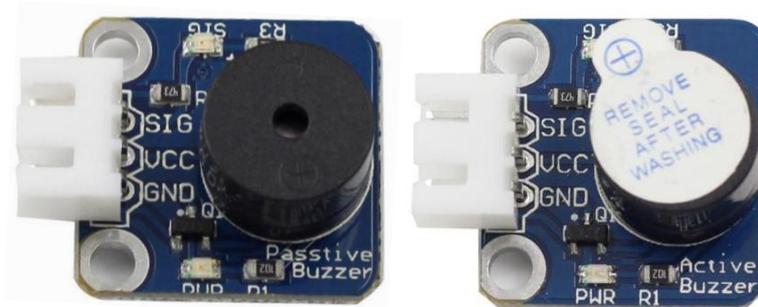


# Buzzer

## Introduction

A buzzer is an audio signaling device. Buzzers can be categorized into active and passive ones (see as below).



## Components

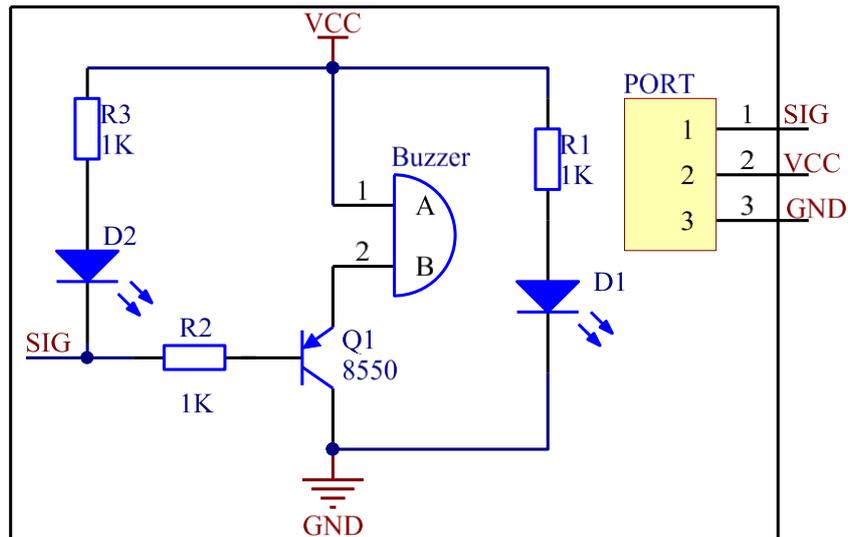
- 1 \* SunFounder Uno board
- 1 \* USB data cable
- 1 \* Active buzzer
- 1 \* Passive buzzer
- 2 \* 3-Pin anti-reverse cable

## Experimental Principle

Place the pins of two buzzers face up and you can see the one with a green circuit board is a passive buzzer, while the other with a black tape, instead of a board, is an active buzzer, as shown below.

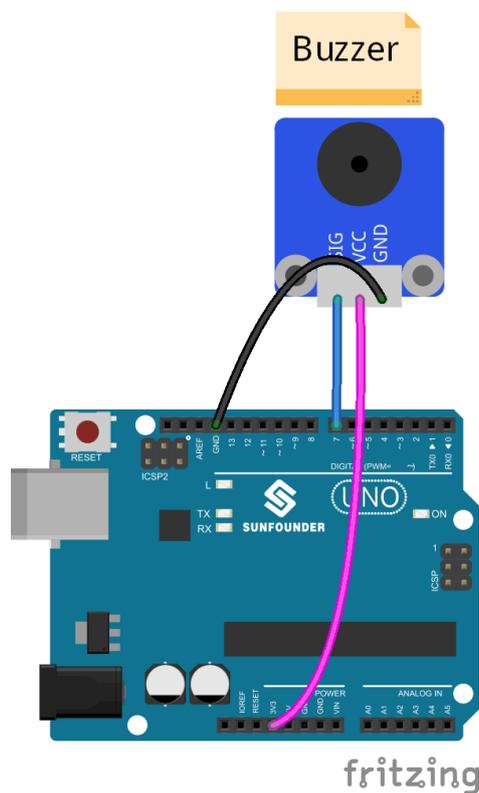


An active buzzer has a built-in oscillating source, so it will make sounds when electrified. But a passive buzzer does not have such source, so it will not beep if DC signals are used; instead, you need to use square waves whose frequency is between 2K and 5K to drive it. The active buzzer is often more expensive than the passive one because of multiple built-in oscillating circuits.



