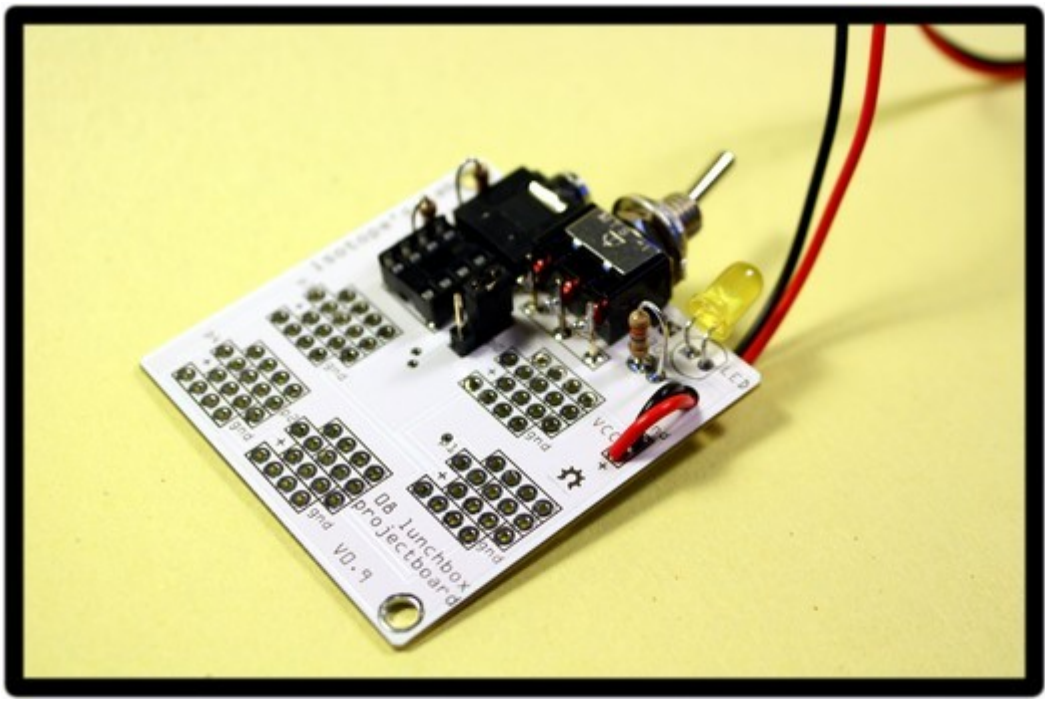
isotope's lab

08 Lunchbox project board V0.9 manual



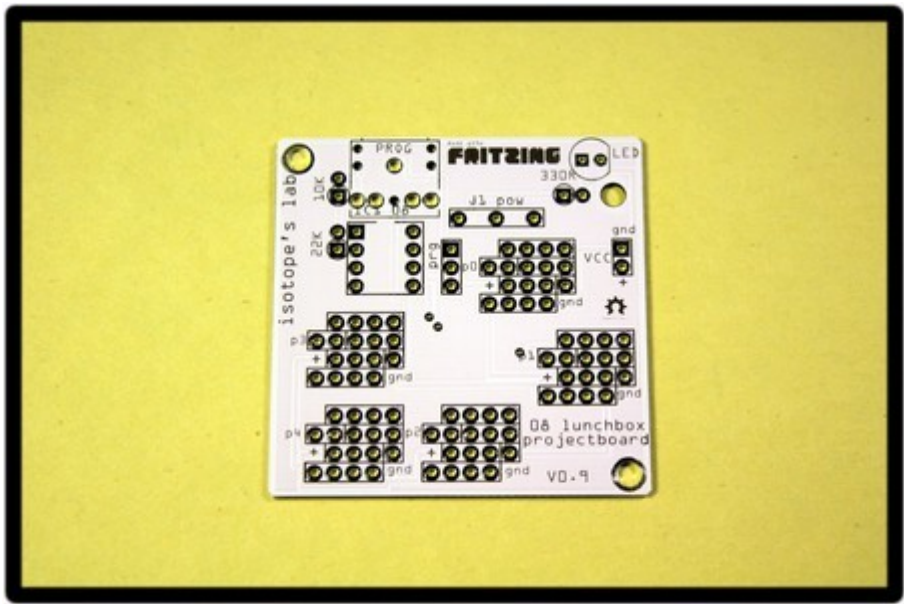
DRAFT

Purpose

This PCB was developed as a project board for 08 series of Picaxe microcontrollers. The board has following main features:

- Programming jack, SPDT switch and a “ON” LED indicator.
- Easily mountable into a “lunchbox” style enclosure.
- Easy interfacing for most frequently used sensors and output devices.

The board was concieved as pretty much all-in-one project board for 08 small projects.

