

# BuzziT! KIT A02 2008

## Introduction

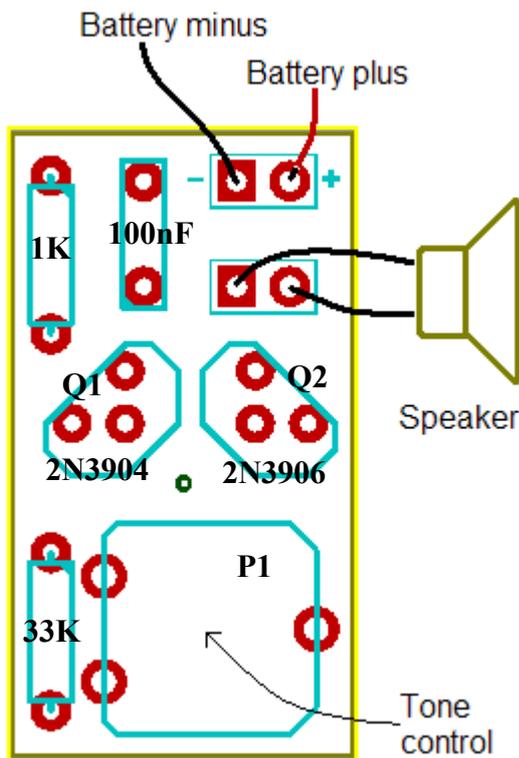
This is a simple buzzer circuit that is fun, easy to build and has good output power. The tone of the emitted sound can be set with a screwdriver.

**IMPORTANT:** You are the sole responsible for the assembly, so, be sure you feel you can assemble this KIT. We only provide you the components. If you don't have any prior experience assembling electronics circuits, ask for a experienced friend's help or practice soldering and de-soldering components in a piece of old PCB before attempting to assemble the KIT.

## Connections

A battery support is recommended, for example for 2 or 3 AA batteries. Solder the battery support wires directly to the board. Pay attention to the polarity, battery plus (usually a red wire on the battery support) goes on the plus board input, battery minus (usually a black wire on the battery support) goes on the minus board input.

Use a speaker with 8Ω to 64Ω impedance and 250mW or higher power when operating at 3V or below, 1W or more when operating at higher than 3V. The speaker wires can be connected in any position, no polarity needs to be respected.



## Components

R1 – Resistor, 33K 1/4W 5% tolerance (colors: **Orange, Orange, Orange, Gold**)

R2 – Resistor, 1K 1/4W 5% tolerance (colors: **Brown, Black, Red, Gold**)

C1 – Capacitor, 100nF

Q1 – Transistor, NPN, 2N3904 (“2N3904” is written on it)

Q2 – Transistor, PNP, 2N3906 (“2N3906” is written on it)

P1 – Variable resistor, 1M

## Datasheet

Supply voltage: 2.5V to 6V

Frequency range: approx. 18 Hz to 500 Hz

Peak output power (on 8Ω speaker, at 500Hz): approx. 0.69W at 3V, 2.88W at 6V

## General Assembly Hints

Active components (transistors, diodes, integrated circuits) are more sensitive to heat than passive components (resistors, capacitors, variable resistors, terminals, jumpers) and therefore should be soldered last.

Use the following order when assembling the board:

1. Wires, jumpers, terminals and connectors
2. Integrated circuit supports
3. Resistors
4. Capacitors
5. Variable resistors and variable capacitors
6. Active components

Resistors, and capacitors without “+” nor “-” marks, have no special mounting orientation. They can be mounted in either both ways. The PCB (*Printed Circuit Board*, also known as “*the board*”) drawings will help you set the correct orientation for devices like transistors and integrated circuits.

Do **not** allow the soldering wire to stay in contact with a component or PCB for more than 5 or 6 seconds. If in one attempt you were not able to perform the soldering in this amount of time, stop and let the component and PCB cool down; and then try again. If you keep the soldering iron on the components for more than the recommended amount of time you will degrade or completely ruin the component and/or the PCB.

Cut the excess wire from the soldered components before putting the device into use.

## Circuit Schematics