## Experimental Procedures

**Step 1:** Build the circuit



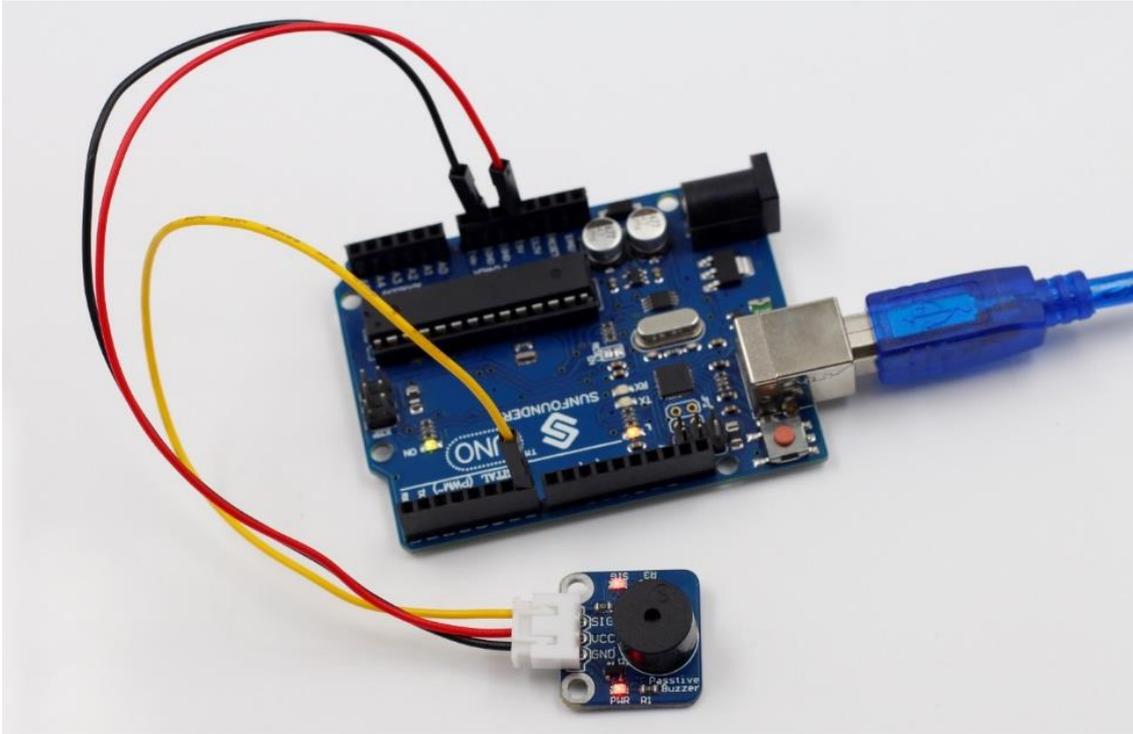
### Passive Buzzer

**Step 2:** Program (see the file *Passive.ino* under *Lesson 21 Buzzer/code/Passive* in the package downloaded from the page through [LEARN -> Get Tutorial -> Sensor Kit](#) on our website)

**Step 3:** Compile

**Step 4:** Upload the sketch to SunFounder Uno board

Now, you can hear the passive buzzer beeping. It also works in the same way if you use an active one here.



## Active Buzzer

**Note:** The active buzzer has a built-in oscillating source, so it will beep as long as it is wired up.

**Step 2:** Program (see the file *Active.ino* under *Lesson 21 Buzzer/code/Active* in the packaged downloaded)

**Step 3:** Compile

**Step 4:** Upload the sketch to SunFounder Uno board

Now, you can hear the active buzzer beeping. But it won't work if you use a passive one here.

