

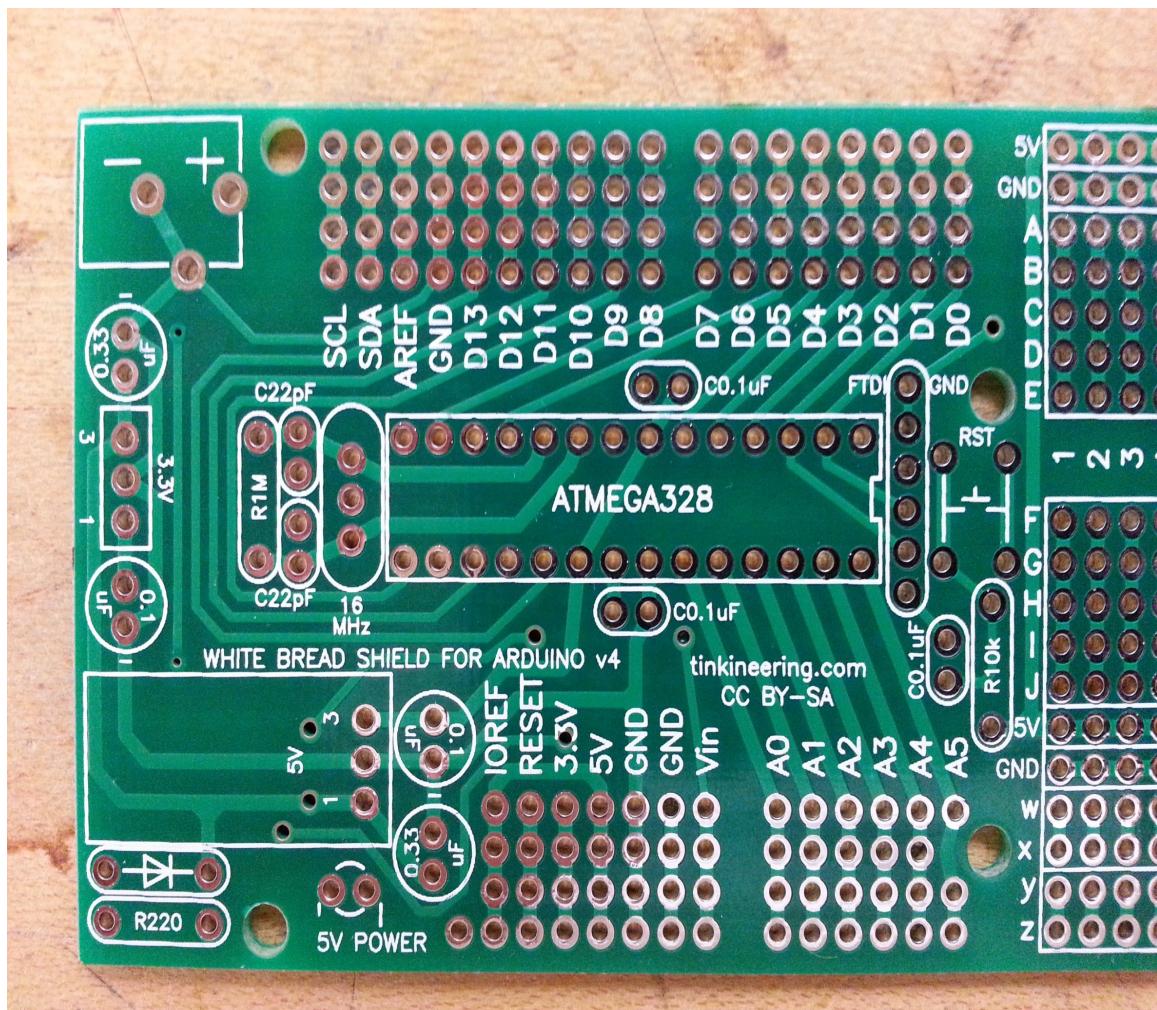


White/Wheat Bread Shield Assembly Instructions

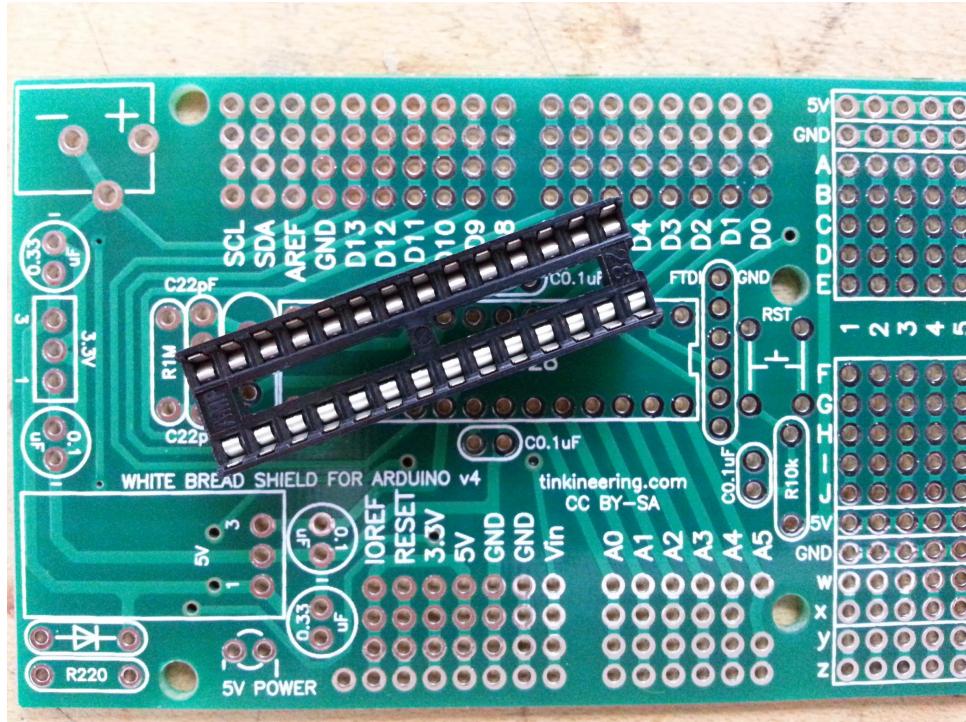
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The parts list for soldering and assembling the White or Wheat Bread Shield as a stand-alone board can be found [here](#).