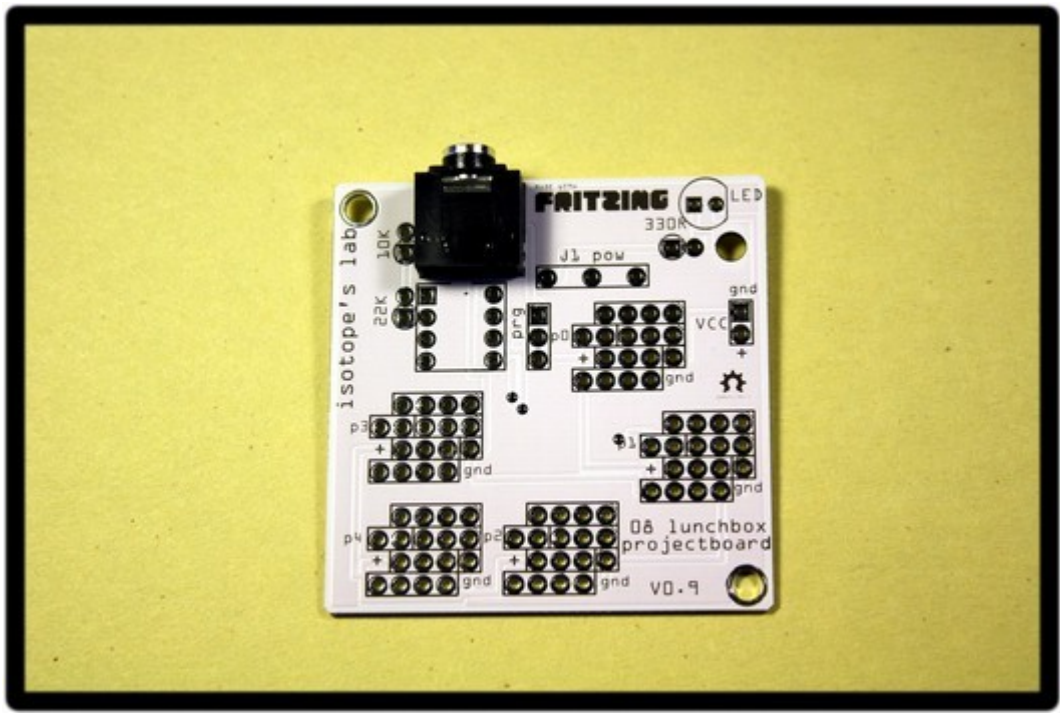


Bill of Materials

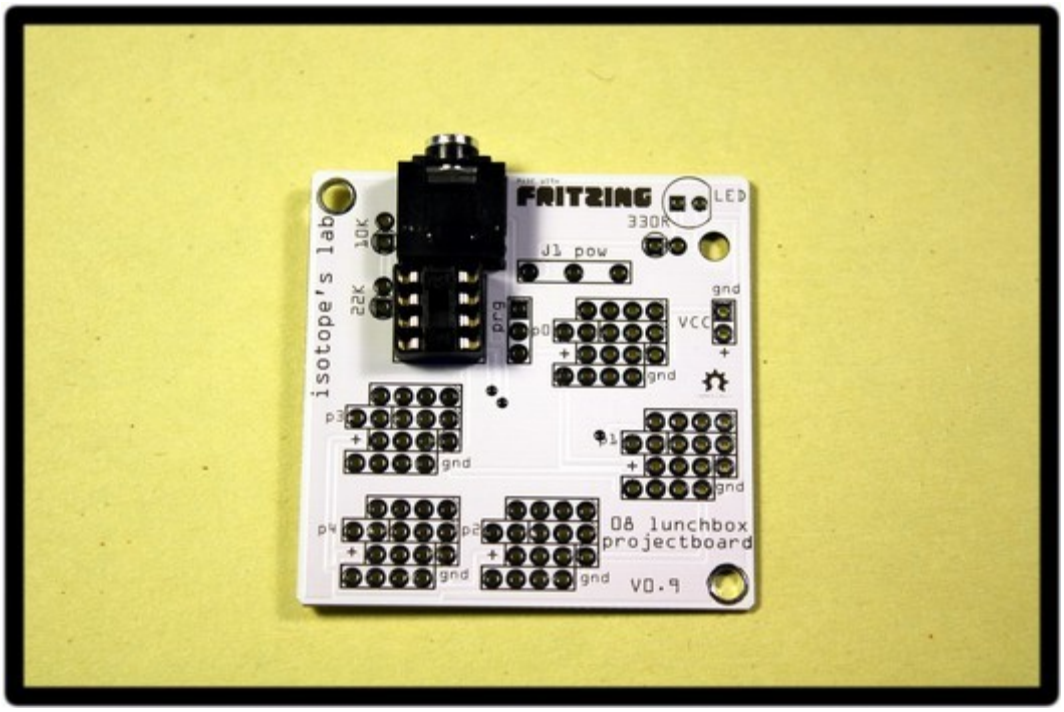
- 08 lunchbox project board v0.9
- R1 22k resistor
- R2 10k resistor
- R3 330r resistor
- TRS1 PROG stereo download socket
- 8 pin DIP socket
- S2 PRG 3 pin header (0.1” spacing) and jumper link
- J1 POW 3 x 1 pin header (0.1” spacing)
- 5mm LED
- SPDT toggle switch
- 3D printed hole gauge/template

Board Assembly

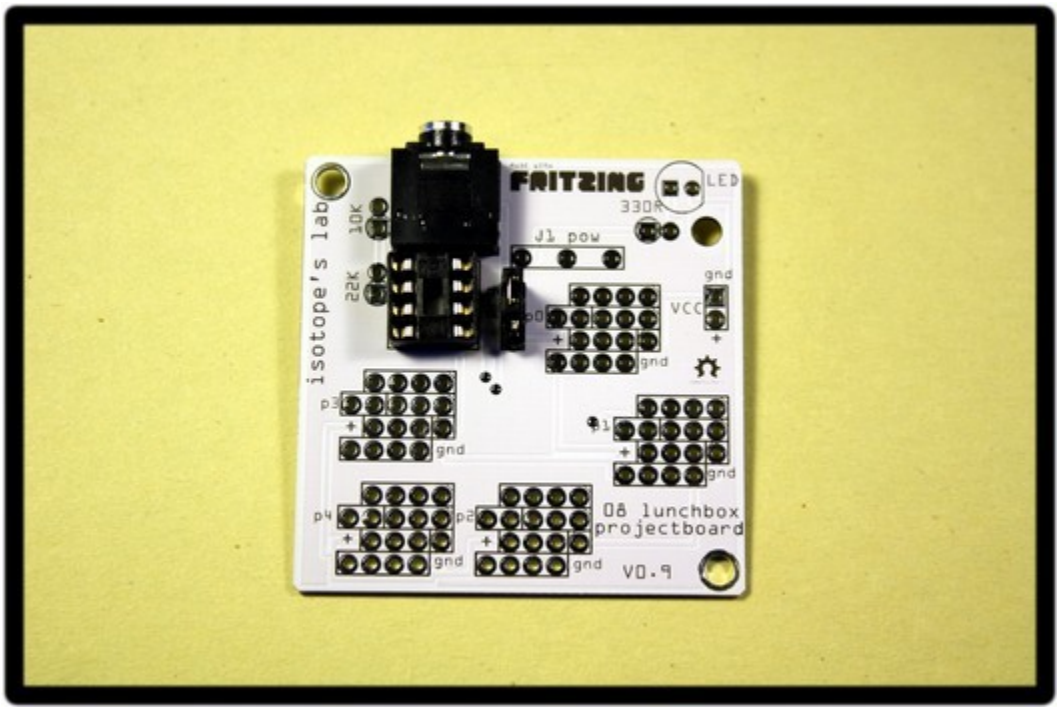
1. Start with soldering into place the download socket



