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Active Buzzer 3-24V cw Wire

Introduction

An active buzzer will generate a tone using an internal oscillator, so all that is needed is a DC voltage. A passive buzzer requires an AC signal to make a sound. It is like an electromagnetic speaker, where a changing input signal produces the sound, rather than producing a tone automatically.

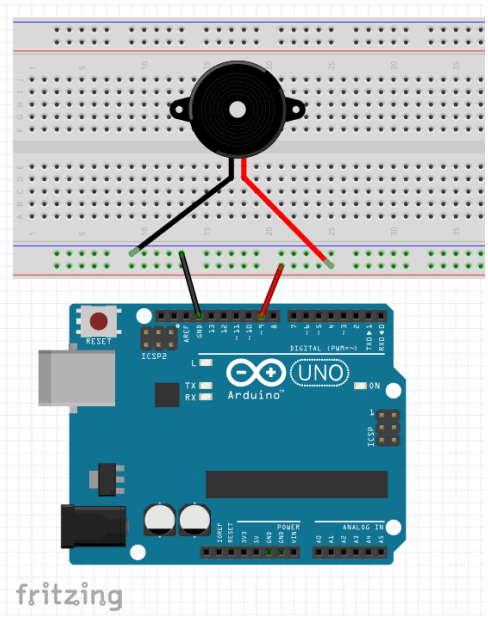
To identify them, if you apply a DC voltage to them and it buzzes, it's an active. As far as commands go if you want to control the pitch, you would need a passive buzzer. PWM on the Arduino can be used to control the pitch and the volume at the same time (which may or may not be what you want). If you wanted to change just volume or just pitch I suppose some external circuitry would be required to change the amplitude without changing the voltage, and vice versa.

In this lesson, you will learn how to make sounds with your Arduino. You will make the Arduino play a 'musical' scale and then combine this with a photocell, to make a Theremin-like instrument that changes the pitch played as you wave your hand over the photocell.

Specification

- Buzzer 3 - 24V with wire
- Diameter: 2.2cm

Image Set Up Diagram



Packing List

- Active buzzer 3-24V with wire
- Half-size Breadboard
- Arduino Uno R3
- Jumper wire

Pin Assignment

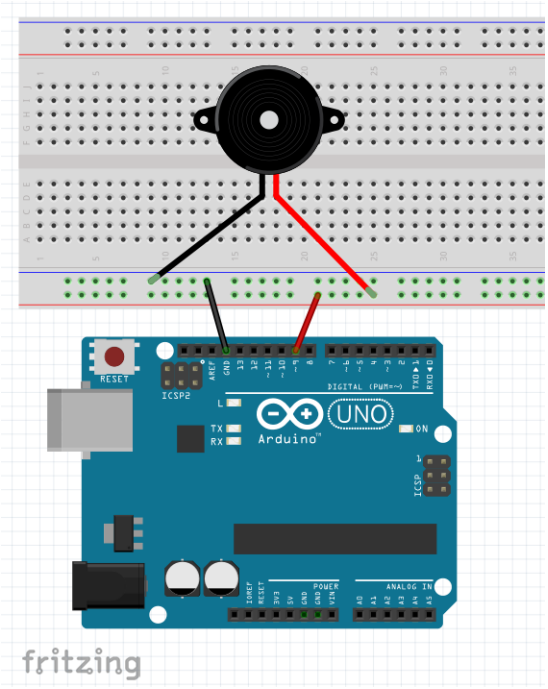
There are only 2 pins used to interface active buzzer.

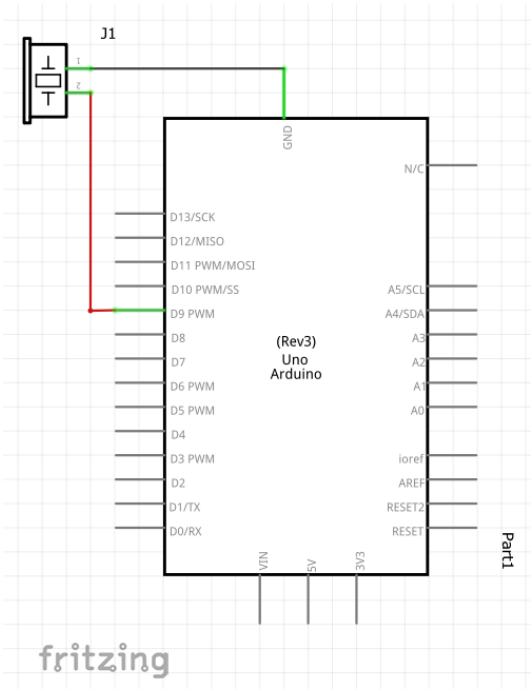
1. One pin of the piezo sounder goes to GND connection
2. The other to digital pin 9.

Pin Connection of Active Buzzer
Playing a 'HAPPY BIRTHDAY'

- For the part of this lesson, the only thing on the breadboard is the Active buzzer. One pin of the active buzzer sounder goes to GND connection and the other to digital pin 9.

- Then upload the code to your arduino.





Example Code

1. This is example code playing a “happy birthday” for active buzzer.

```
int speakerPin = 9;

int length = 28; // the number of notes

char notes[] = "GGAGcB GGAGdc GGxecBA yyecdc";

int beats[] = { 2, 2, 8, 8, 8, 16, 1, 2, 2, 8, 8,8, 16, 1, 2,2,8,8,8,8,16, 1,2,2,8,8,8,16 };

int tempo = 150;

void playTone(int tone, int duration) {

for (long i = 0; i < duration * 1000L; i += tone * 2) {

  digitalWrite(speakerPin, HIGH);

  delayMicroseconds(tone);

  digitalWrite(speakerPin, LOW);

  delayMicroseconds(tone);

}

}

void playNote(char note, int duration) {

char names[] = {'C', 'D', 'E', 'F', 'G', 'A', 'B',

            'c', 'd', 'e', 'f', 'g', 'a', 'b',

            'x', 'y' };

int tones[] = { 1915, 1700, 1519, 1432, 1275, 1136, 1014,

            956,  834,  765,  593,  468,  346,  224,

            655 , 715 };

int SPEE = 5;
```

```
// play the tone corresponding to the note name

for (int i = 0; i < 17; i++) {

  if (names[i] == note) {
   int newduration = duration/SPEE;
    playTone(tones[i], newduration);

  }

}

}

void setup() {

pinMode(speakerPin, OUTPUT);

}

void loop() {

for (int i = 0; i < length; i++) {

  if (notes[i] == ' ') {

    delay(beats[i] * tempo); // rest

  } else {

    playNote(notes[i], beats[i] * tempo);

  }

  // pause between notes

  delay(tempo);

}

}
```

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Applications

1. Song
2. Play tune
3. Pitch played