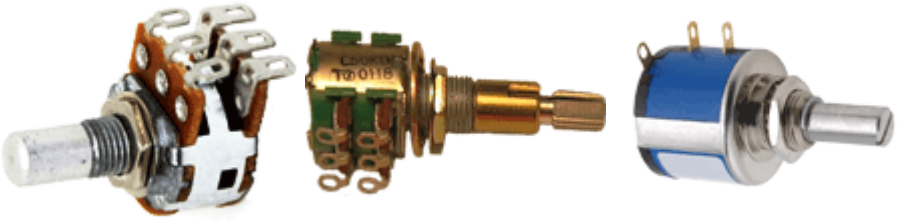
A wide variety of potmeters exist. Manually adjustable potmeters can be divided in rotary or linear movement types. The tables below list the available types and their applications. Besides manually adjustable pots, also electronically controlled potentiometers exist, often called digital potmeters.

Rotary potentiometers:

The most common type of potentiometer where the wiper moves along a circular path.

Type	Description	Applications
Single-turn pot	Single rotation of approximately 270 degrees or 3/4 of a full turn	Most common pot, used in applications where a single turn provides enough control resolution.
Multi-turn pot	Multiple rotations (mostly 5, 10 or 20), for increased precision. They are constructed either with a wiper that follows a spiral or helix form, or by using a worm-gear.	Used where high precision and resolution is required. The worm-gear multi turn pots are often used as trimpots on PCB.
Dual-gang pot	Two potentiometer combined on the same shaft, enabling the parallel setting of two channels. Most common are single turn potentiometers with equal resistance and taper. More than two gangs are possible but not very common.	Used in for example stereo audio volume control or other applications where 2 channels have to be adjusted in parallel.
Concentric pot	Dual potmeter, where the two potentiometers are individually adjusted by means of concentric shafts. Enables the use of two controls on one unit.	Often encountered in (older) car radios, where the volume and tone controls are combined.

Servo pot	A motorized potmeter which can also be automatically adjusted by a servo motor.	Used where manual and automatic adjustment is required. Often seen in audio equipment, where the remote-control can turn the volume control knob.



Dual-gang potentiometer | Concentric potentiometer | Multi-turn potentiometer

Fig:4.1.1 TYPES OF ROTATORY POTENTIOMETERS

Linear potentiometers:

Type	Description
Slide pot	Single linear slider potentiometer, for audio applications also known as a fader. High quality faders are often constructed from conductive plastic.

Dual-slide pot	Dual slide potentiometer, single slider controlling two potentiometers in parallel.
Multi-turn slide	Constructed from a spindle which actuates a linear potentiometer wiper. Multiple rotations (mostly 5, 10 or 20), for increased precision.
Motorized fader	Fader which can be automatically adjusted by a servo motor.

Slide potentiometer

Motorized fader

Multi-turn linear trimpot

Fig:4.1.2 TYPES OF LINEAR POTENTIOMETERS

Potentiometers where the wiper moves along a linear path. Also known as slider, slide pot or fader.

Digital potentiometers:

Digital potentiometers are potentiometers which are controlled electronically. In most cases they exist of an array of small resistive components in series. Every resistive element is equiped with a switch which can serve as the tap-off point or virtual wiper position. A digital potmeter can be controlled by for example up/down signals or protocols like I²C and SPI.

Potentiometer symbol:

The following symbol is used for a potentiometer. The potentiometer symbol on the left is according to the IEC standard. The potmeter symbol on the right is according to the old American standard. An overview of resistor symbols is also available on the resistorguide.

Potentiometer symbol IEC standard

Potentiometer symbol ANSI standard

Fig:4.1.3 SYMBOLS OF POTENTIOMETER

5.LASER:

A laser is a coherent and focused beam of photons; coherent, in this context, means that it is all one wavelength, unlike ordinary light which showers on us in many wavelengths.