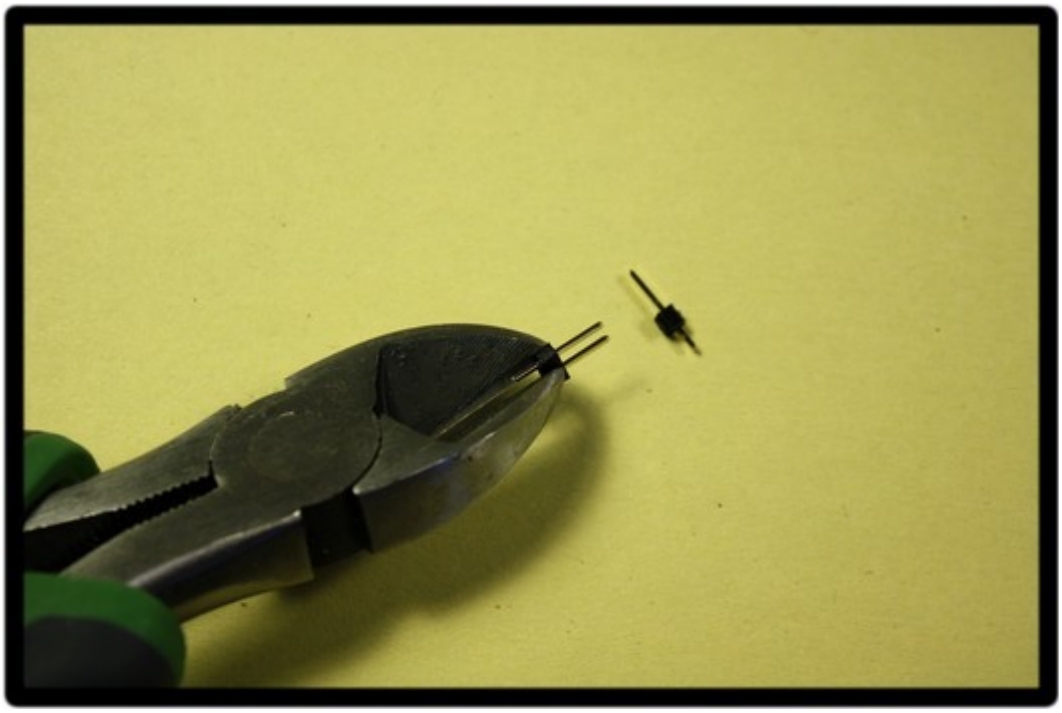
2. Continue with soldering an 8 pin DIP socket in place. Be sure of the top/bottom alignment (top mark)



