INDIAN INSTITUTE OF INFORMATION TECHNOLOGY, MANIPUR

Department of Electronics & Communication Engineering

EC202:- Analog Circuits Lab

PROJECT REPORT

Title:- "TV JAMMER CIRCUIT"

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1. PURPOSE:-

This allows you to watch your own program without anyone changing the channel or volume and to keep away to children from TV because it gives negative effects on the studies of children .

2. ABSTRACT:-

This TV jammer circuit confuses the infrared receiver in a TV by producing the constant signal that interferes the remote control signal. If you switch on the circuit once, the TV will not receive any command from the remote.

3. CIRCUIT COMPONENTS:-

RESISTORS:-

- 10K VARIABLE RESISTOR
- 470 OHM
- 5R6 OHM
- 1K

- NE555 timer
- 1n4148 diodes -2
- 9V Battery
- Ceramic capacitor – 10nF
- BC547 Transistor – NPN
- IR – LED (TRANSMITTER)

4. CIRCUIT DIAGRAM:-

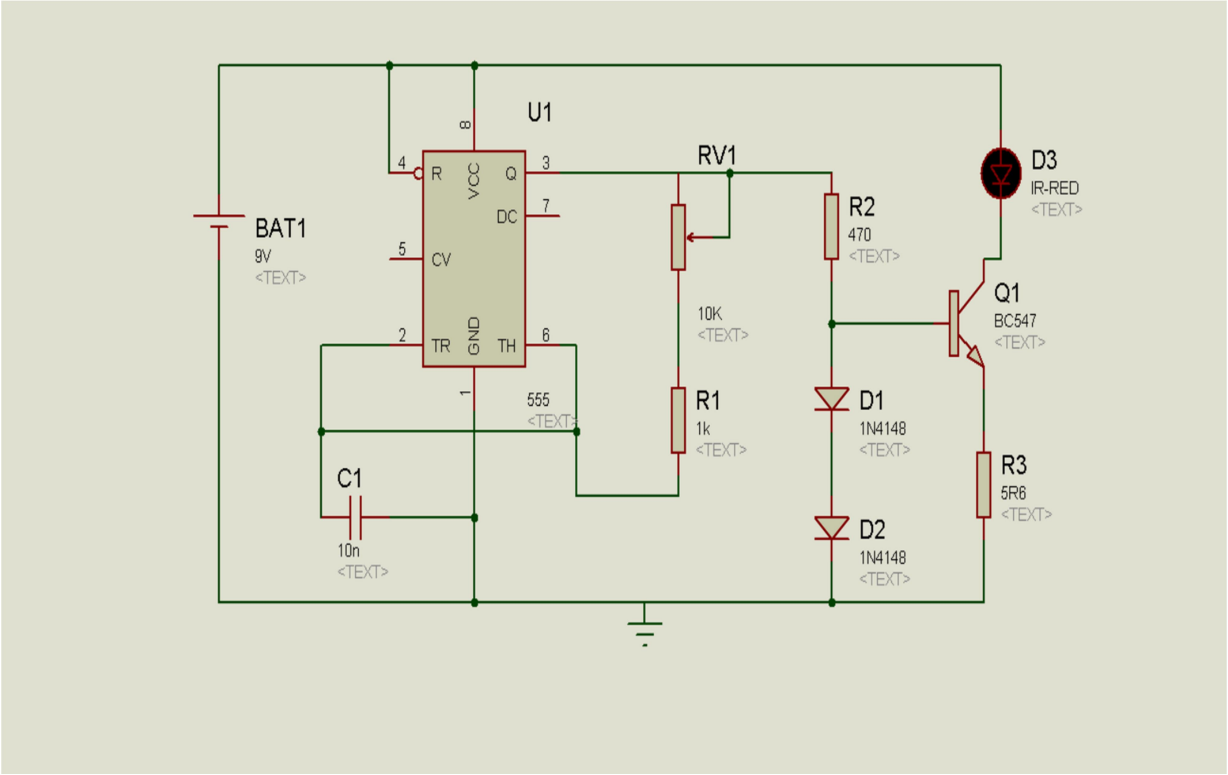


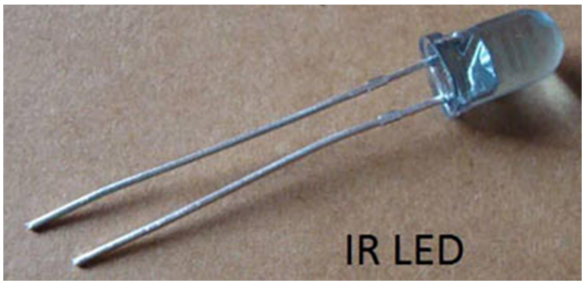
FIGURE:- TV JAMMER CIRCUIT ON PROTEUS 7

5. DESCRIPTION:-

5.1.1 IR TRANSMITTER:-

