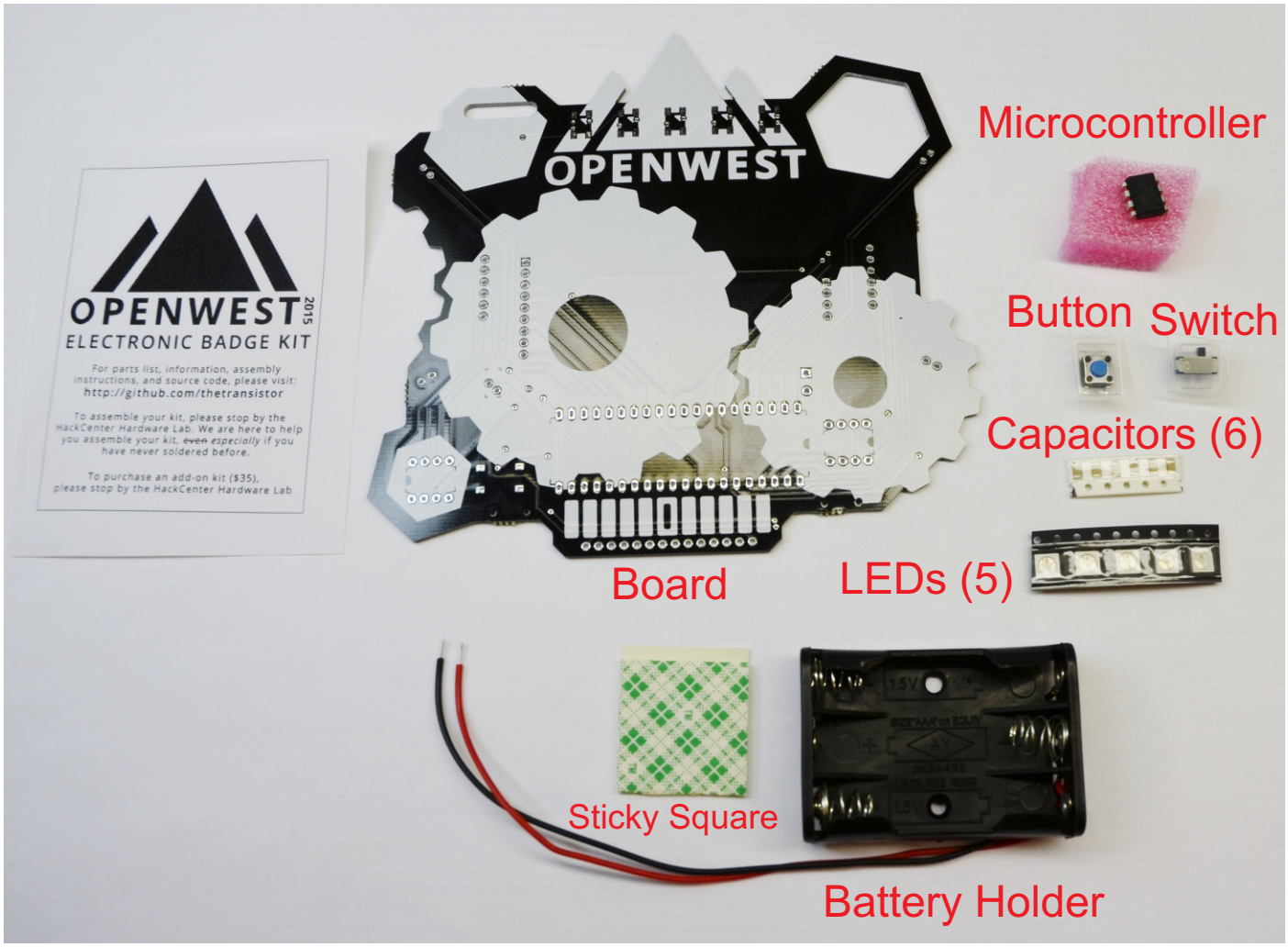
OPENWEST 2015 ELECTRONIC BADGE ASSEMBLY INSTRUCTIONS

Step 1: Identify Parts

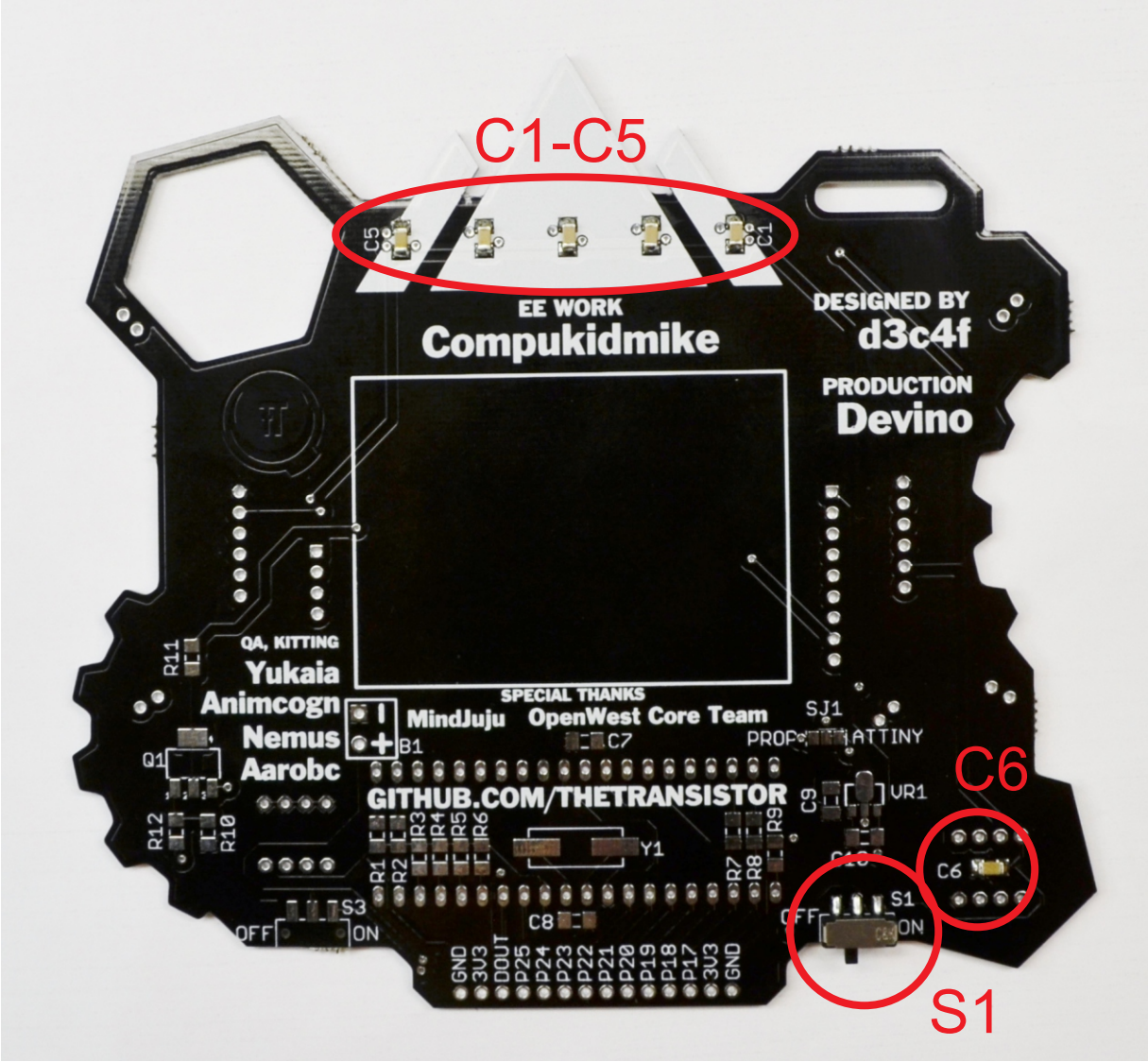
You should have the following parts in your kit:
(1) Badge Circuit Board
(1) ATTiny85 Microcontroller
(1) Tactile Button
(1) Slide Switch
(6) 0.1uF Capacitors
(5) WS2812B RGB LEDs
(1) 3AAA Battery Holder
(1) Double-Sided Sticky Square

If you're missing parts, please let us know.