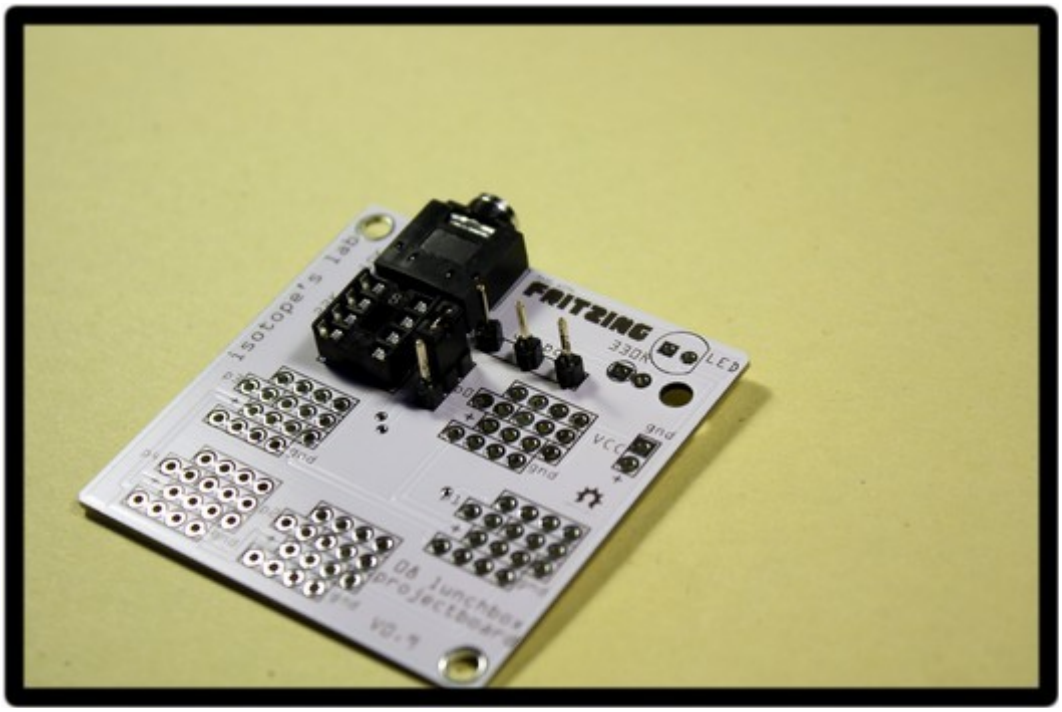
3. Solder prg/pin header



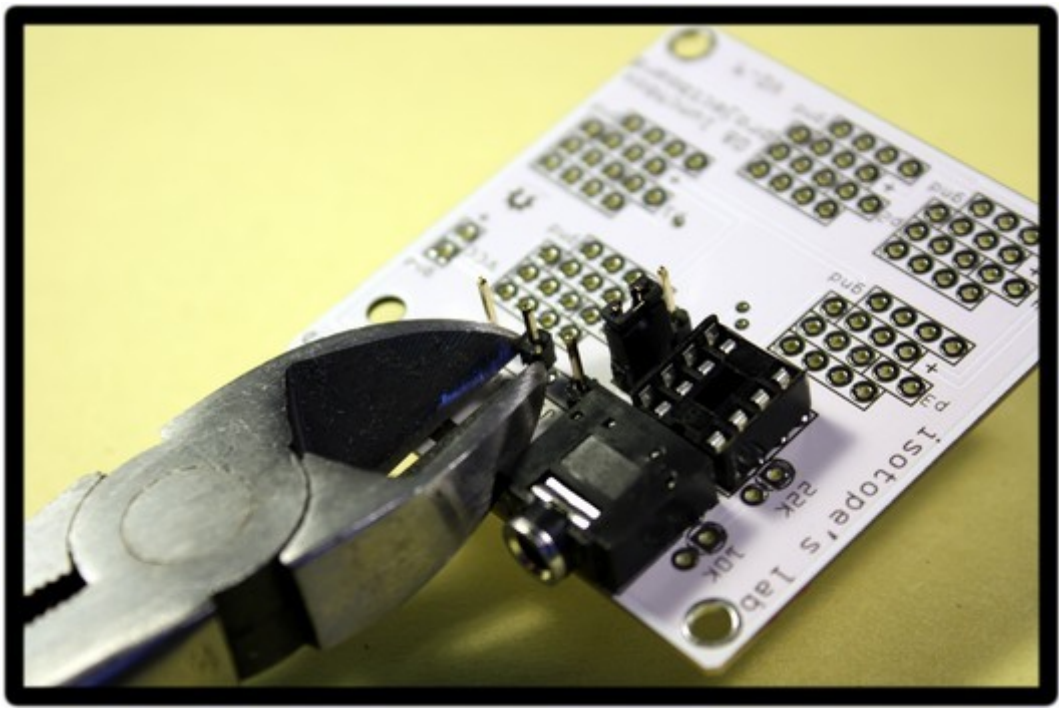
4. Cut 3 single pins for power switch



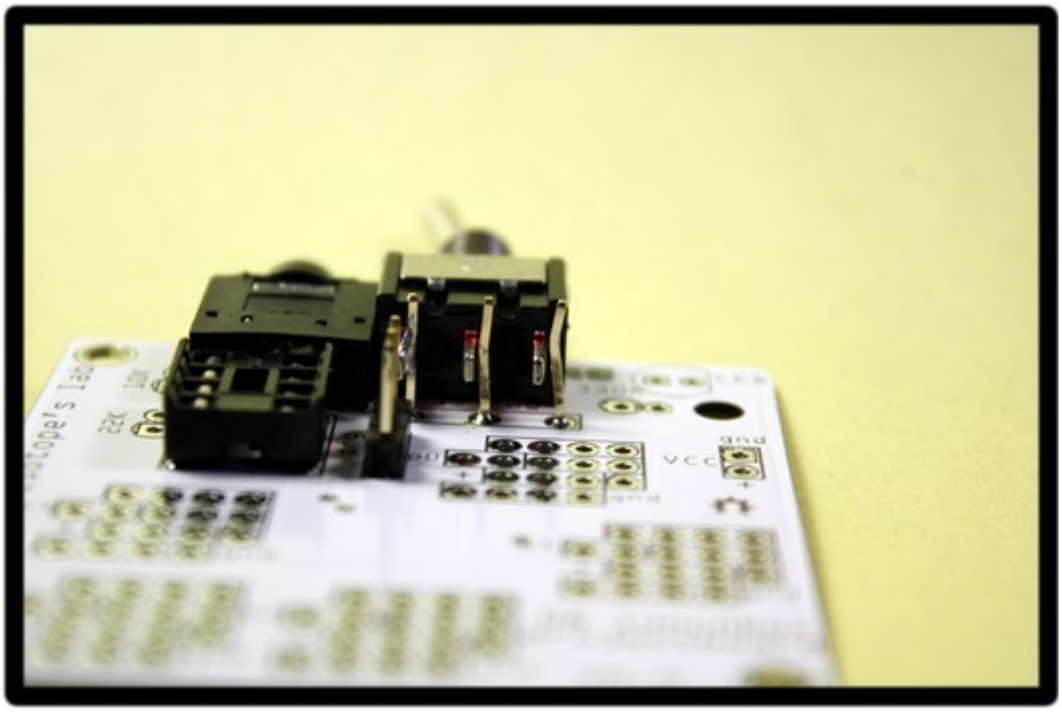
5. Solder 3 power switch pins into the board



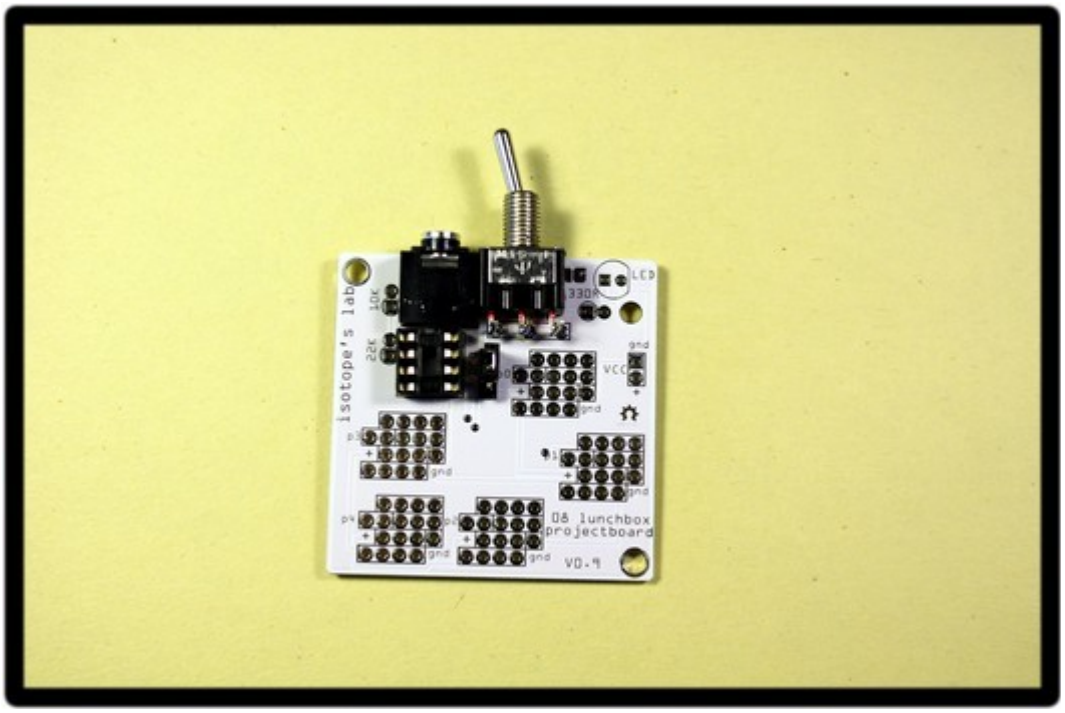
6. Remove plastic spacers form power switch pins.



