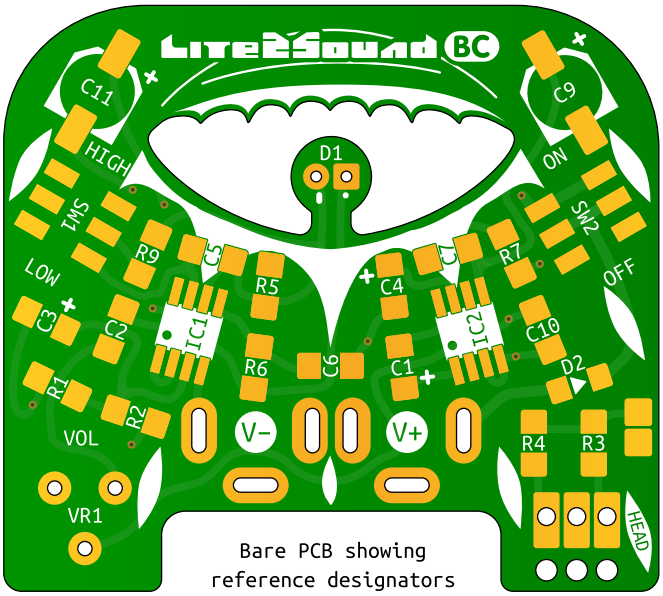
BOLDPORT CLUB

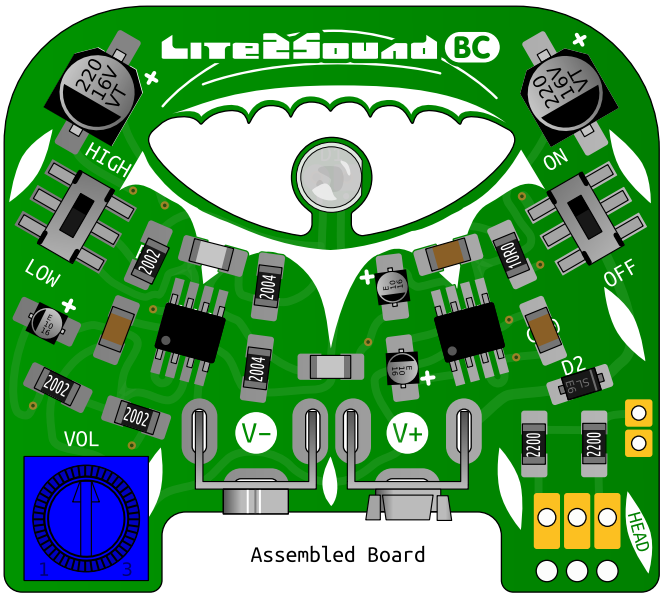
Lite2Sound BC

Assembly Guide

In collaboration with Rare Waves LLC
rarewaves.net



Bare PCB showing reference designators



Assembled Board

220pF Ceramic Capacitor
C5, C6

100nF Ceramic Capacitor
C2, C7, C10

10Ω Resistor
R7

220Ω Resistor
R3, R4

20KΩ Resistor
R1, R2, R9

2MΩ Resistor
R5, R6

1N5819 Schottkey diode
D2

TL072 Op-Amp
IC1

LM386 Power Amplifier
IC2

Two package types

Same orientation

220µF Electrolytic Cap
C9, C11

10µF Electrolytic Cap
C1, C4, C3

QSD2030 photo-diode
D1

Short leg

This board is designed to be hand soldered, it has larger pads to make it easier to fit a soldering iron in. To assemble, it is best to solder the components on from smallest to largest. This means starting from the small chip components which are the capacitors and the resistors then move on to the larger capacitors, switches, diodes and ICs. Then finally ending with the larger through-hole mechanical parts such as the battery contacts and the rotary potentiometer. The list of components are ordered this way to help. To solder it is advised to put a small solder blob on one pad then place the component with tweezers tacking it in place on that pad with the soldering iron. There are many videos available on-line showing this method also look at our Youtube channel to see a live build of this board.

Observe that D2 is polarised and has a subtle line on it showing its direction. This marking is very tiny you might need a very strong light or magnifying glass! The line should be on the point of the triangle marking of the silkscreen. D1 is also polarised, the dot on the PCB footprint means the shorter leg of the diode and the line the long leg. The silver can capacitors are polarized too, this is marked by the black semi circle denoting the negative side. The board silkscreen has a + for the opposite positive side.

With the TL072 IC the dot marking is for pin 1 as drawn on the silkscreen. But watch out some LM386 supplied have no dot, instead one side has a subtle beveled edge to mark the side with pin 1, also note and easier way to tell is the text is orientated so pin 1 is at the bottom.

Once complete see next assembly page regarding mounting of headphone and tin.