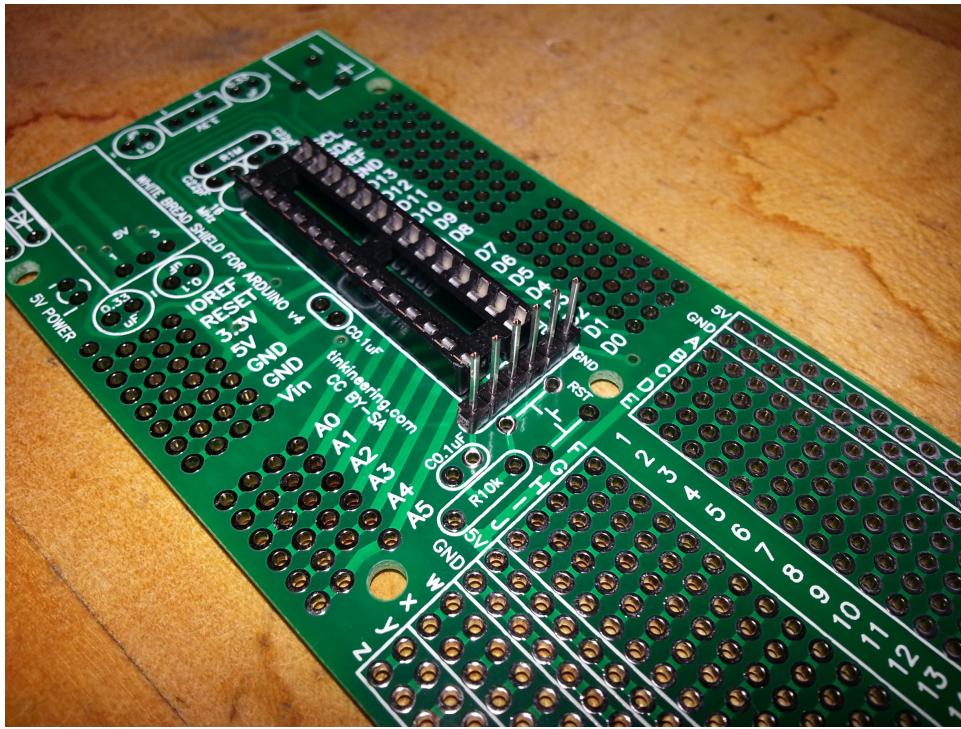
The White Bread Shield and Wheat Bread Shield have the same layout for the microprocessor and related components. These assembly instructions show the White Bread Shield for reference.



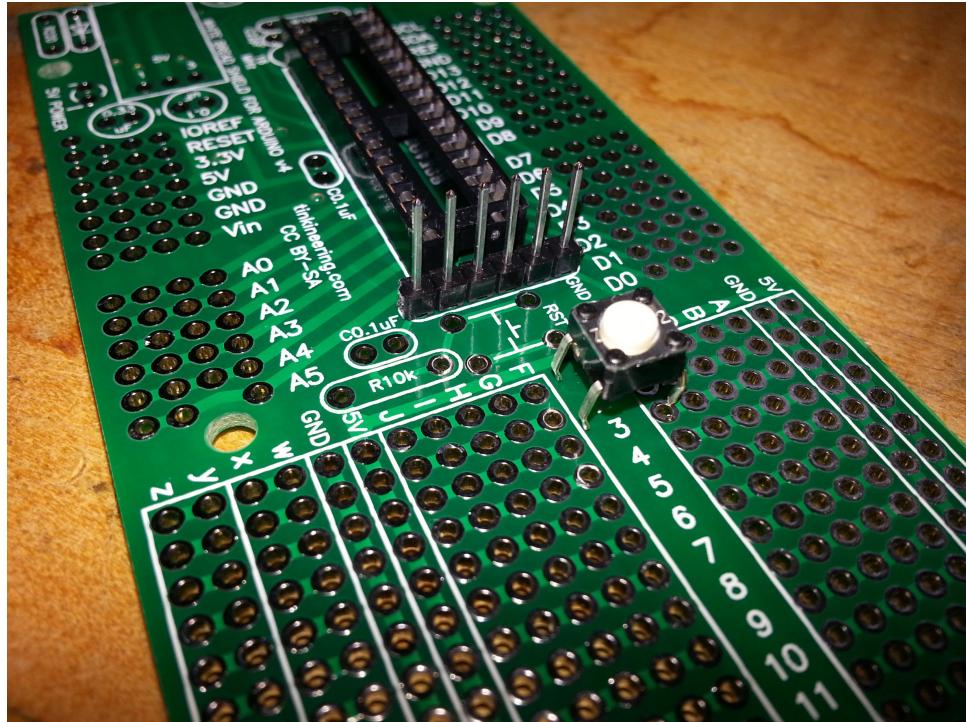
Start with the components located in the center of the board and work out from there. Start with the 28-pin DIP socket. Notice the notch in one end of the socket and match it with the printing on the board.



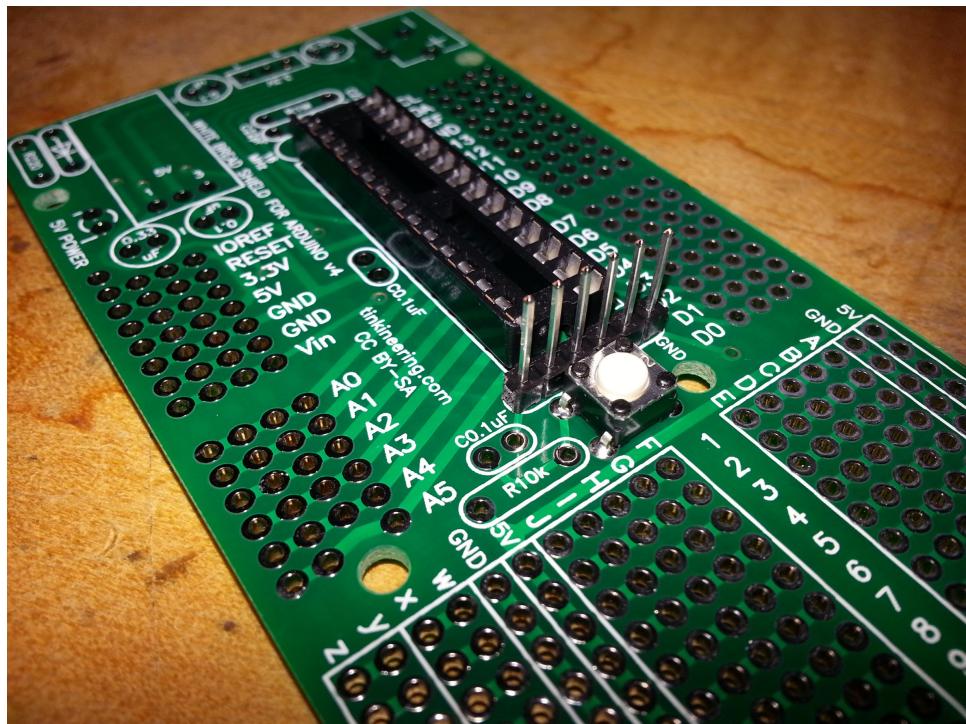
A 6-pin header is used for the FTDI header.