Step 2: Capacitors and Switch

Flip the board over to the back. Locate the markings for C1-C5 and C6. Solder the 6 capacitors. Orientation does not matter for the capacitors. Locate S1 and solder the switch there. The switch has little plastic tabs on the bottom that fit into holes on the board.

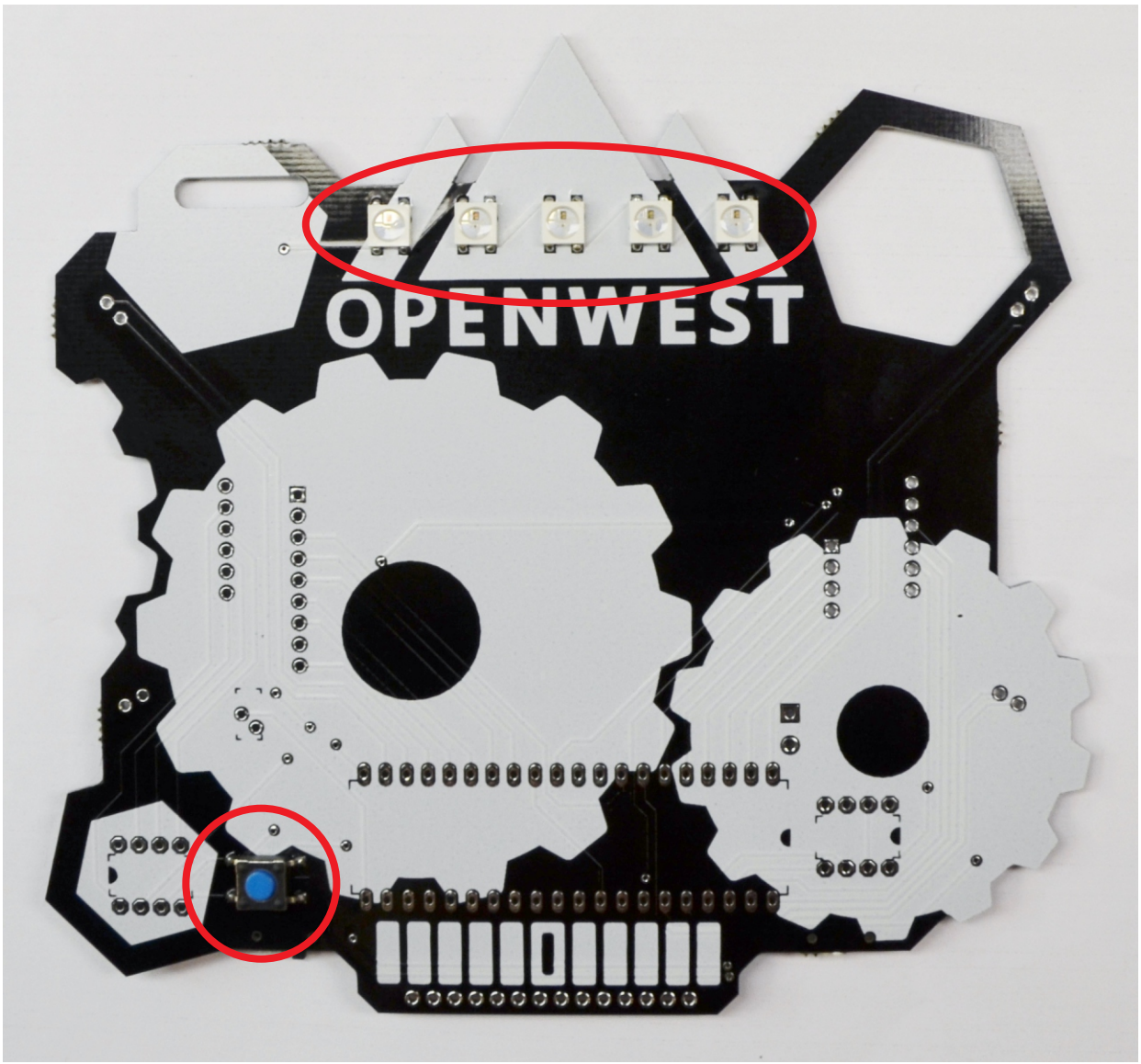


Note: The surface mount parts come in a plastic or paper tray with a thin plastic film over them. You will need to peel this plastic off to get the parts out. BE CAREFUL when doing this as these small parts tend to go flying everywhere.

Note: The easiest way to solder surface mount parts is to first put solder on one of the pads on the board. Then, while holding the soldering iron on that pad to keep the solder melted, use the tweezers to place the part onto the board. You can then solder the other side of the part.