The IR transmitter consists of the LED that emits the IR (Infra Red) radiation.This is received by the photo diode, which acts as IR receiver at the receiving end. Since the IR radiation is invisible to

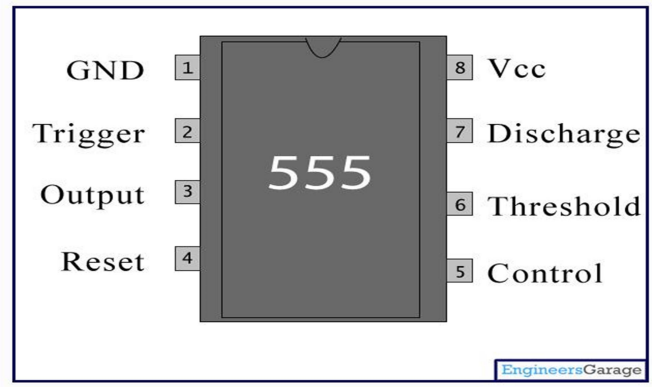
human eye it is perfect for using in wireless communication.



5.1.2 NE555 TIMER IC:-

IC 555 timer is a well-known component in the electronic components . a **fact about why 555 timer is called so**, the timer got its name from the three 5 kilo-ohm resistor in series employed in the internal circuit of the IC.

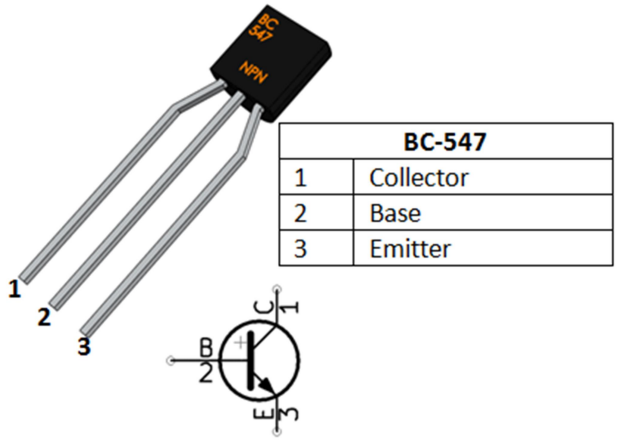
It works as square-wave form generator with duty cycle varying from 50% to 100%, Oscillator and can also provide time delay in circuits. A simplified diagram of the internal circuit is given below for better understanding as the full internal circuit consists of over more than 16 resistors, 20 transistors, 2 diodes, a flip-flop and many other circuit components.



5.1.3 BC547 TRANSISTOR:-

Bi-Polar NPN Transistor

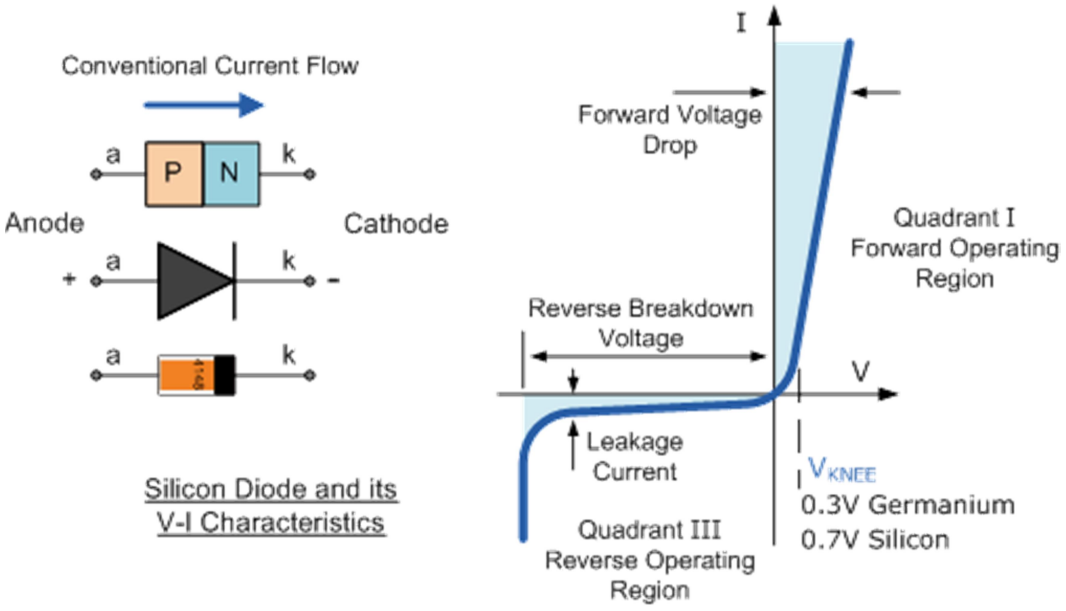
- DC Current Gain (h_{FE}) is 800 maximum
- Continuous Collector current (I_C) is 100mA
- Emitter Base Voltage (V_{BE}) is 6V
- Base Current(I_B) is 5mA maximum.