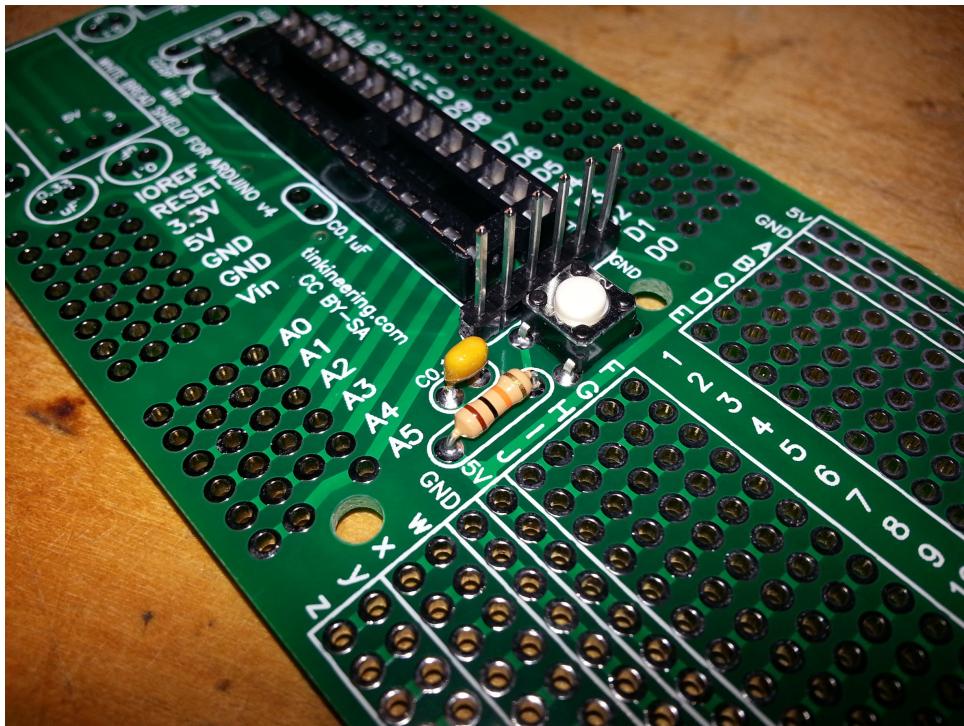
The Reset pushbutton is located next to the FTDI header. Notice the orientation of the legs.



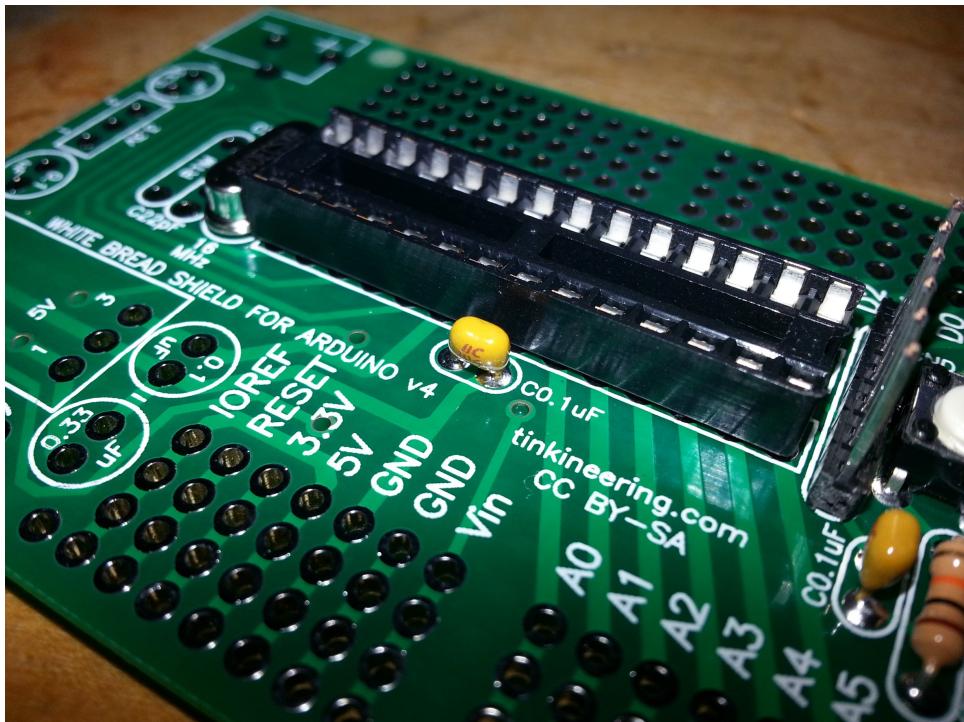
Here's the pushbutton soldered to the board.