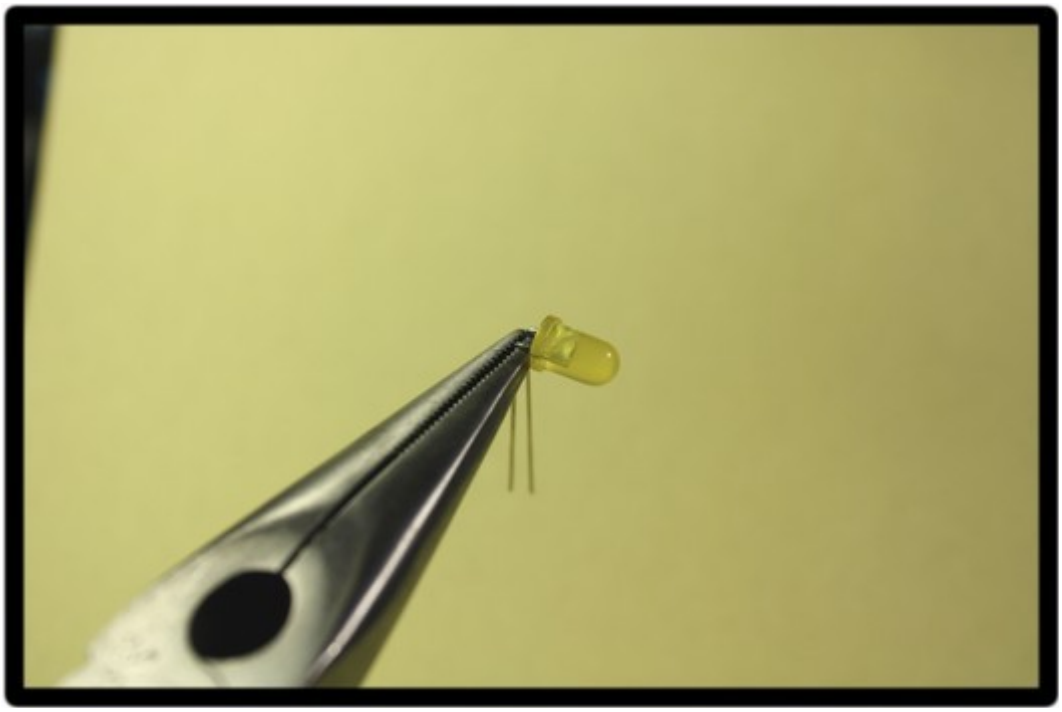
7. Bend power switch pins as neccessary and solder switch in



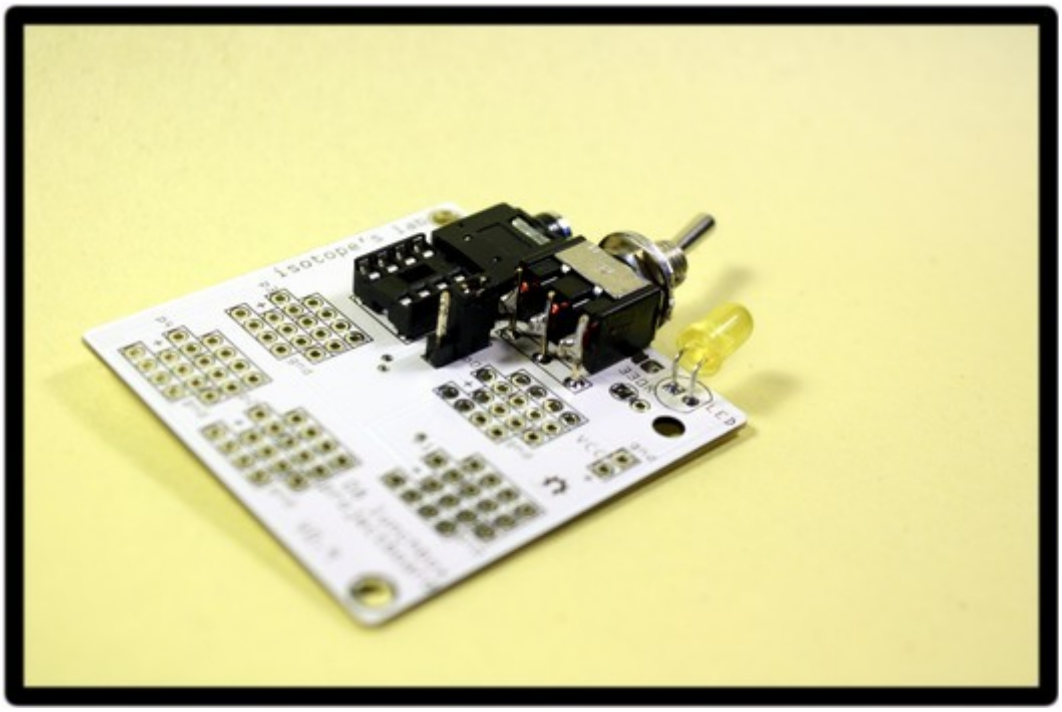
8. You should have your board looking like this at this point



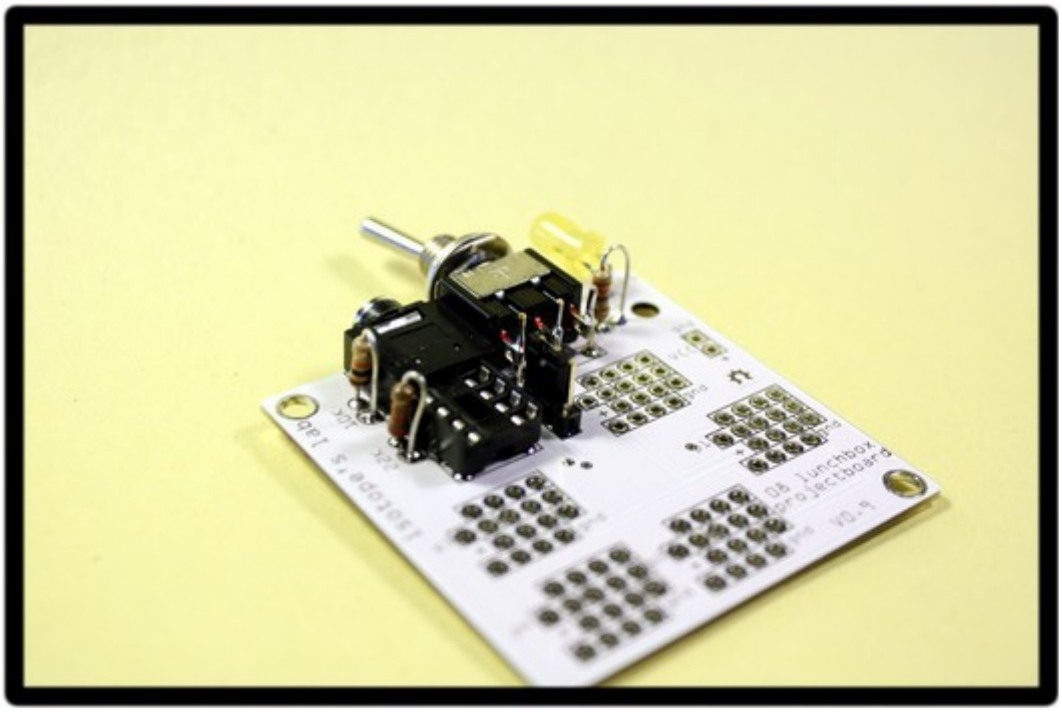
9. Align power indicator LED polarity and bend legs to align with PCB holes.