The acronym laser stands for "light amplification by stimulated emission of radiation." Lasers work as a result of resonant effects. The output of a laser is a coherent electromagnetic field. In a coherent beam of electromagnetic energy, all the waves have the same frequency and phase.

In a basic laser, a chamber called a cavity is designed to internally reflect infrared (IR), visible-light, or ultraviolet (UV) waves so they reinforce each other. The cavity can contain gases, liquids, or solids. The choice of cavity material determines the wavelength of the output. At each end of the cavity, there is a mirror. One mirror is totally reflective, allowing none of the energy to pass through; the other mirror is partially reflective, allowing approximately 5 percent of the energy to pass through. Energy is introduced into the cavity from an external source; this is called pumping.

As a result of pumping, an electromagnetic field appears inside the laser cavity at the natural (resonant) frequency of the atoms of the material that fills the cavity. The waves reflect back and forth between the mirrors. The length of the cavity is such that the reflected and re-reflected wave fronts reinforce each other in phase at the natural frequency of the cavity substance. Electromagnetic waves at this resonant frequency emerge from the end of the cavity having the partially-

reflective mirror. The output may appear as a continuous beam, or as a series of brief, intense pulses.

The ruby laser, a simple and common type, has a rod-shaped cavity made of a mixture of solid aluminum oxide and chromium. The output is in pulses that last approximately 500 microseconds each. Pumping is done by means of a helical flash tube wrapped around the rod. The output is in the red visible range.

A blue_laser has a shorter wavelength than the red laser, and the ability to store and read two to four times the amount of data.

The helium-neon laser is another popular type, favoured by electronics hobbyists because of its moderate cost. As its name implies, it has a cavity filled with helium and neon gases. The output of the device is bright crimson. Other gases can be used instead of helium and neon, producing beams of different wavelengths. Argon produces a laser with blue visible output. A mixture of nitrogen, carbon dioxide, and helium produces IR output.

Lasers are more than just powerful flashlights. The difference between ordinary light and laser light is like the difference between ripples in your bathtub and huge waves on the sea. You've probably noticed that if you move your hands back and forth in the bathtub you can make quite strong waves. If you keep moving your hands in step with the waves you make, the waves get bigger and bigger. Imagine doing this a few million times in the open ocean. Before long, you'd have mountainous waves towering over your head! A laser does something similar with light waves. It starts off with weak light and keeps adding more and more energy so the light waves become ever more concentrated.

Lasers are one of the most significant inventions developed during the20th century. They have found a tremendous variety of uses in electronics, computer hardware, medicine, and experimental science.

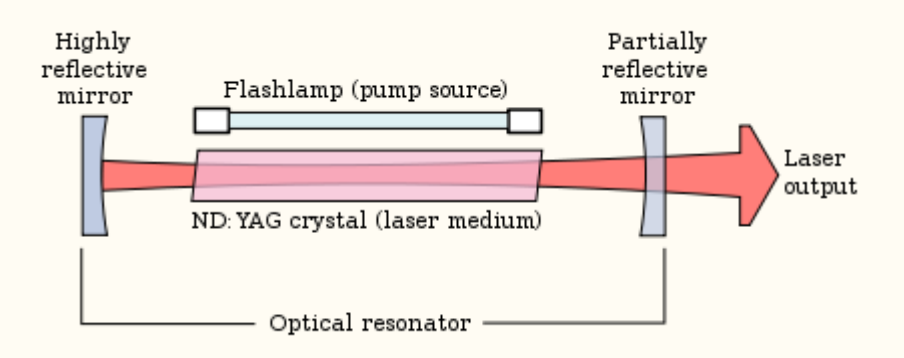


Fig:5 LASER SYSTEM

5.1 CHARACTERISTICS OF LASER:

1. Single wavelength
2. Great intensity
3. Narrow beam

6.BUZZER:

General Description:

A buzzer or beeper is an audio signaling device, which may be mechanical, electromechanical, or piezoelectric. Typical uses of buzzers and beepers include alarm devices, timers and confirmation of user input such as a mouse click or keystroke. Buzzer is an integrated structure of electronic transducers, DC power supply, widely used in computers, printers, copiers, alarms, electronic toys, automotive electronic equipment, telephones, timers and other electronic products for sound devices. Active buzzer 5V Rated power can be directly connected to a continuous sound, this section dedicated sensor expansion module and the board in combination, can complete a simple circuit design, to "plug and play."