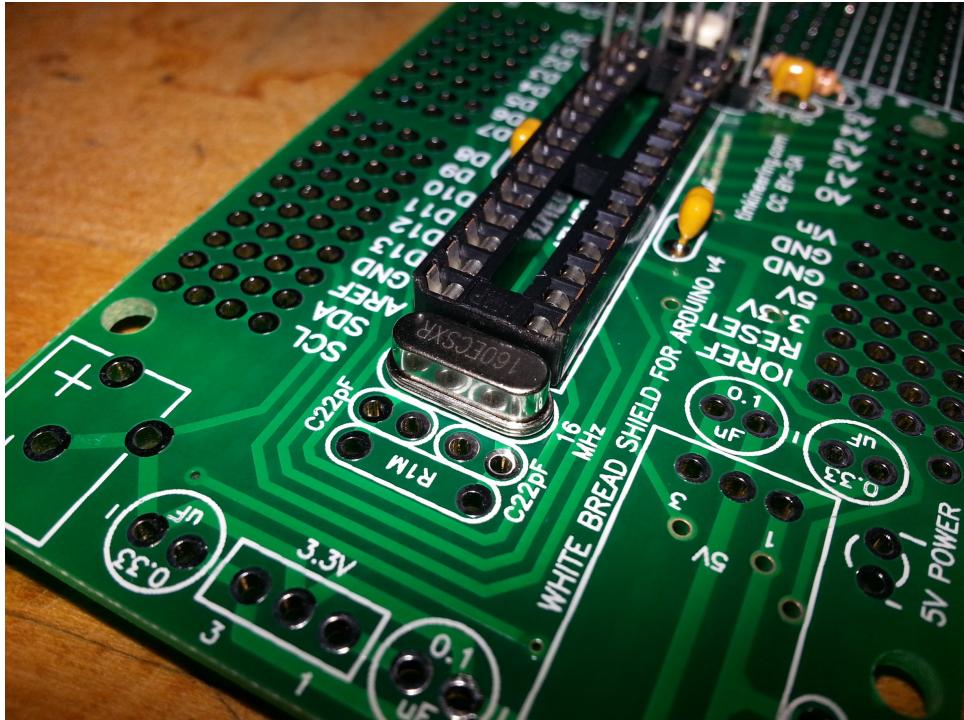
Next, a 0.1uF capacitor and 10k-ohm resistor can be soldered into place. Notice the colors on the resistor to get the correct value. The orientation of the capacitor doesn't matter.



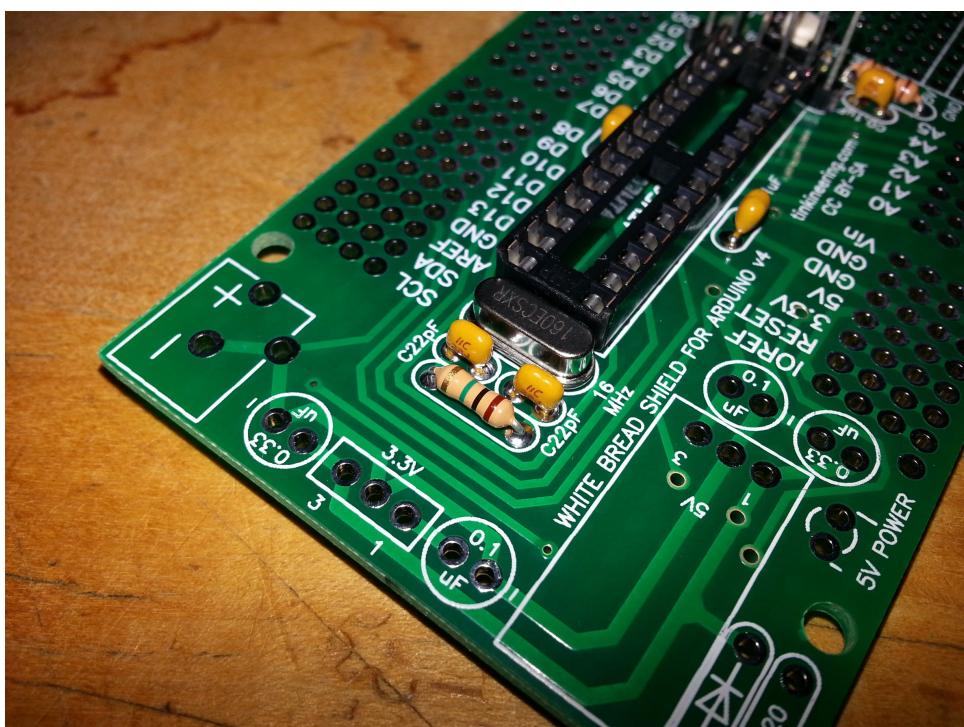
The other filter capacitors can be soldered in place on either side of the DIP socket.



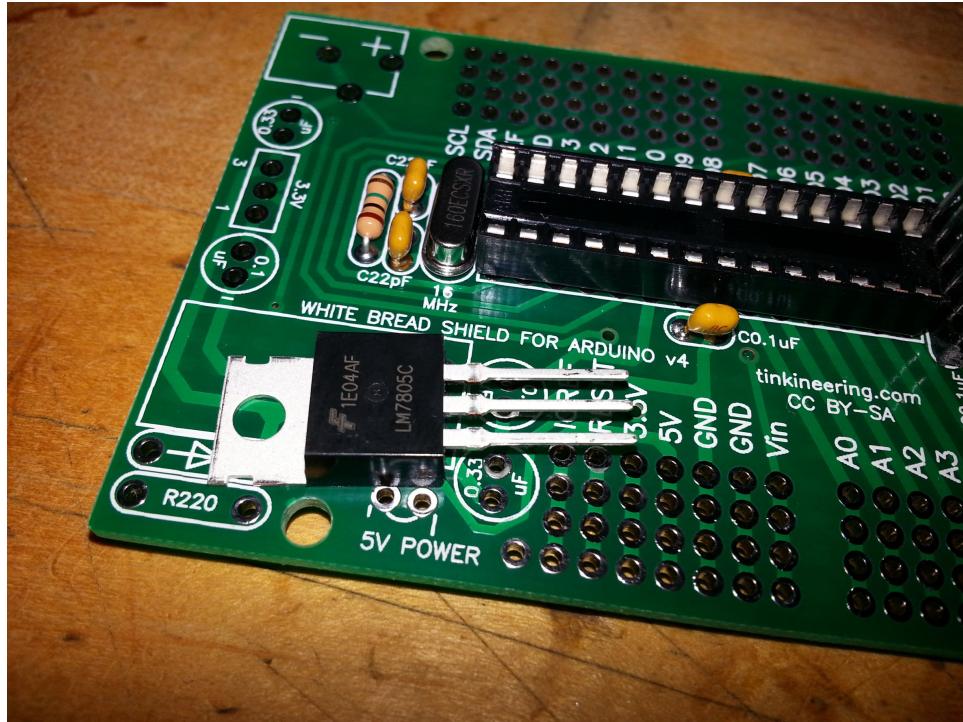
The crystal can be soldered into place for the oscillator.



