



## SparkFun gator:microphone - micro:bit Accessory Board

SEN-15289

The SparkFun gator:microphone is a micro:bit Accessory Board that integrates an electret microphone into SparkFun's gator:bit series of gator-clippable accessories, enabling it to be easily interfaced with the micro:bit or other microcontrollers! It provides a binary indication of the presence of sound and an analog representation of its amplitude.

The gator:microphone consists of four pads for power and data. There is also a switch on the board to select different audio amplification levels. Additionally, it includes an LMV324 operational amplifier (op-amp) for processing the audio signals from the microphone. The specified operating voltage for the VEML6070 is between 2.7V-5.5V. For use with the gator:bit (v2) and micro:bit, you should provide 3.3V through the 3V3 and GND pads to keep the logic levels consistent.

*The micro:bit is a pocket-sized computer that lets you get creative with digital technology. Between the micro:bit and our shield-like bit boards you can do almost anything while coding, customizing and controlling your micro:bit from almost anywhere! You can use your micro:bit for all sorts of unique creations, from robots to musical instruments and more. At half the size of a credit card, this versatile board has vast potential!*

## • FEATURES

- gator:bit Compatible
- ADS1015
  - Operating Voltage ( $V_{DD}$ ): 2.0V-5.5V
  - Operating Temperature: -40°C to 125°C
  - Operation Modes: Single-Shot, Continuous-Conversion (Default), and Duty Cycling
  - Analog Inputs:
    - Measurement Type: Single-Ended (Default)
    - Input Voltage Range: GND to  $V_{DD}$
    - Full Scale Range (FSR):  $\pm 256V$  to  $\pm 6.114V$  (Default: 2.048V)
  - Resolution:
    - 12-bit (Differential) or 11-bit (Single-Ended)
    - LSB size: 0.125mV - 3mV (Default: 1 mV)
  - Sample Rate: 128 Hz to 3.3 kHz (Default: 1600SPS)
  - Current Consumption (Typical): 150 $\mu$ A-200 $\mu$ A
  - I<sup>2</sup>C Address: 0x48
- Electret Microphone
  - Operating Voltage: 1.5V (Max 10V)
  - Supply Current: 0.3mA (Max)
  - Directivity: Omnidirectional
  - Frequency Response: 20-16,000Hz
- LMV324 Op-amp
  - Operating Voltage: 2.7V-5.5V
  - Supply Current: ~300-720 $\mu$ A



<https://www.sparkfun.com/products/15289/6-24-19>