Fig:6 Buzzer

A buzzer or beeper is an audio signaling device, which may be mechanical, electromechanical, or piezoelectric. Typical uses of buzzers and beepers include alarm devices, timers and confirmation of user input such as a mouse click or keystroke. Early devices were based on an electromechanical system identical to an electric bell without the metal gong. Similarly, a relay may be connected to interrupt its own actuating current, causing the contacts to buzz. Often these units were anchored to a wall or ceiling to use it as a sounding board. The word "buzzer" comes from the rasping noise that electromechanical buzzers made. piezoelectric element may be driven by an oscillating electronic circuit or other audio signal source, driven with a piezoelectric audio amplifier. Sounds commonly used to indicate that a button has been pressed are a click, a ring or a beep.

Uses:

- Annunciator panels
- Electronic metronomes
- Game show lock-out device
- Microwave ovens and other household appliances
- Sporting events such as basketball games
- Electrical alarms

7.SWITCH:

In electrical engineering, a **switch** is an electrical component that can "make" or "break" an electrical circuit, interrupting the current or diverting it from one conductor to another. The mechanism of a switch removes or restores the conducting path in a circuit when it is operated. It may be operated manually, for example, a light switch or a keyboard button, may be operated by a moving object such as a door, or may be operated by some sensing element for pressure, temperature or flow

Fig:7 SWITCH

The most familiar form of switch is a manually operated electromechanical device with one or more sets of electrical contacts, which are connected to external circuits. Each set of contacts can be in one of two states: either "closed" meaning the contacts are touching and electricity can flow between them, or "open", meaning the contacts are separated and the switch is nonconducting. The mechanism actuating the transition between these two states (open or closed) can be either a "toggle" (flip switch for continuous "on" or "off") or "momentary" (push-for "on" or push-for "off") type.

A switch may be directly manipulated by a human as a control signal to a system, such as a computer keyboard button, or to control power flow in a circuit, such as a light switch. Automatically operated switches can be used to control the motions of machines, for example, to indicate that a garage door has reached its full open position or that a machine tool is in a position to accept another workpiece. Switches may be operated by process variables such as pressure, temperature, flow, current, voltage, and force, acting as sensors in a process and used to automatically control a system. For example, a thermostat is a temperature-operated switch used to control a heating process. A switch that is operated by another electrical circuit is called a relay. Large switches may be remotely operated by a motor drive mechanism. Some switches are used to isolate electric power from a system, providing a visible point of isolation that can be padlocked if necessary to prevent accidental operation of a machine during maintenance, or to prevent electric shock.

An ideal switch would have no voltage drop when closed, and would have no limits on voltage or current rating. It would have zero rise time and fall time during state changes, and would change state without "bouncing" between on and off positions. Practical switches fall short of this ideal; they have resistance, limits on the current and voltage they can handle, finite switching time, etc. The ideal switch is often used in circuit analysis as it greatly simplifies the system of equations to be solved, but this can lead to a less accurate solution. Theoretical treatment of the effects of non-ideal properties is required in the design of large networks of switches, as for example used in telephone exchanges.