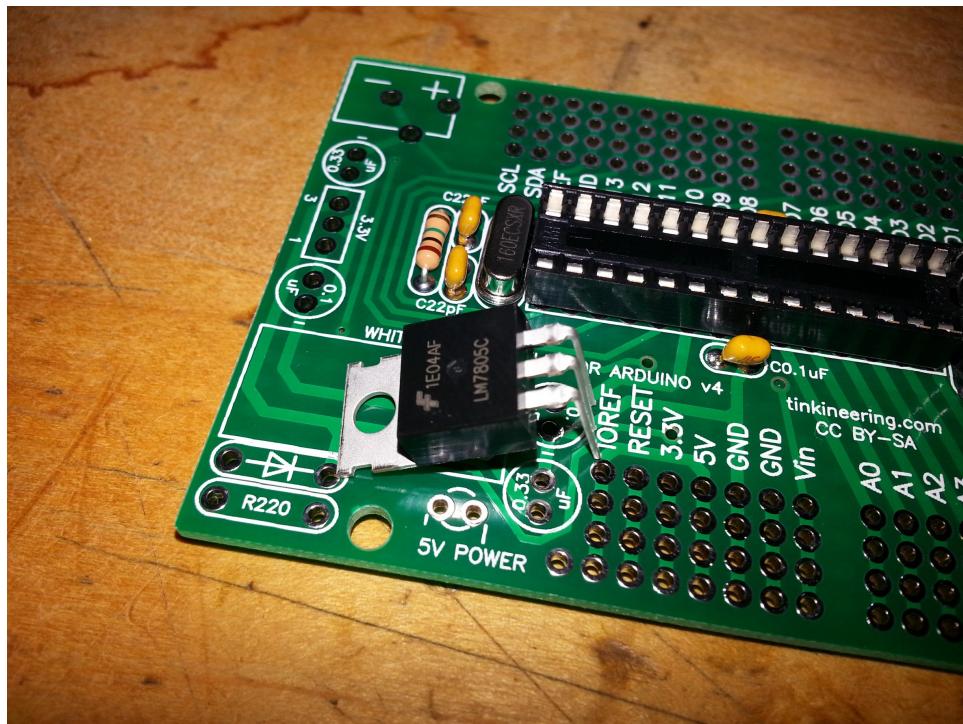
The 22pF capacitors and the 1M-ohm resistor can be added to complete the oscillator circuit. Notice how the resistors are marked on the board with a R and the capacitors are marked with a C.



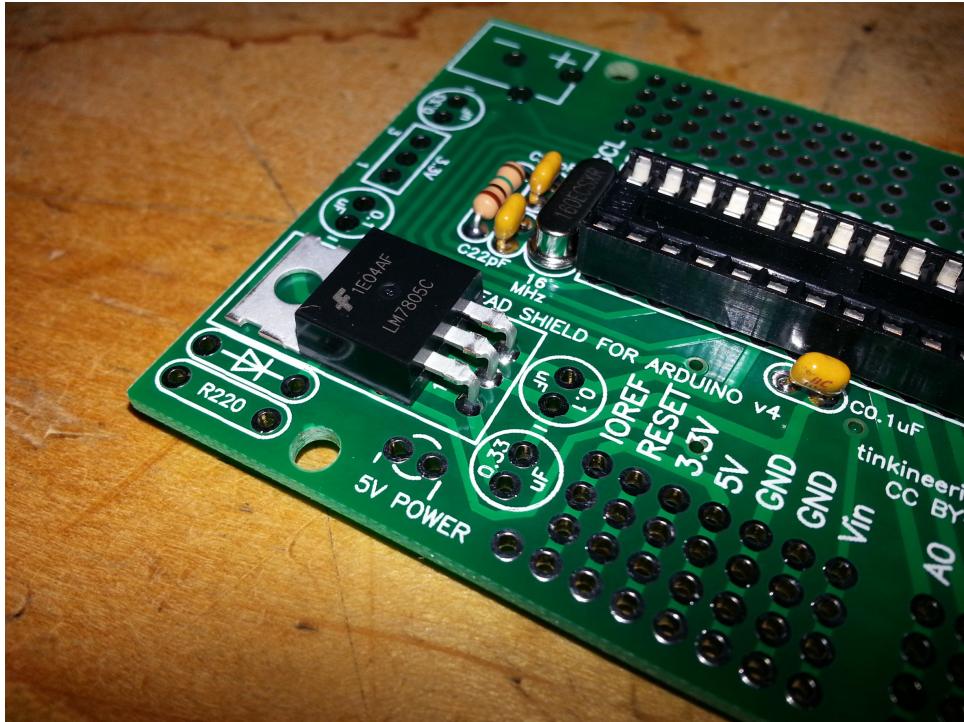
The 5V voltage regulator can be placed next.



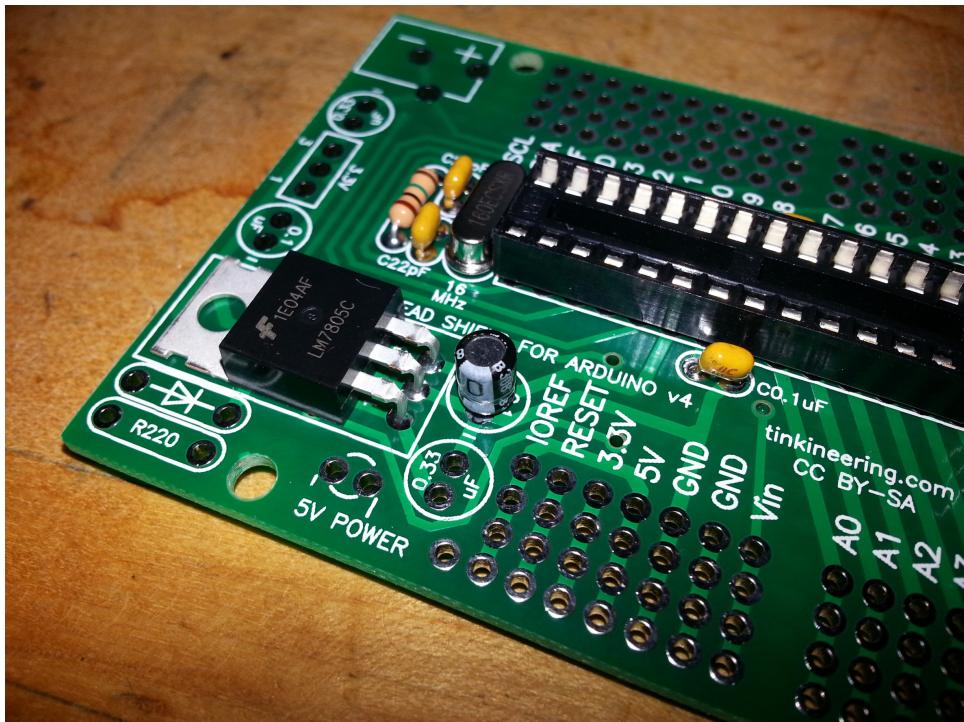
However, first you'll need to bend the legs to allow the voltage regulator to lay flat on the board.