BC-547	
1	Collector
2	Base
3	Emitter

5.1.4 1N4148 DIODE:-

The **1N4148** is a standard silicon switching signal diode. It is one of the most popular and long-lived switching diodes because of its dependable specifications and low cost. The 1N4148 is useful in switching applications up to about 100 MHz with a reverse-recovery time of no more than 4 ns.



Silicon Diode and its V-I Characteristics

5.1.5 ceramic capacitor :-

A **ceramic capacitor** is a fixed-value capacitor in which ceramic material acts as the dielectric. It is constructed of two or more alternating layers of ceramic and a metal layer acting as the electrodes.

Ceramic capacitors of special shapes and styles are used as capacitors for RFI/EMI suppression, as feed-through capacitors and in larger dimensions as power capacitors for transmitters.

FIGURE:- CEREMIC CAPACITOR 10Nf

5.2 ***TV Remote Jammer Circuit Design:-***

The circuit is designed to produce a 38 KHz signal. The main component in this circuit is 555 Timer. Here, it is operated in astable multivibrator mode. In this circuit, 2nd and 6th pins are shorted to allow the triggering after every timing cycle and these two pins are grounded through the capacitor. 4th pin of 555 timer is connected to supply to avoid sudden resets.

10k pot is used to adjust the frequency of 555 timer. The current through the IR-LED is limited to 100mA because of two 1n4148 diodes, as these form constant current arrangement when combined with transistor and resistor.

5.3 ***How to Operate this TV Remote Control Jammer Circuit?***

- Connect 9v battery to the circuit.
- Now adjust the pot 10k to produce 38 KHz signal.
- Now press the TV remote buttons.
- You can observe that TV will not receive any commands from remote
- Disconnect the battery from circuit and press TV remote buttons.
- Now you can observe that TV will receive the commands from Remote.

5.4 ***TV Remote Jammer Circuit working:-***

The idea behind TV remote control jammer is sending a constant IR pulse with the carrier frequency of the transmitter. Hence the result

will be non-accepted signal from the receiver and therefore no action will be taken.

Basically the TV remote emits a sequence of pulses when you press a button. IR transmitter is fixed to the surface of the TV remote. This IR transmitter emits the pulses in unique configuration for each button. IR receiver which is arranged to TV will receive these sequence of pulses that are transmitted by TV Remote and identifies which button is pressed in TV remote. When we get 1.5 volt to 1.8 volt maximum across IR LED in forward region and 5 volt maximum in reverse region .it emits 38 KHz frequency . and incourrupt the singal between remote and tv.

5.5 *TV Remote Control Jammer Circuit Advantages:-*

We can use this circuit to jam the remote signals so that :

- Keep away from Negatively effects on the studies of the children.
- Save the time wasting time to watch the tv programs.
- Mind of childrean does not distract.
- the other people cannot change the channel while watching our favorite program on TV.
- It will not affect the signal receiving capacity of the TV.

5.6 Limitations of the Circuit:

The circuit should be tuned correctly to 38 KHz frequency to get accurate results.

5.7 CONCLUSION of the Circuit:-

We get 1.5 volt across IR led which is operating voltage in Forward region that IR LED transmites the signal of 38 kHZ and jam the TV remote signal.

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