8.IC 555 TIMER:

The 555 timer IC was first introduced around 1971 by the Signetics Corporation as the SE555/NE555 and was called "The IC Time Machine" and was also the very first and only commercial timer IC available. It provided circuit designers with a relatively cheap, stable, and user-friendly integrated circuit for both monostable and astable applications. Since this device was first made commercially available, a myriad of novel and unique circuits have been developed and presented in several trade, professional, and hobby publications. The past ten years some manufacturers stopped making these timers because of competition or other reasons. Yet other companies, like NTE (a subdivision of Philips) picked up where some left off. Although these days the CMOS version of this IC, like the Motorola MC1455, is mostly used, the regular type is still available, however there have been many improvements and variations in the circuitry.

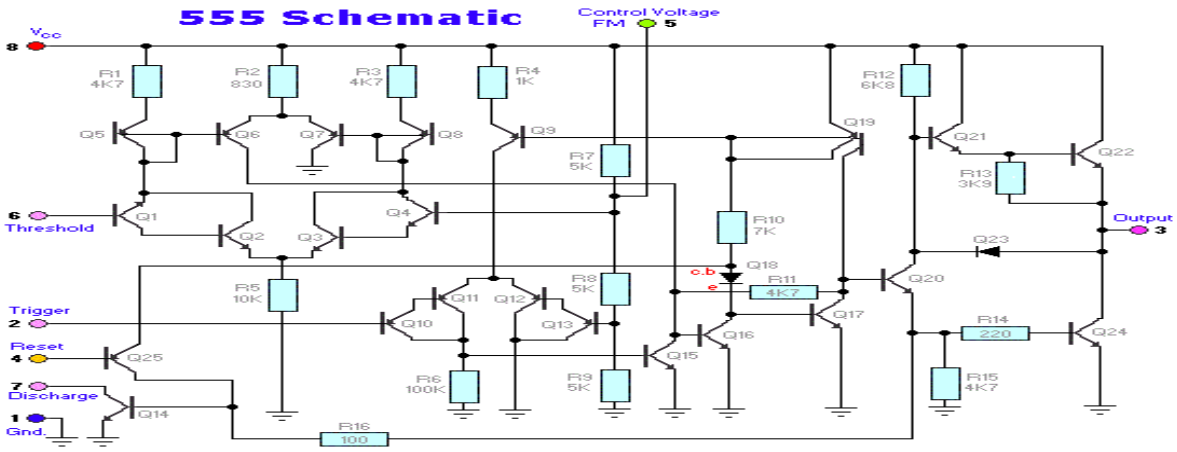


Fig:8 Schematic representation of 555 timer

8.1 pin description:

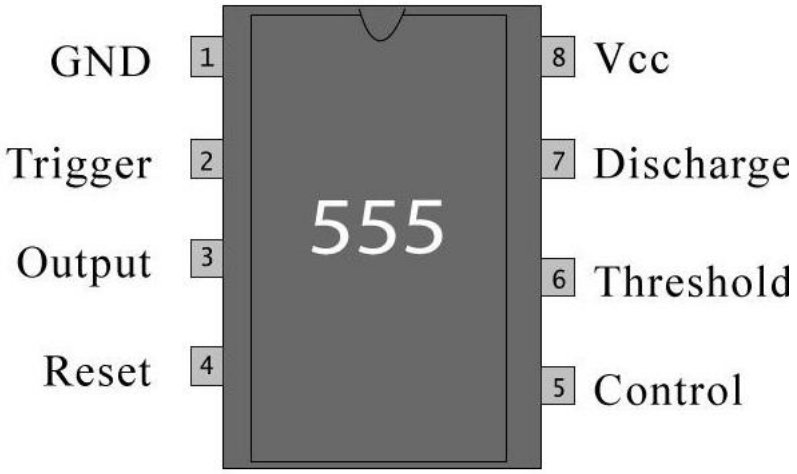


Fig:8.1 pin diagram

Pin 1 (Ground):

The ground (or common) pin is the most-negative supply potential of the device, which is normally connected to circuit common (ground) when operated from positive supply voltages.

