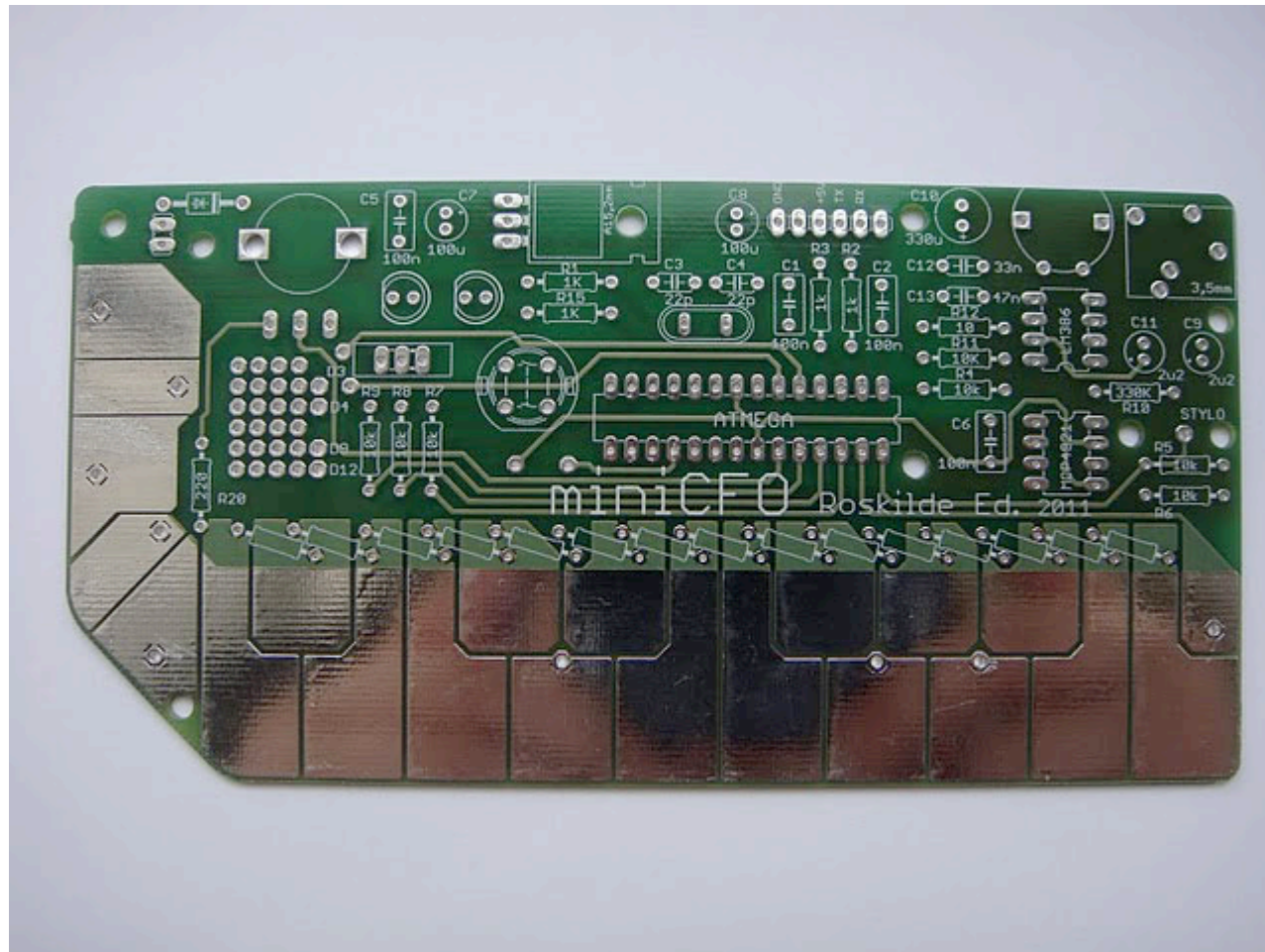
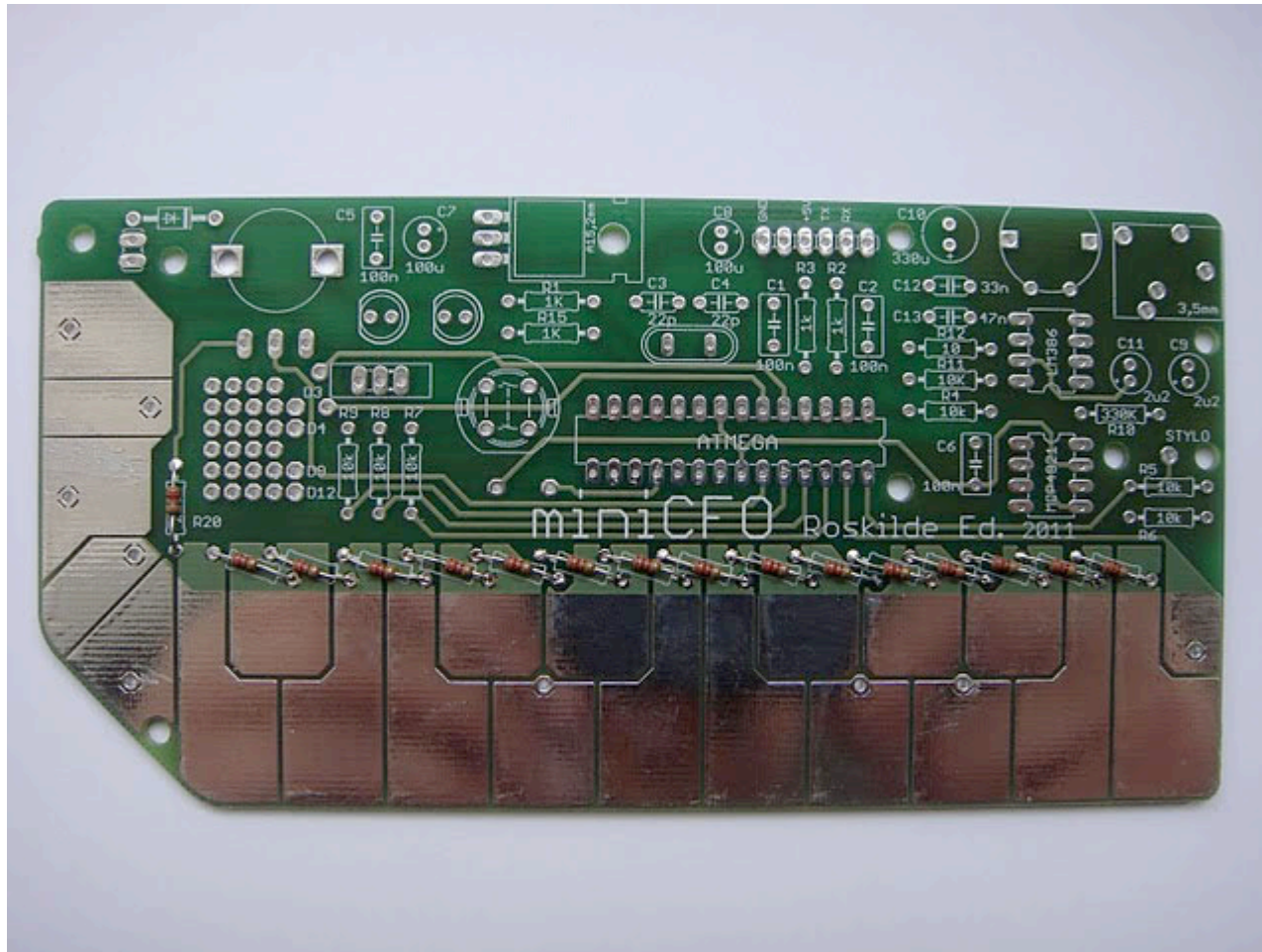


miniCFO assembly instructions