Step 3: LEDs and Button

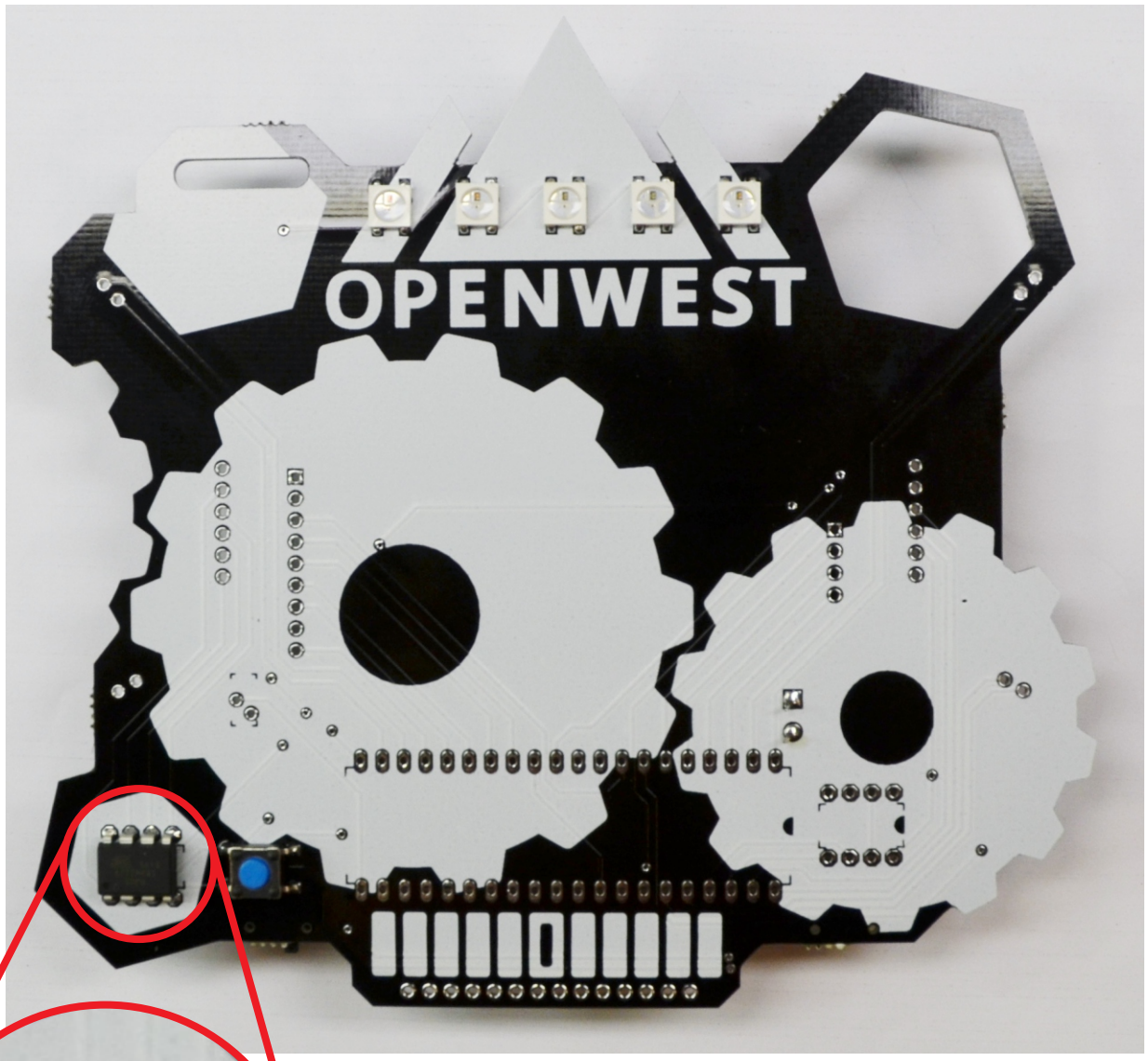
Flip the board back over to the front. Locate the 5 sets of pads at the top of the board, above the OPENWEST text. This is where the LEDs go.
Orientation is critical for these parts! There are two ways to make sure you put them on the correct way. The easiest is to find the small brown rectangle inside the LED. This should be towards the top of the board. The other way is to find the cut off corner on the LED. This should correspond to a triangle on the board.
Once you have determined the correct orientation for the LEDs, solder all 5 of them.
Then, locate the button in the bottom left corner of the board and solder it.