Pin 2 (Trigger):

This pin is the input to the lower comparator and is used to set the latch, which in turn causes the output to go high. This is the beginning of the timing sequence in monostable operation. Triggering is accomplished by taking the pin from above to below a voltage level of 1/3 V+ (or, in general, one-half the voltage appearing at pin 5). The action of the trigger input is level-sensitive,

allowing slow rate-of-change waveforms, as well as pulses, to be used as trigger sources.

Pin 3 (Output):

The output of the 555 comes from a high-current totem-pole stage made up of transistors Q20 - Q24. Transistors Q21 and Q22 provide drive for source-type loads, and their Darlington connection provides a high-state output voltage about 1.7 volts less than the V+ supply level used. Transistor Q24 provides current-sinking capability for low-state loads referred to V+ (such as typical TTL inputs). Transistor Q24 has a low saturation voltage, which allows it to interface directly, with good noise margin, when driving current-sinking logic. Both the rise and fall times of the output waveform are quite fast, typical switching times being 100nS.

Pin 4 (Reset):

This pin is also used to reset the latch and return the output to a low state. The reset voltage threshold level is 0.7 volt, and a sink current of 0.1mA from this pin is required to reset the device. These levels are relatively independent of operating V+ level; thus the reset input is TTL compatible for any supply voltage.

The reset pin will force the output to go low no matter what state the other inputs to the flip-flop are in. When not used, it is recommended that the reset input be tied to V+ to avoid any possibility of false resetting.

Pin 5 (Control Voltage):

This pin allows direct access to the 2/3 V+ voltage-divider point, the reference level for the upper comparator. It also allows indirect access to the lower comparator, as there is a 2:1 divider (R8 - R9) from this point to the lower-comparator reference input.

. This fact is not obvious in many 555 circuits since I have seen many circuits with 'no-pin-5' connected to anything, but this is the proper procedure. The small ceramic cap may eliminate false triggering.

Pin 6 (Threshold):

Pin 6 is one input to the upper comparator (the other being pin 5) and is used to reset the latch, which causes the output to go low.

The voltage range that can safely be applied to the threshold pin is between V+ and ground. A dc current, termed the threshold current, must also flow into this terminal from the external circuit. This current is typically 0.1µA, and will define the upper limit of total resistance allowable from pin 6 to V+. For either timing configuration operating at V+ = 5 volts, this resistance is 16 MW For 15 volt operation, the maximum value of resistance is 20 MW.

Pin 7 (Discharge):

This pin is connected to the open collector of a NPN transistor (Q14), the emitter of which goes to ground, so that when the transistor is turned "on", pin 7 is effectively shorted to ground. Usually the timing capacitor is connected between pin 7 and ground and is discharged when the transistor turns "on". The conduction state of this transistor is identical in timing to that of the output stage. It is "on" (low resistance to ground) when the output is low and "off"

(high resistance to ground) when the output is high.

Pin 8 (V +):

The V+ pin (also referred to as Vcc) is the positive supply voltage terminal of the 555 timer IC. Supply-voltage operating range for the 555 is +4.5 volts (minimum) to +16 volts (maximum), and it is specified for operation between +5 volts and + 15 volts. There are special and military devices available that operate at voltages as high as 18 V.

