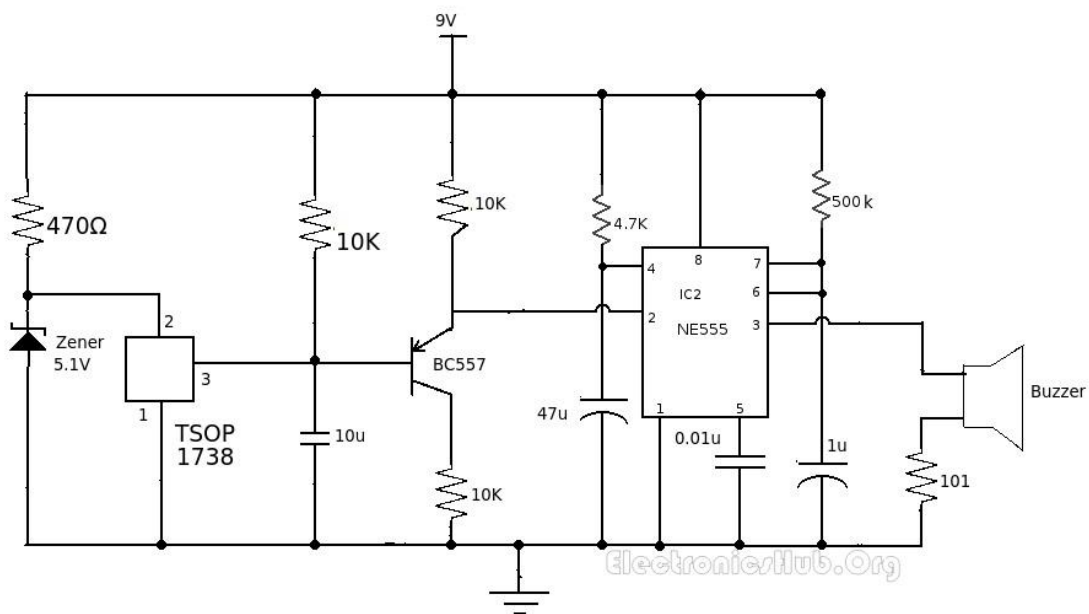


Remote Operated Alarm Circuit

This circuit rings an alarm when you point a TV remote at it and press on any button. This can be used as a calling bell to call your assistant. This circuit can have more applications than those mentioned here. You can use it for many other applications depending on your creativity and necessity.

Remote Controlled Alarm Circuit Diagram:



Description:

TSOP 1738 infrared photo sensing module is used to sense the IR rays with about 38KHz of frequency. This module helps us to reduce interference from other natural IR signals from the environment. This does not take continuous IR rays. IT filters out all other IR rays and takes only the IR rays with 38 KHz as an input. This avoids interference from sun rays, hot objects emitting IR rays, etc. Pin-1 of TSOP 1738 is given to ground, pin-2 is given the input signal and pin 3 is where we get the output from.

The output from the TSOP sensor is given to the general purpose PNP transistor BC557. The output of the transistor is given to the input of IC 555 timer. The IC 555 timer is arranged in the monostable mode. In this mode, the circuit stays in ON mode for a short time after it receives the input triggering. The 555 ic in the monostable mode gets triggered by the preceding circuit when the TSOP sensor receives a valid IR signal. By valid IR signal, we mean the IR signal with 38KHz frequency. The TSOP filters all other frequencies and thereby reducing interference to a great extent as described earlier.

Most television remotes are equipped with IR transmitters which emit IR rays at a frequency of 38 KHz. So, by using such TV remotes, we can trigger the circuit. When the circuit is triggered, it turns ON the buzzer which is at the output.

The TSOP sensor should be powered by a voltage of 5V for proper operation. That is why we are using a zener diode of 5.1 volt. The zener diode is connected in reverse bias. In this mode, it is used as a voltage regulator. In this mode, the zener diode maintains the voltage at 5.1V even if there is any change in the current passing through it. Although it may not be an ideal voltage regulator, it is one of the simplest, cost effective and easy to use voltage regulators due to which we have chosen it for using in our circuit.

The capacitor which is used at pin 5 of the IC 555 is an optional component. It actually is used in general to avoid noise but in this case, we do not think it has much prominence. It is not wrong to use it here but it is not mandatory too. However, if you have a spare capacitor of that value, you can use it.

This circuit is powered using a 9V power supply. You can either use a direct current battery power supply using a PP3 battery or else, you may use a DC adapter with 9V output for this purpose depending on your availability.

Source: <http://www.electronicshub.org/remote-operated-alarm-circuit/>