ver1.1 ---- NOTCH11 workshop sept. 22nd 2011
more info: <http://8bitklubben.dk/project/CFO/>

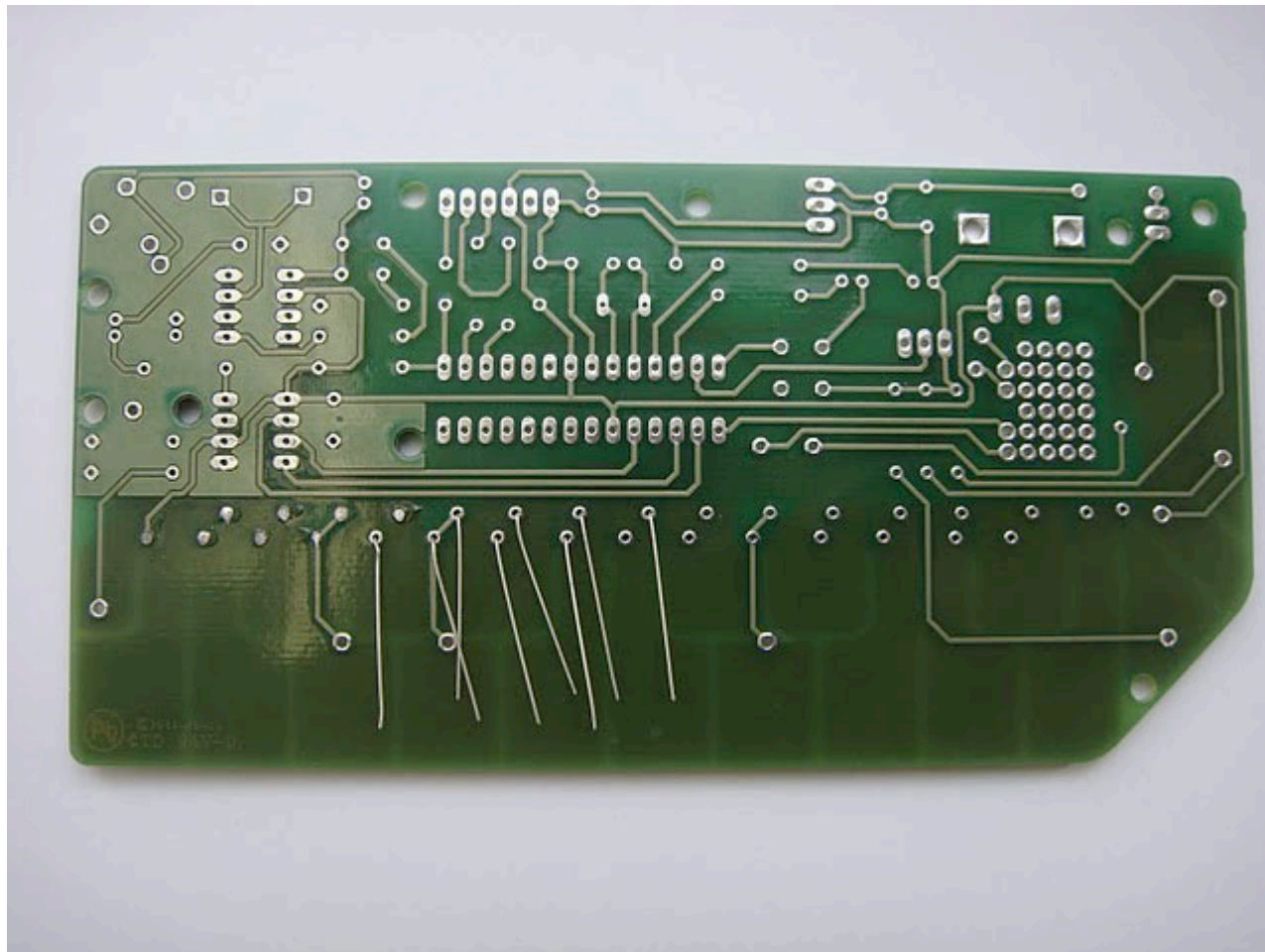
0) This is the board when you get it. Check that all the components are in the bag!



