

Clap Switch

ABSTRACT

Clap switch is easy to use utility that can help disabled persons or kids to safely turn device 'on' or 'off' using simple circuit.

This includes passive components and battery that powers the circuit with relay that isolate low voltage and high voltage circuit

Working

Consider the above circuit into 2 parts, the job of the left part of this circuit is to give the low signal to the right part, which has 555 timer.

all we have to do is to provide a low signal to the 555s TRIGGER pin (pin 2) to switch on the light for a desired time.

When we power up the circuit, the current will flow from source to the (+ve) mic and leaves at (-ve). Due to the low resistance of the mic the sufficient amount of current will flow to the base of T1. That current helps the T1 to turn on.

Due to this, the voltage across the collector-emitter of T1 is zero. So that no voltage across base-emitter of T2 that is the reason why the T2 is in off state by default.

When T2 is turned off the voltage across collector-emitter of T2 was almost equal to the source voltage. As discussed before trigger requires low signal to on the 555.

When the sound was detected by the mic the resistance of the mic will become high. Due to this, there is no current flow to the base of T1 which makes the T1 to turn OFF.

Due to this, the voltage across the collector-emitter of T1 was high, this makes the T2 to turn ON.

Once the T2 was in ON, the voltage across collector-emitter of T2 will be low. This LOW was sensed by the trigger pin (pin 2), which makes the 555 to produce the monostable output.

Components

- 1-mic
- 1k
- 4.7k
- BC547 X2
- 470R
- 0.1uf X2
- 47k
- 100uf
- 330R
- 555 timers
- led
- 9v battery

Circuit Diagram