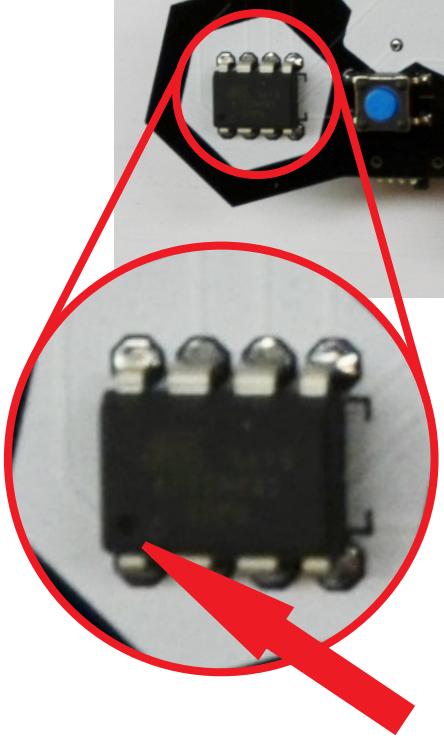


Note: Solder the LEDs and button the same way as the capacitors. Put solder on one pad, place the part, and then solder the rest of the pads.

Step 4: Microcontroller

It's time for the Microcontroller. The Badge uses an Atmel ATTiny85. Once again, orientation matters! The microcontroller goes in the bottom left corner of the board. There is a marking on the top next to pin 1. This marking should be in the bottom-left corner of the chip (pointing to the left). If you are unsure of the correct orientation, please ask us before soldering it!