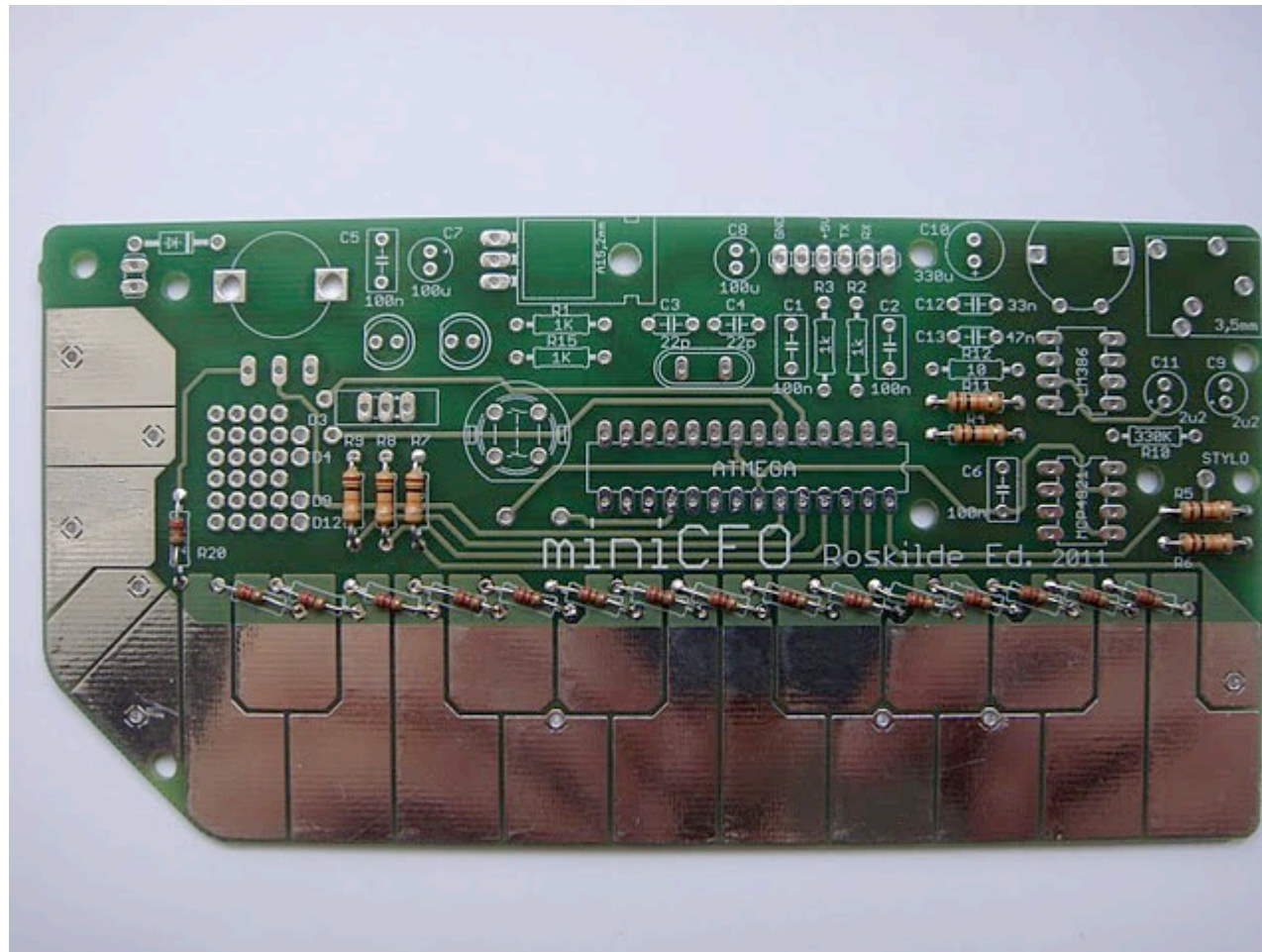
1) Solder the sixteen 220 Ω resistors near the Stylophone keys. Remember the last one on the far left (R20 that has written "220" in it)