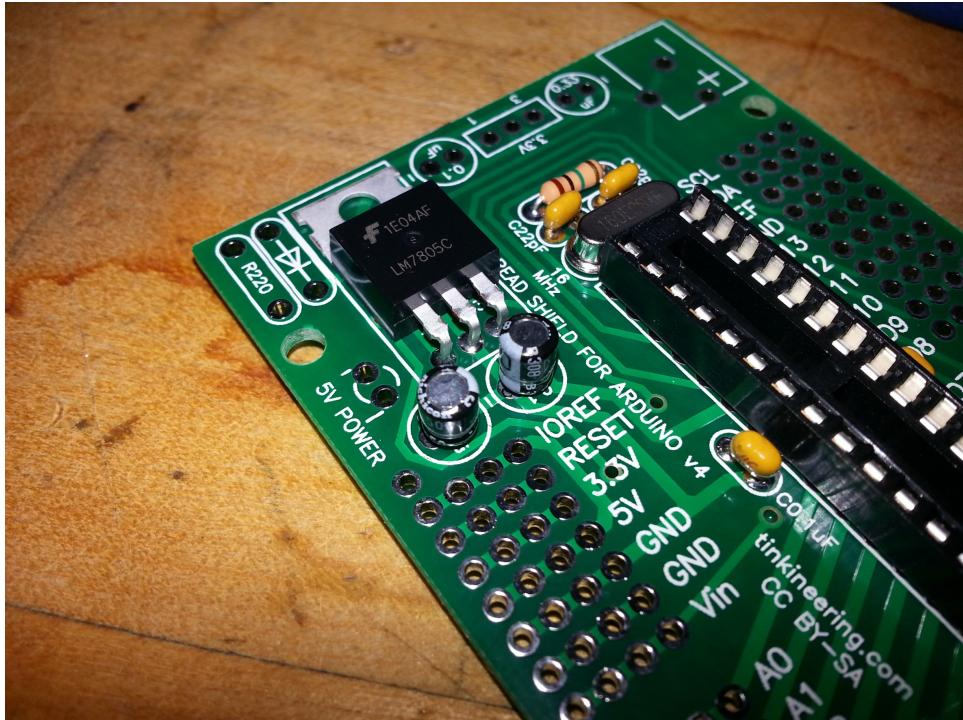
Here's the voltage regulator soldered into place.



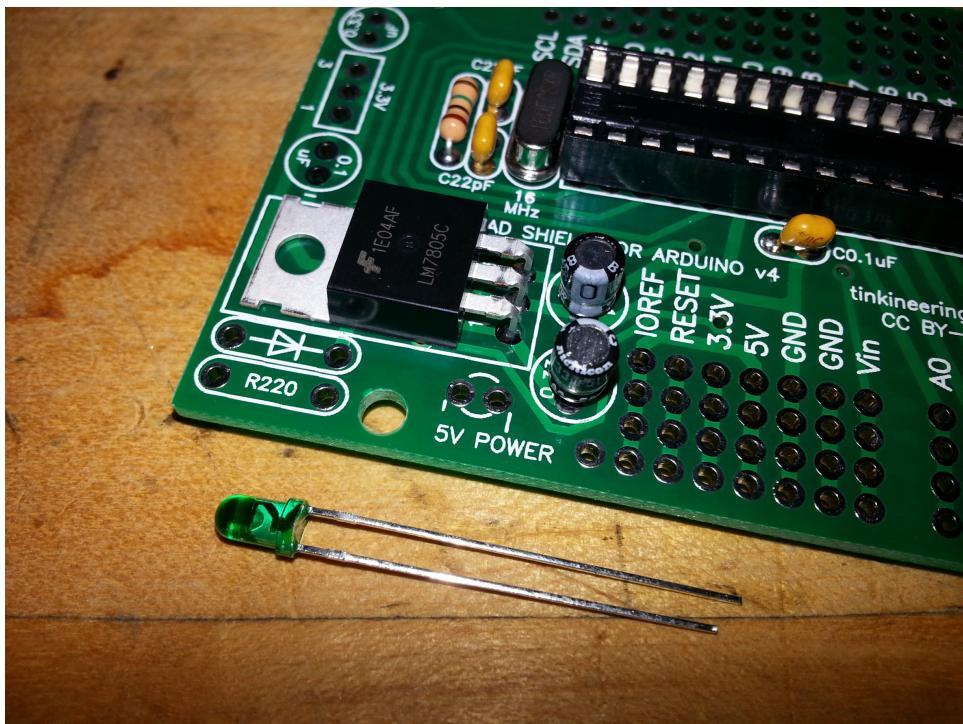
Next, solder in the 0.1uF capacitor. Notice the minus sign on the board to specify the orientation of the capacitor. The stripe on the capacitor must line up.



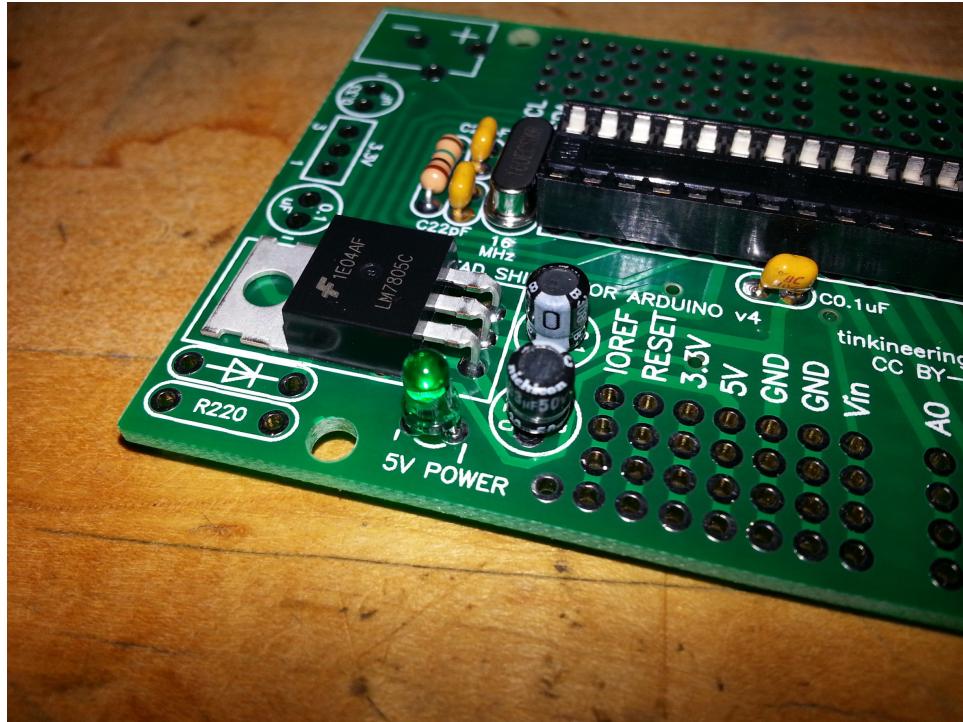
The 0.33uF capacitor can be soldered into place. Make sure the orientation is correct.