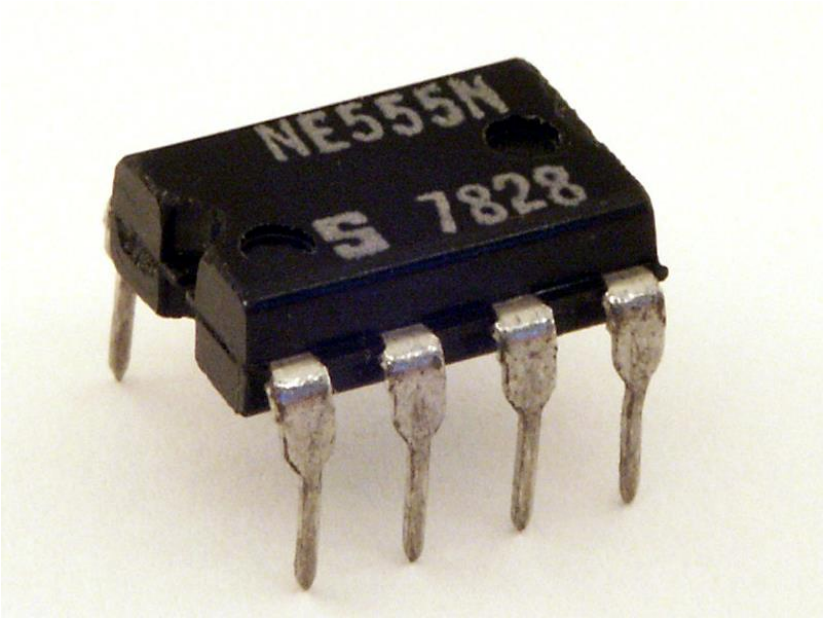


Fig:8.2 NE 555 timer

9.Result of Laser Security System:

9.1 Result:

The field of alarms and sensors is a very developed one. New and improved types of alarms and sensors are always coming into the market and the choice between the different types seems quite difficult. Despite the baffling selection, you should understand that all Security systems have a very similar basic structure and work in accordance to the same principles. An Security system is comprised of a main control box to which sensors are connected. When the sensors identify a break-in, they send out a signal to the control box, which, in turn, sounds the alarm or performs other predefined tasks.

It is a simple circuit using 555 Timer. This circuit is triggered when the Laser beam falls on the LDR[Light Depending Resistor] interrupts, which sounds the buzzer connected to it. This can be used to protect your valuable items, money, room etc.. By using different mirror arrangements you can form different security systems.

WORKING:

When the switch is ON, Always the laser light will fall on the LDR. If any obstacle or a person will interrupt the falling of light on the LDR,Then the buzzer will start making sound.so that one can notice that some one entered there.