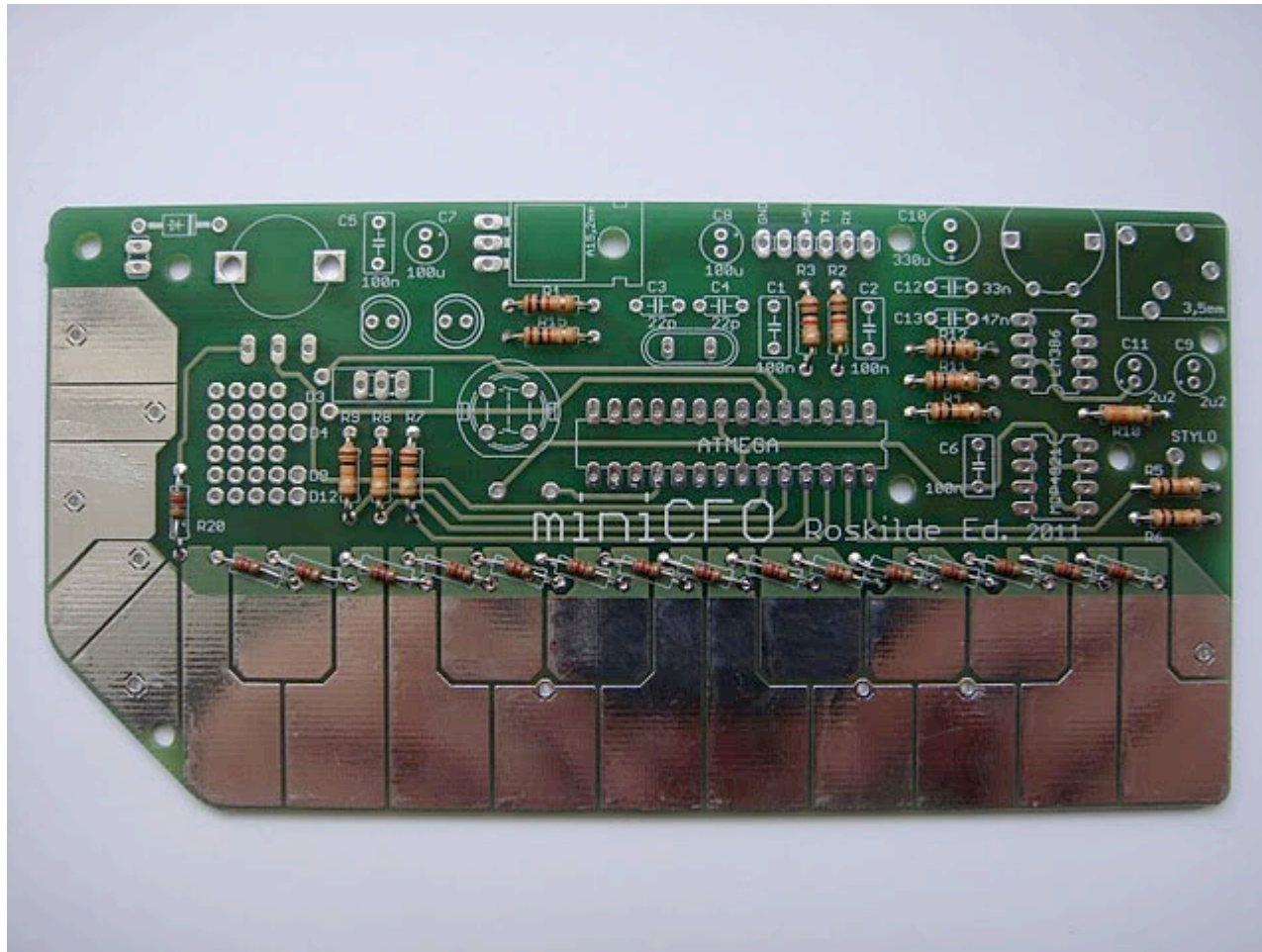
It can be easier to keep the resistors (and all following components) in place if you bend the legs on the backside of the board, before soldering. Just make sure not to get the