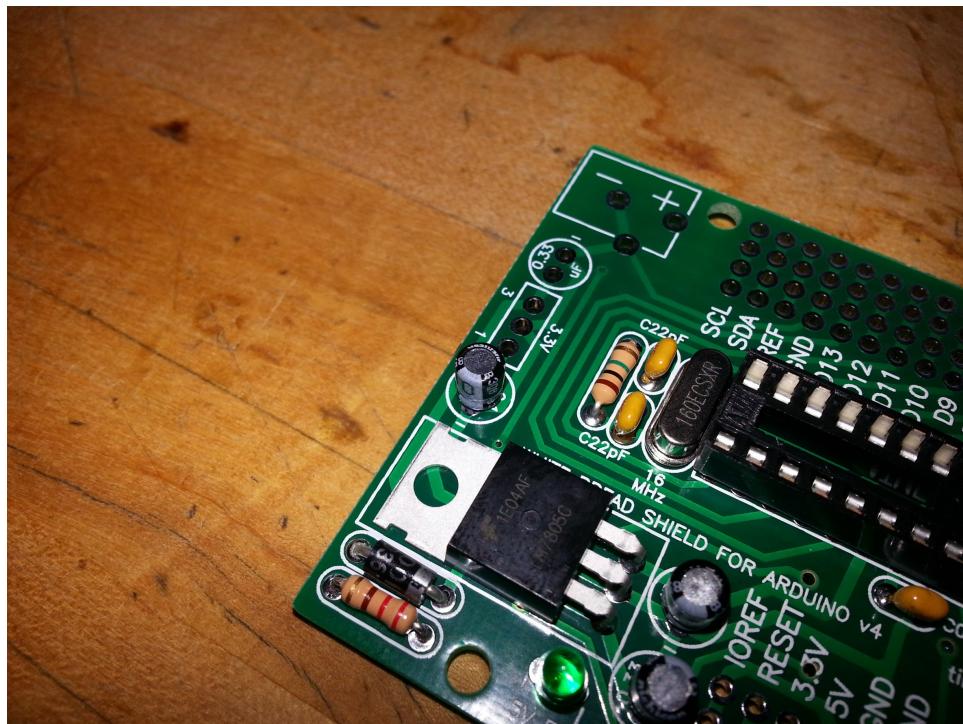
The Power LED is next. The printing for the LED shows a long and short line. The corresponds to the long and short lead on the LED.



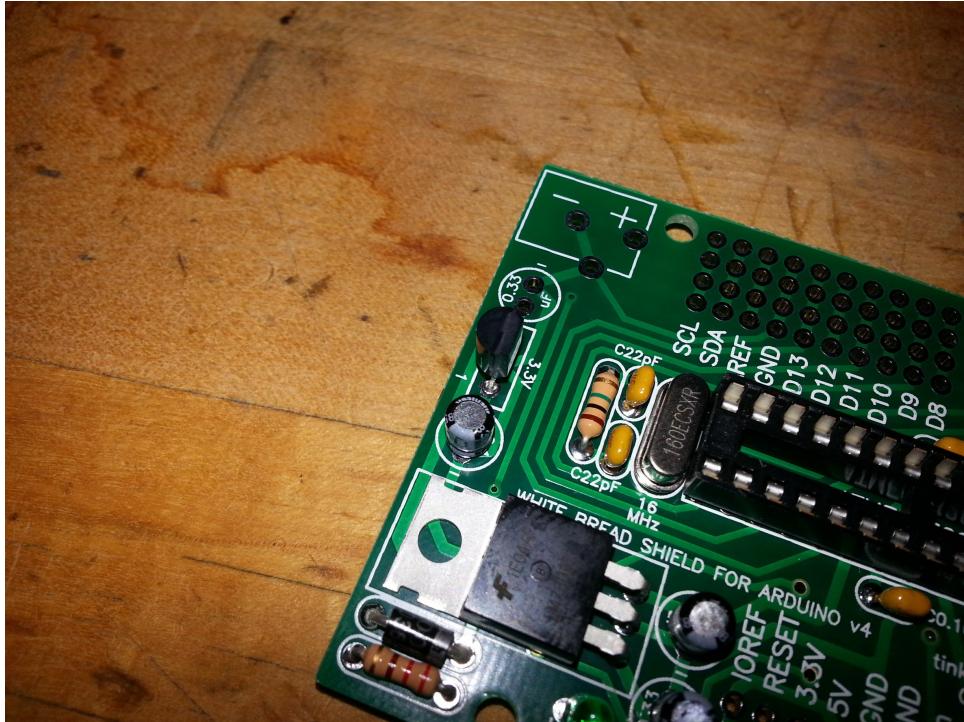
Here's the LED soldered into place.