DPDT switch
SW1, SW2

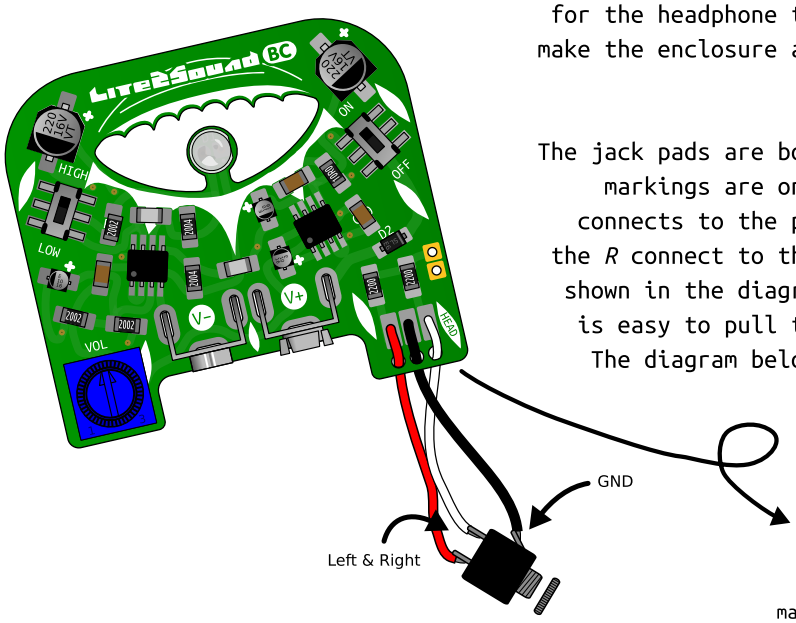
PP3 Battery Contacts

V- V+

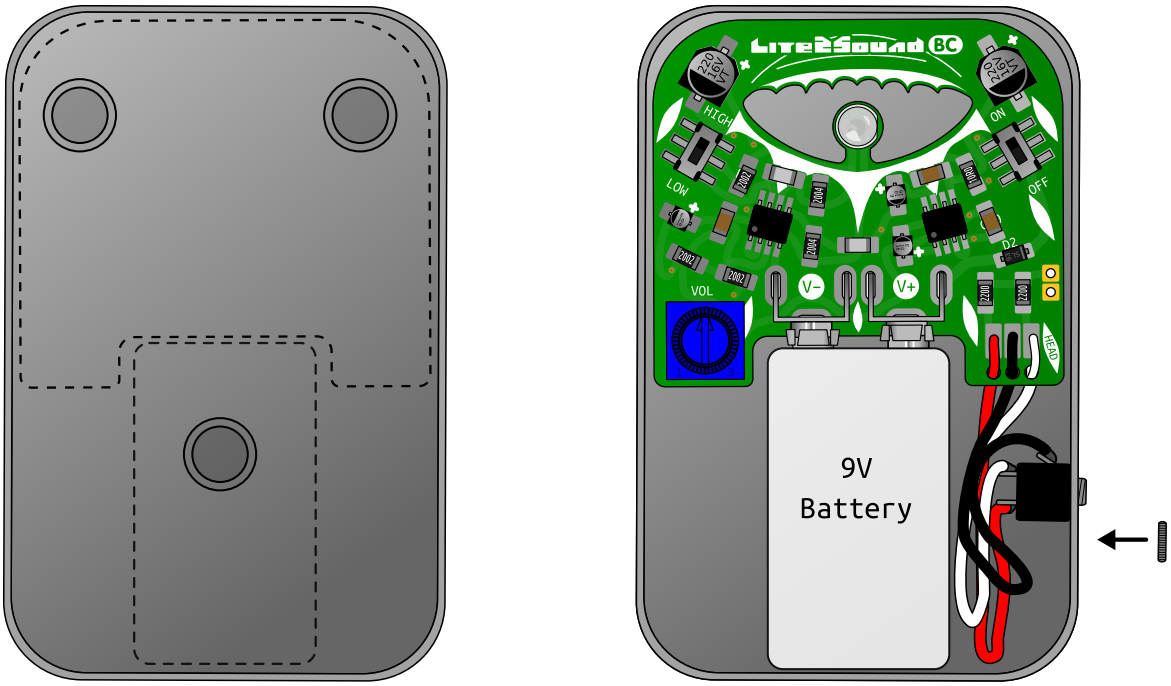
Finger trimmer 50ΩK
VR1

The headphone jack is an off-board component, this is because it mounts directly onto the enclosure. It allows for the headphone to be connected externally and to help make the enclosure a shield because there is a connection between *-V* and the jack nut.

The jack pads are bottom right of the PCB, its connection markings are on the underneath silkscreen. The – pad connects to the pin on the side of the jack. The *L* and the *R* connect to the two tags on the back of the jack as shown in the diagram. Use wires 10-20cm in length so it is easy to pull the PCB out for replacing the battery. The diagram below shows how to mount the board to the enclosure.



markings shown underneath



The tin is metal so it is possible to make shorts between pads. Most components are top surface mounted so do not interfere. But the battery, potentiometer and jack connection are through hole so have solder joints sticking out underneath. Supplied are three rubber feet to prevent these pads from touching the tin.

The best arrangement is shown above it keeps the lower side of the board safely away from the tin. Once the feet are in place put in the board and screw in the jack nut, make sure it is tightened properly.