legs too close to other soldering points. Snip off the rest of the leg with a cutter when finished soldering. All soldering is on the backside, just in case you were in doubt :)

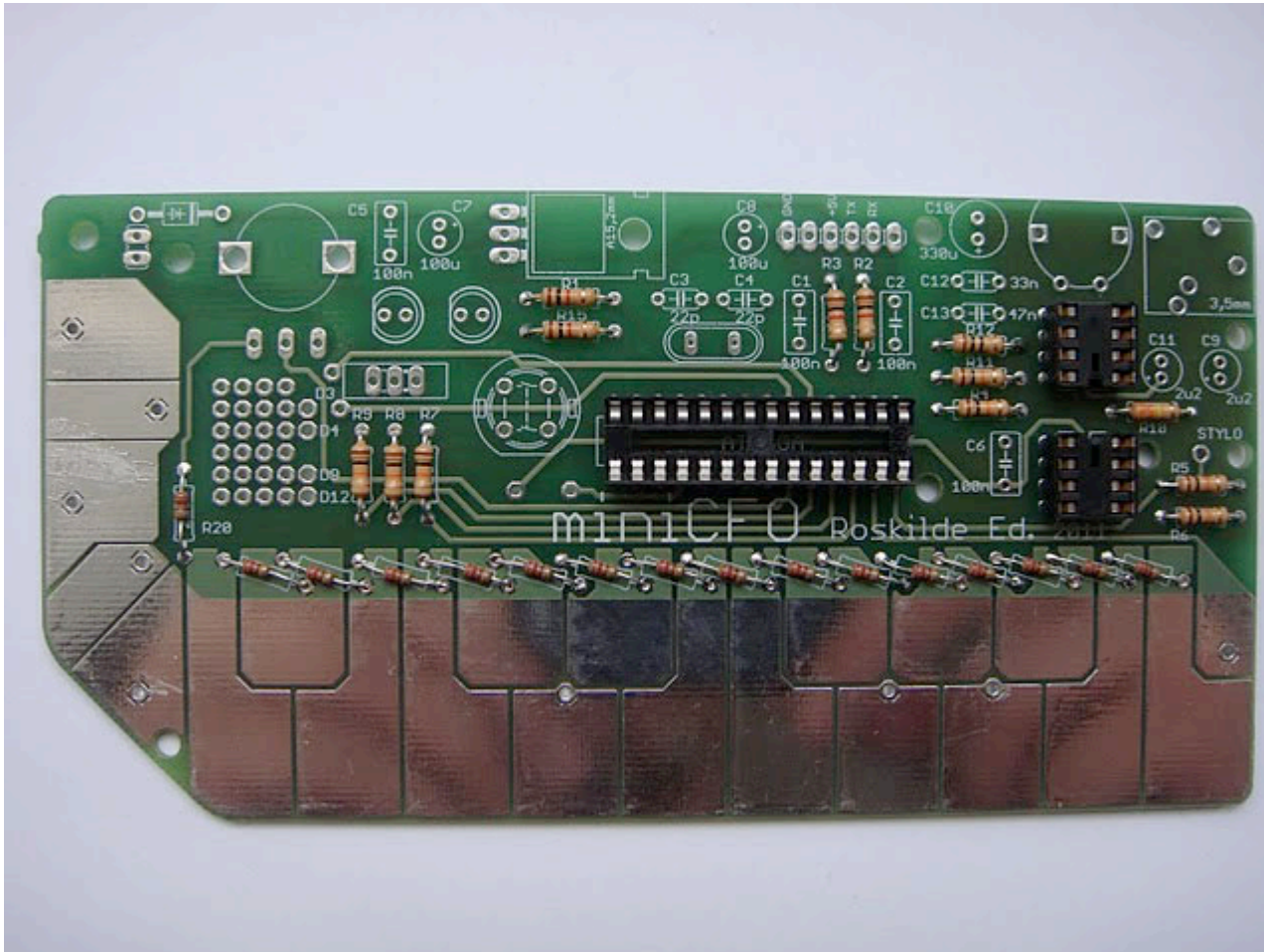