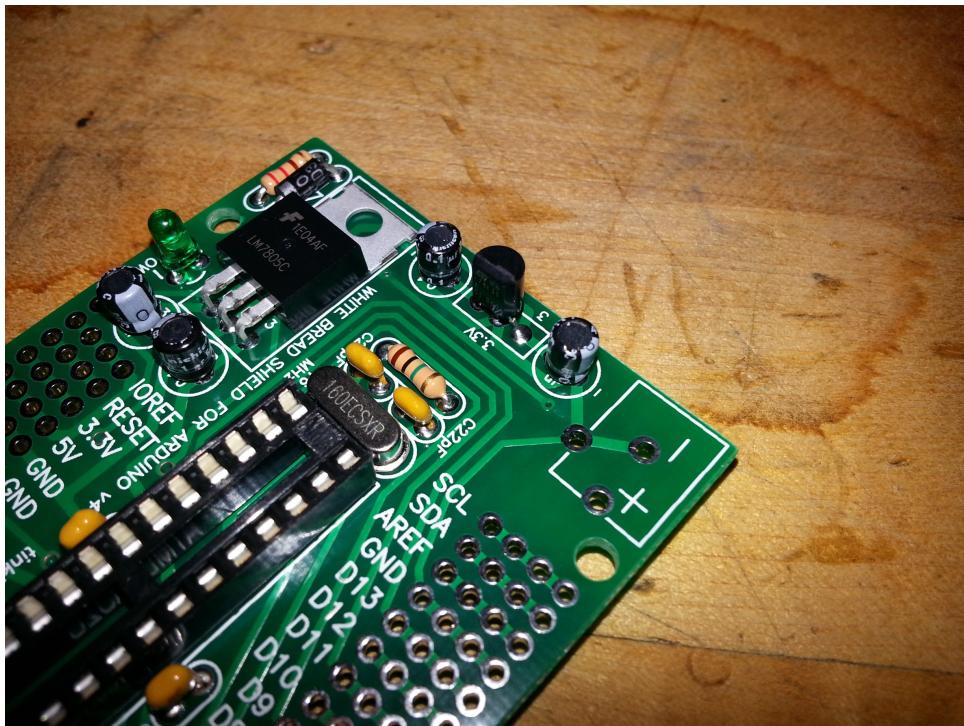
The incoming power diode and 220-ohm resistor for the LED can be soldered into place. The 0.1uF capacitor for the 3.3V voltage regulator can also be placed. Notice the minus sign on the board to help with the orientation.



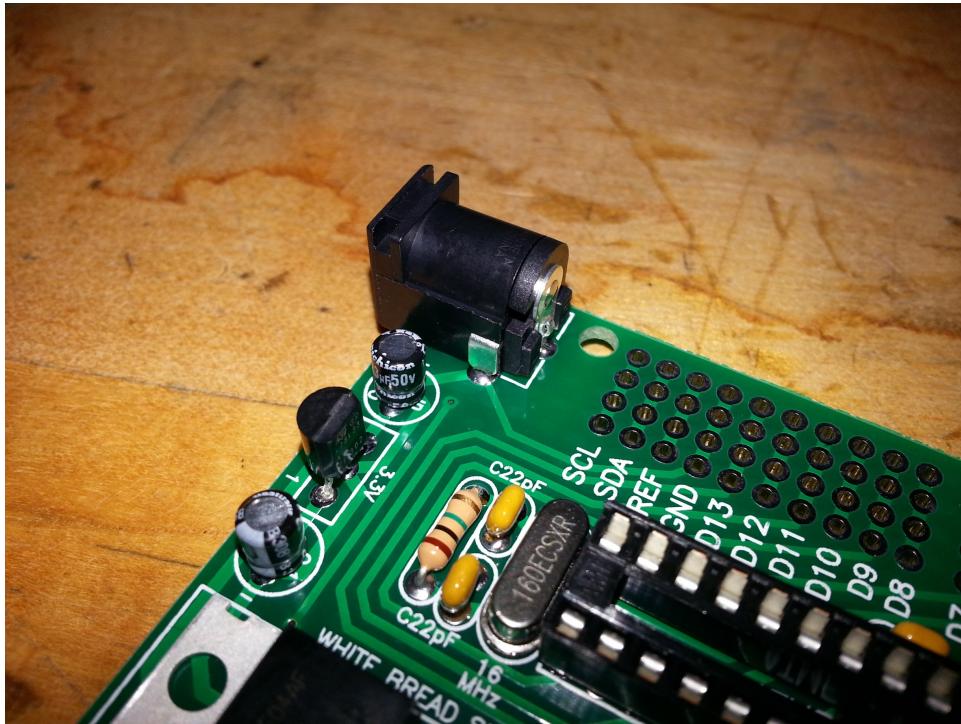
The 3.3V voltage regulator can be soldered in. Notice the rounded side of the regulator faces out away from the board.



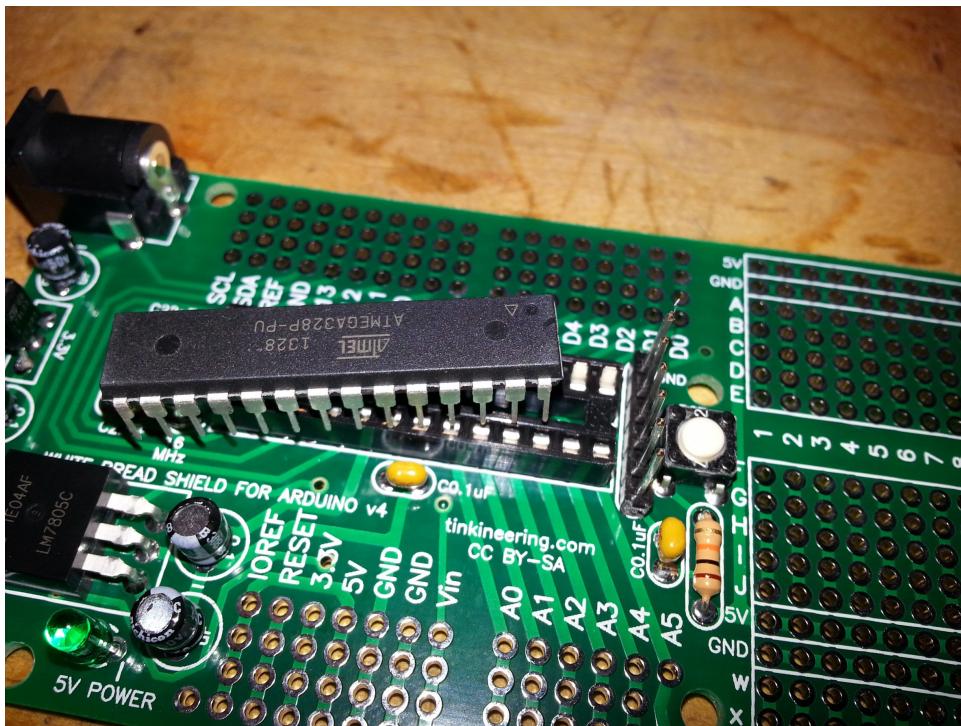
The 0.33uF capacitor can be placed. There's another minus sign to help with the orientation. You can see how the negative sides of the capacitors face away from each other for the 3.3V voltage regulator.



Lastly, the power jack can be soldered into place.



With all the components soldered into place, the ATMEGA328P can be popped into the socket. Notice the notch in the chip that corresponds with the one in the socket and board printing.



Hopefully, these instructions have been helpful and your board is ready for a program.