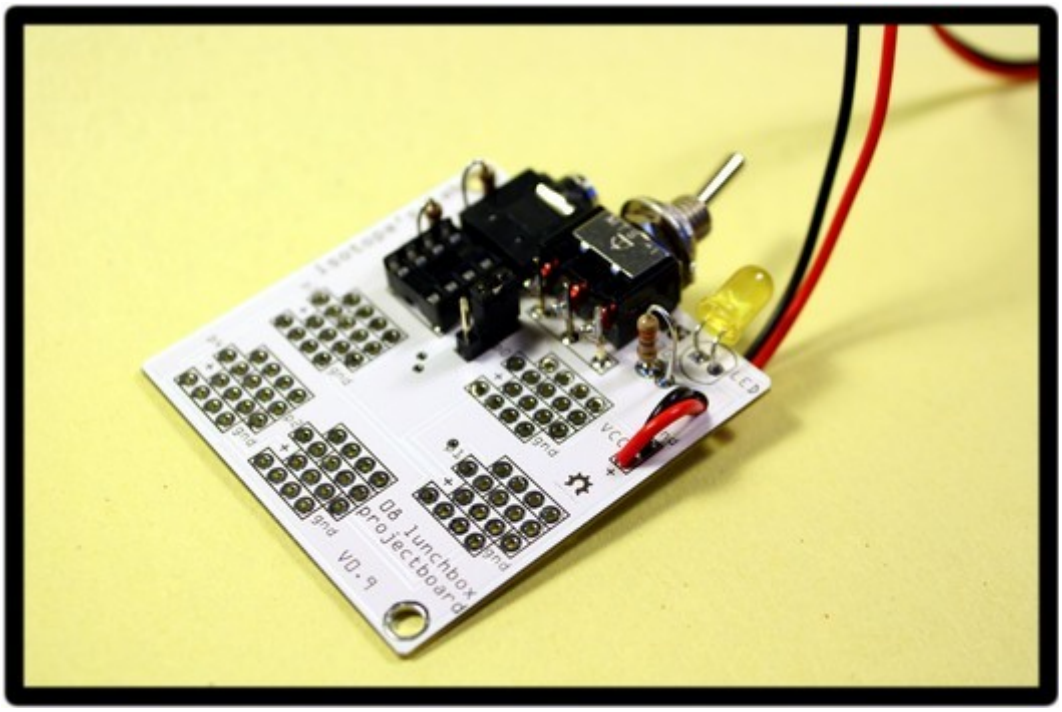
10. Solder LED into the board



11. Solder resistors R1, R2 and R3 in



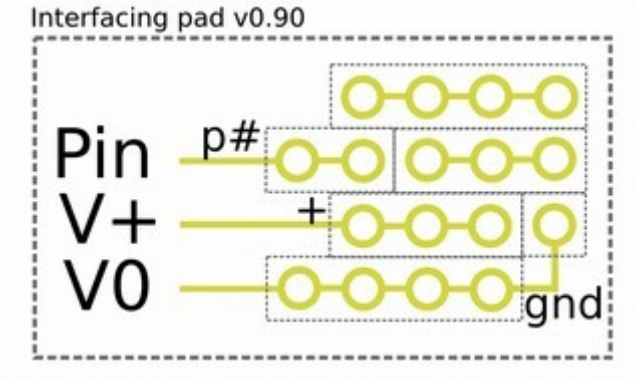
12. Solder power leads in. And the board is ready.



Interfacing

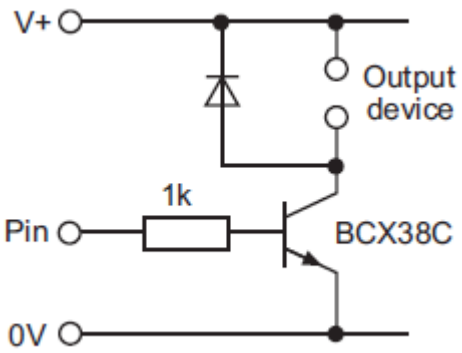
Interfacing pad is provided for each pin to easily connect your sensors and output devices.

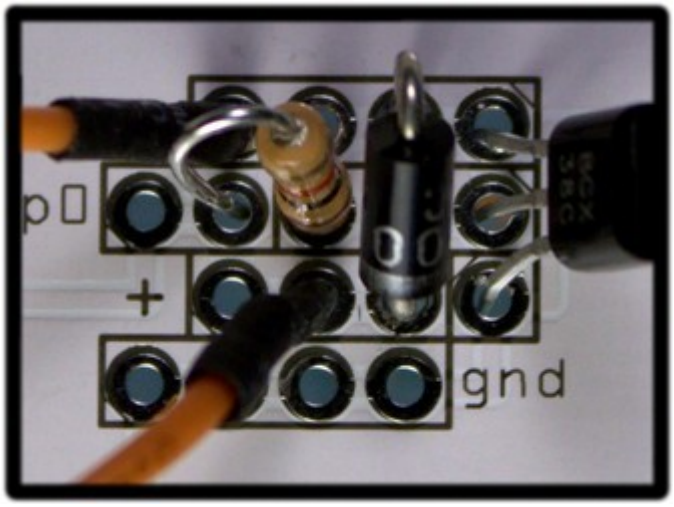
Each pad has following configuration:



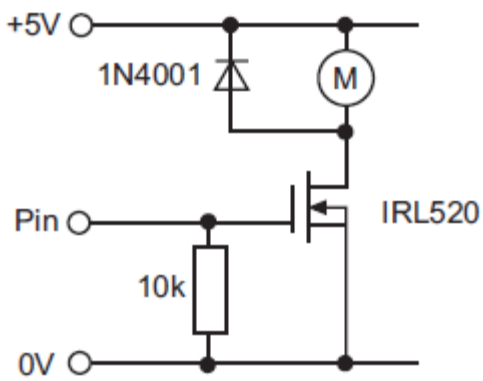
Interfacing Output devices:

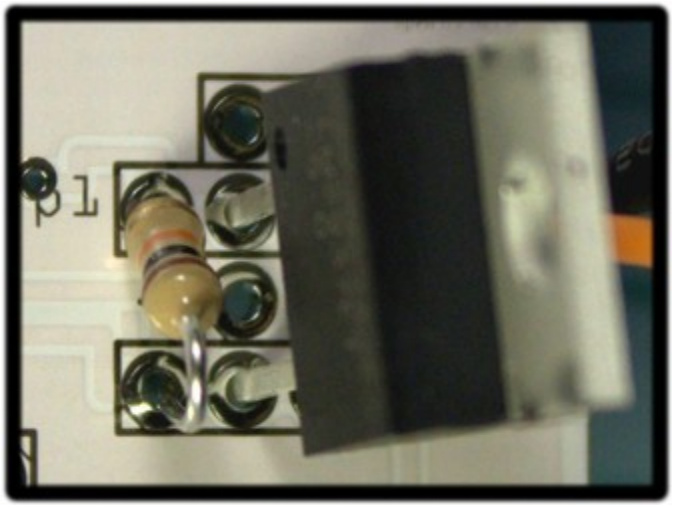
Motor or other device via darlington IC (BCX38C)