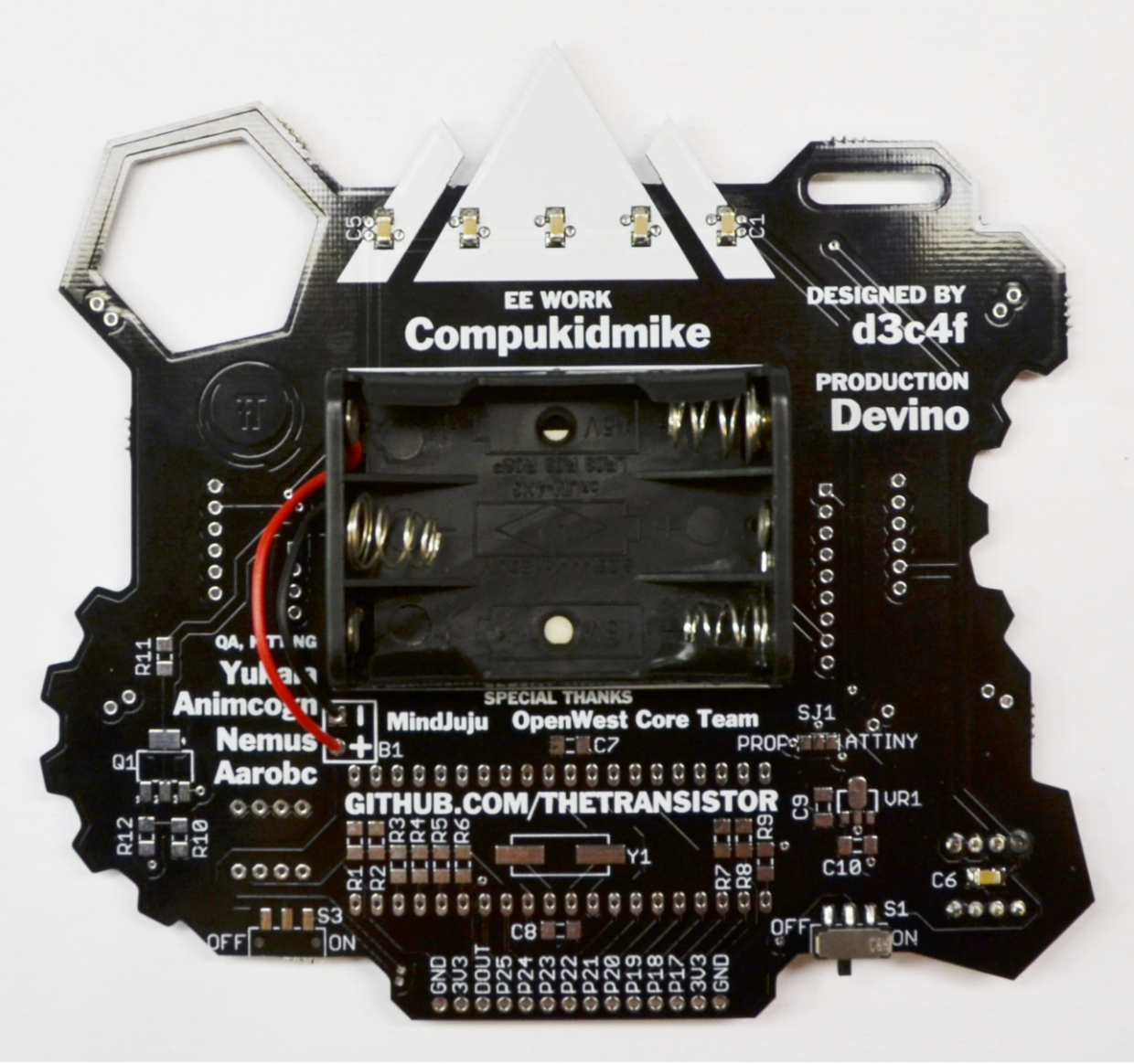


Pin 1 Marking

Note: This is the first through-hole part on the board. It needs to be soldered from the back of the board. So once you have it placed correctly, flip the board over and solder the pins.

Step 5: Battery Holder

This is it, the final piece! The first thing to do is put the sticky square on the bottom of the battery holder. You might need to adjust the wire on the bottom so that it fits in the groove.
Then place the battery holder on the board with the wires coming out to the left. Now you will need to cut the wires to the correct length. They need to reach the square marked B1. The black wire goes to the “-” and the red wire goes to the “+”. Once you cut the wires, strip off about 1/4” of insulation. Place the wires through the holes and solder them on the front side of the board, then cut off the excess wire close to the board.



You’re done! Put some batteries in, flip the switch to “ON” and the LEDs should light up. If they don’t, please let us know and we’d be happy to help you get it working. Enjoy your badge!