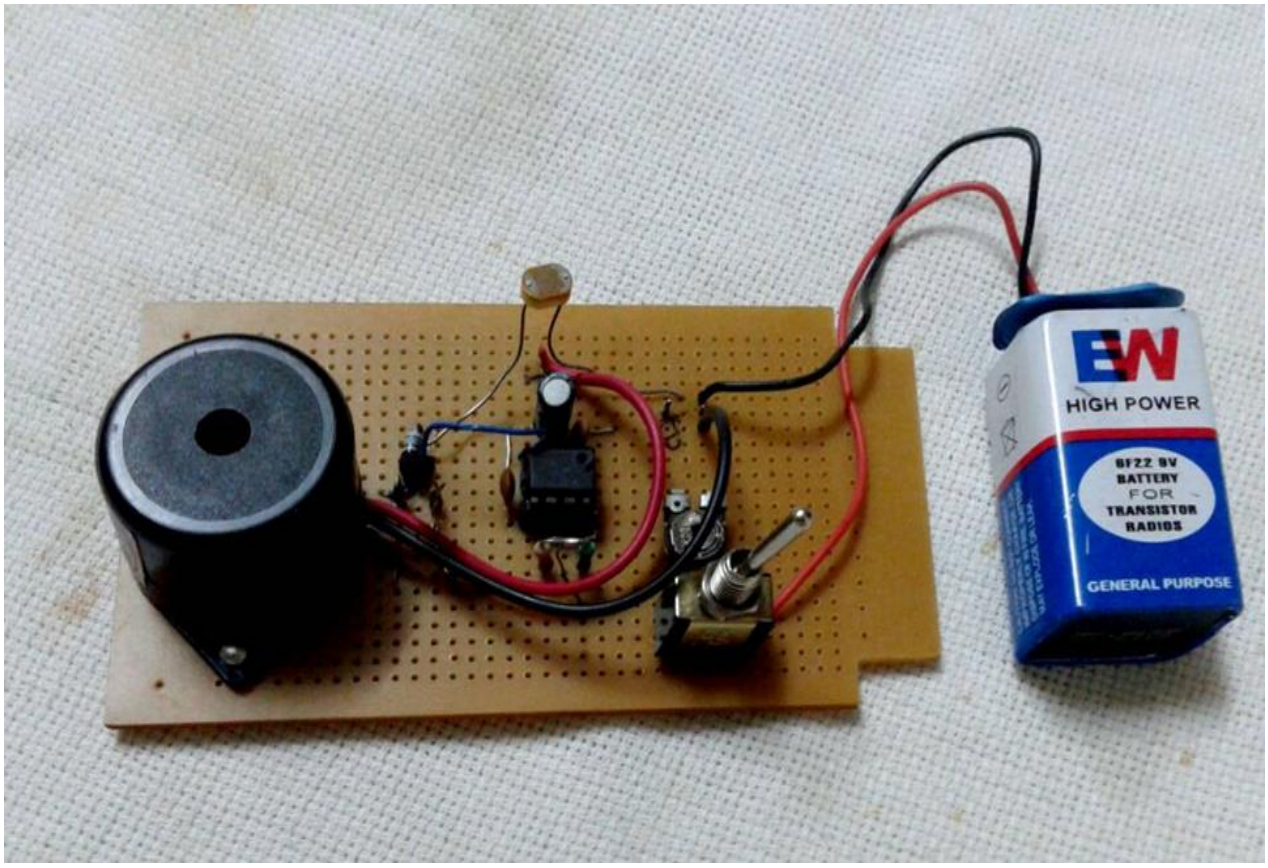


Fig:9 Resultant Output Of The Project

9.2 Advantages:

- Easy to install and work; both within as well as outside homes
- Very effective perimeter alarm systems around properties like parks, pools, garages or even driveways**.**
- Indoor systems utilize the normal power outlets and jacks making them inconspicuous.
- Outdoors, they can easily be hidden behind the bushes or plants without causing any harm.
- Consume less power, though the laser system on the whole is expensive.

9.3 Dis advantages:

- Laser security system requires resources to run,add complexity in IT environment and requires effort by those using the systems
- Laser is harmful to eyes, so do not look into the laser light and don’t direct it to the body. It should not be used in home if there are small children. Fix the laser diode and Photo resistor just above the ground level to prevent accidental looking into it.

9.4 Applications:

- Lasers and laser technologies are widely used in defense and security fields.
- used to protect valuable items, money, room etc.. By using different mirror arrangements.

10. CONCLUSION:

The most critical element to the laser security system is the ability to be absolutely invisible. Until any sort of powder, smoke, or a spec of dust enters the room. Then the laser will forever be shown to both the people trying to break in and fool the system and, most importantly, the audience. It's really convenient for the people breaking in that they don't need to bring 40 pounds of powder and have to keep applying it to the area to keep those streams visible.

The smallest amount of cloud formation will do as lasers are honest. They will say "ok, YA GOT ME!" and keep glowing well until the police/guerrillas/security force/soldiers for fortune show up to try and figure out how in the hell someone actually GOT PASSED OUR INTRICATE LASER SYSTEM! Because a laser system isn't a laser system if it doesn't inevitably not work and lead to hemming and hawing (the hemming and hawing also comes standard).

In the end, we made the laser security in low budget. It had been protect in full security. Laser security systems are a high tech technology that used to be a part of home security only available to the wealthy. It is manually switch dependent sensors and a basic alarm unit. Laser security system ,a person moves in front of the motion sensor, that person's body heat triggers the system's alarm. And the alarm signals the security monitoring company and local law enforcement. The basic alarm unit will also sound a loud alarm:

11.REFERENCE

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