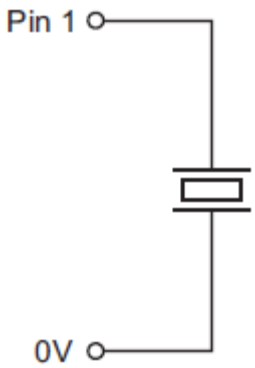


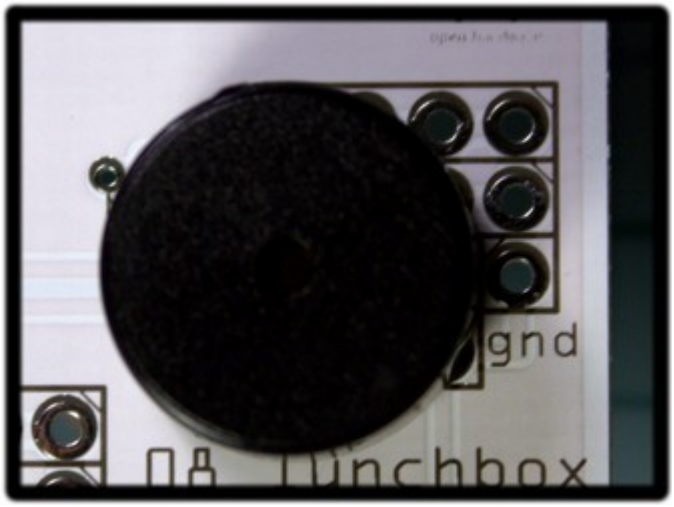
MOSFET

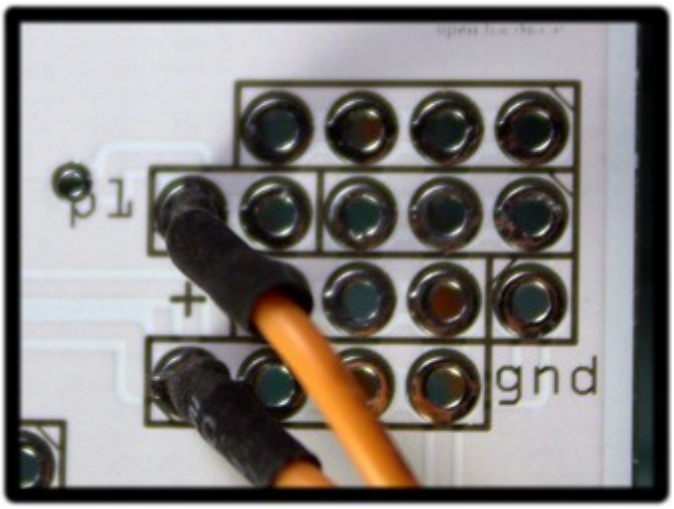




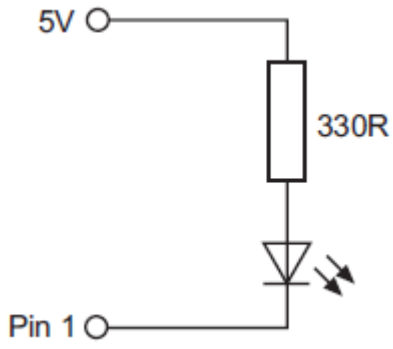
Piezo

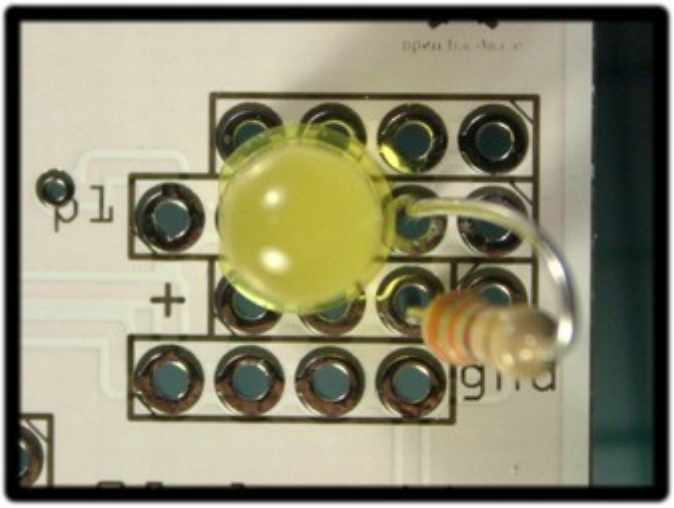




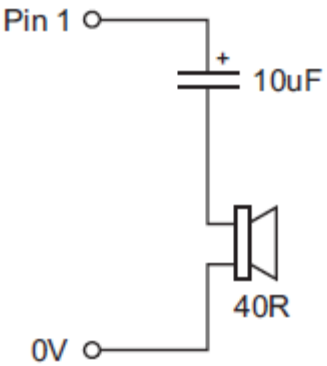


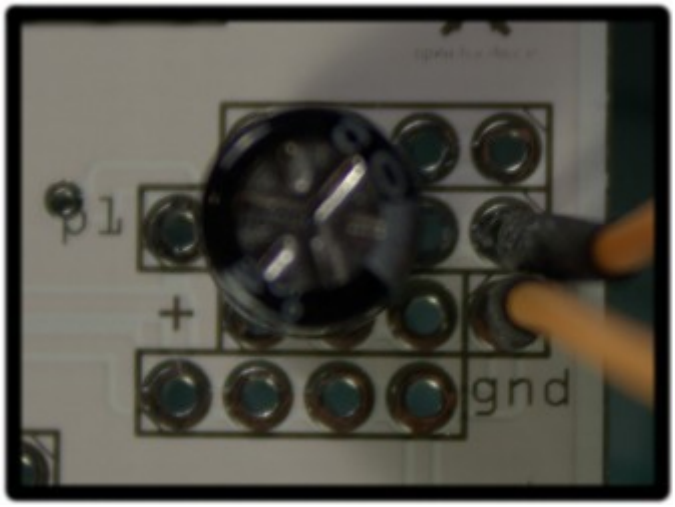
LED



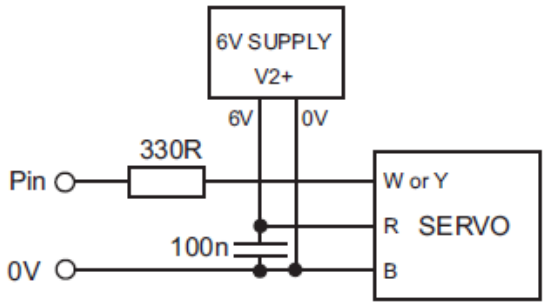


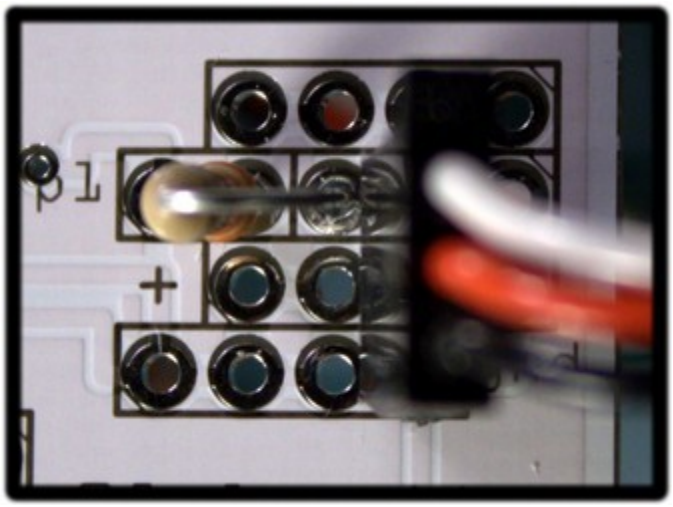
Speaker



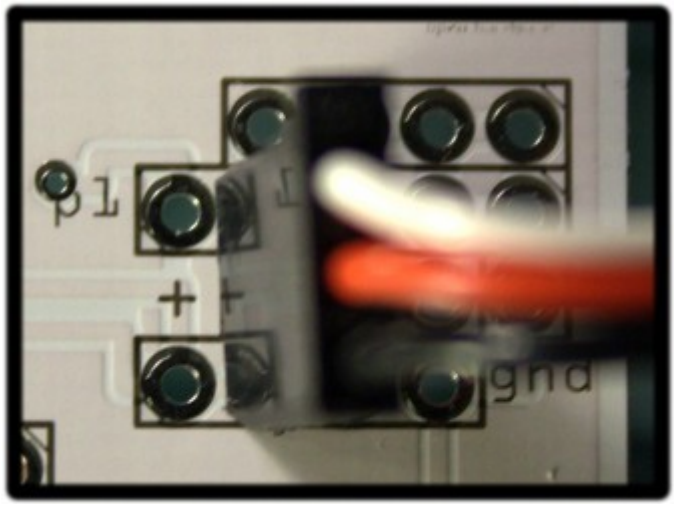
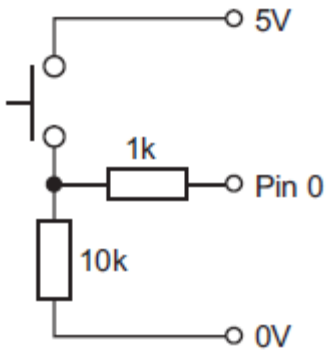
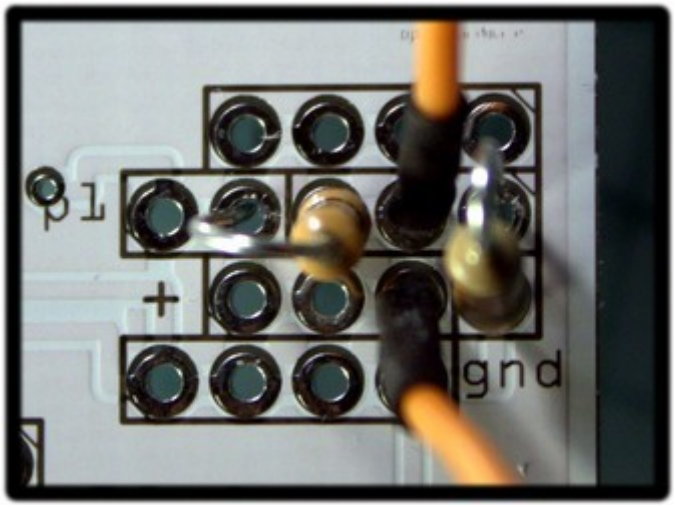


Servo





Interfacing Sensors / Input Devices:

SHARP Distance Sensor	
Momentary switch 	
LDR