2) Solder the seven 10K Ω resistors (R4, R5, R6, R7, R8, R9 and R11)

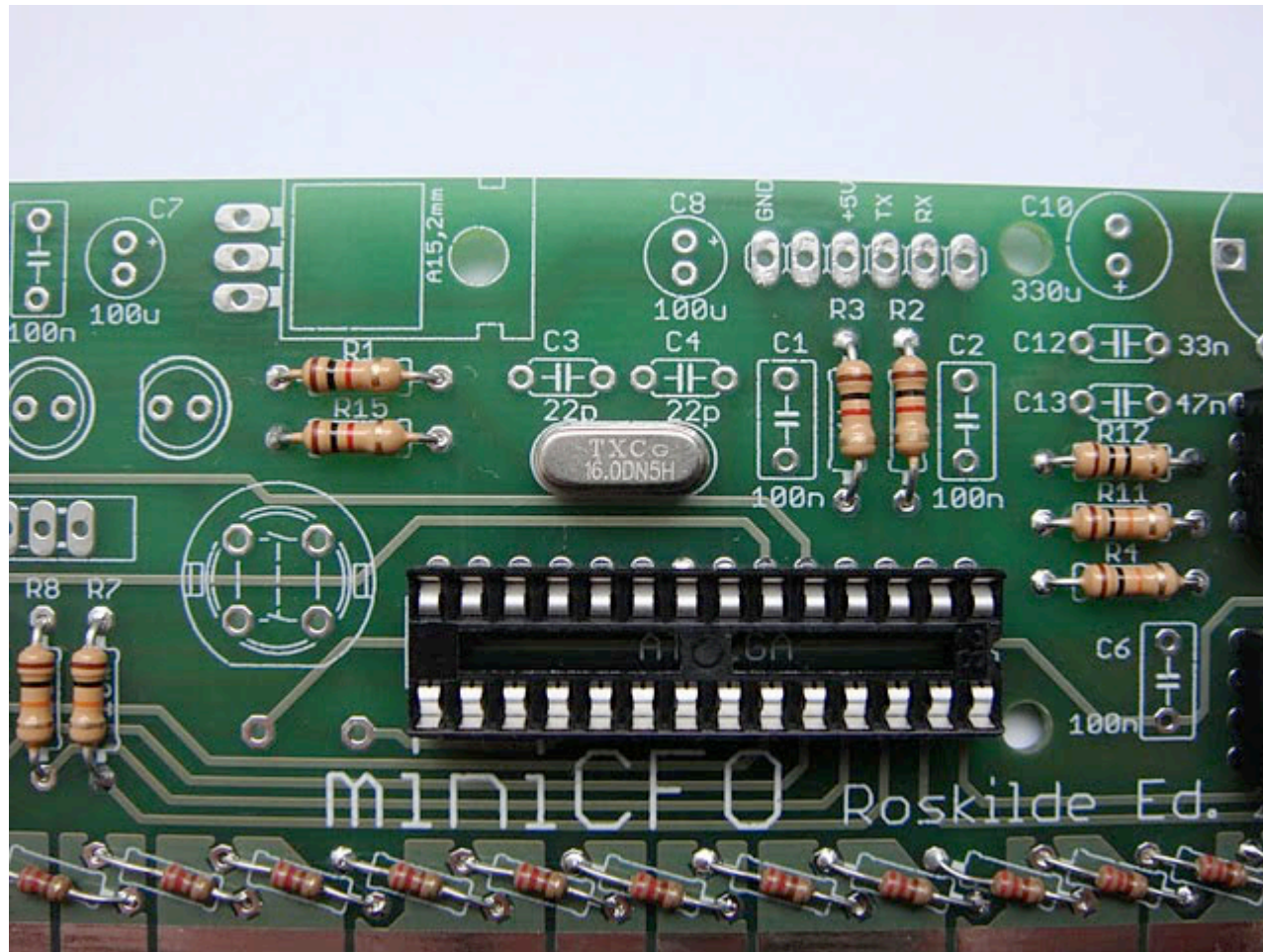


4) solder the 10 Ω and the 330K Ω resistors (R12 and R10 respectively)

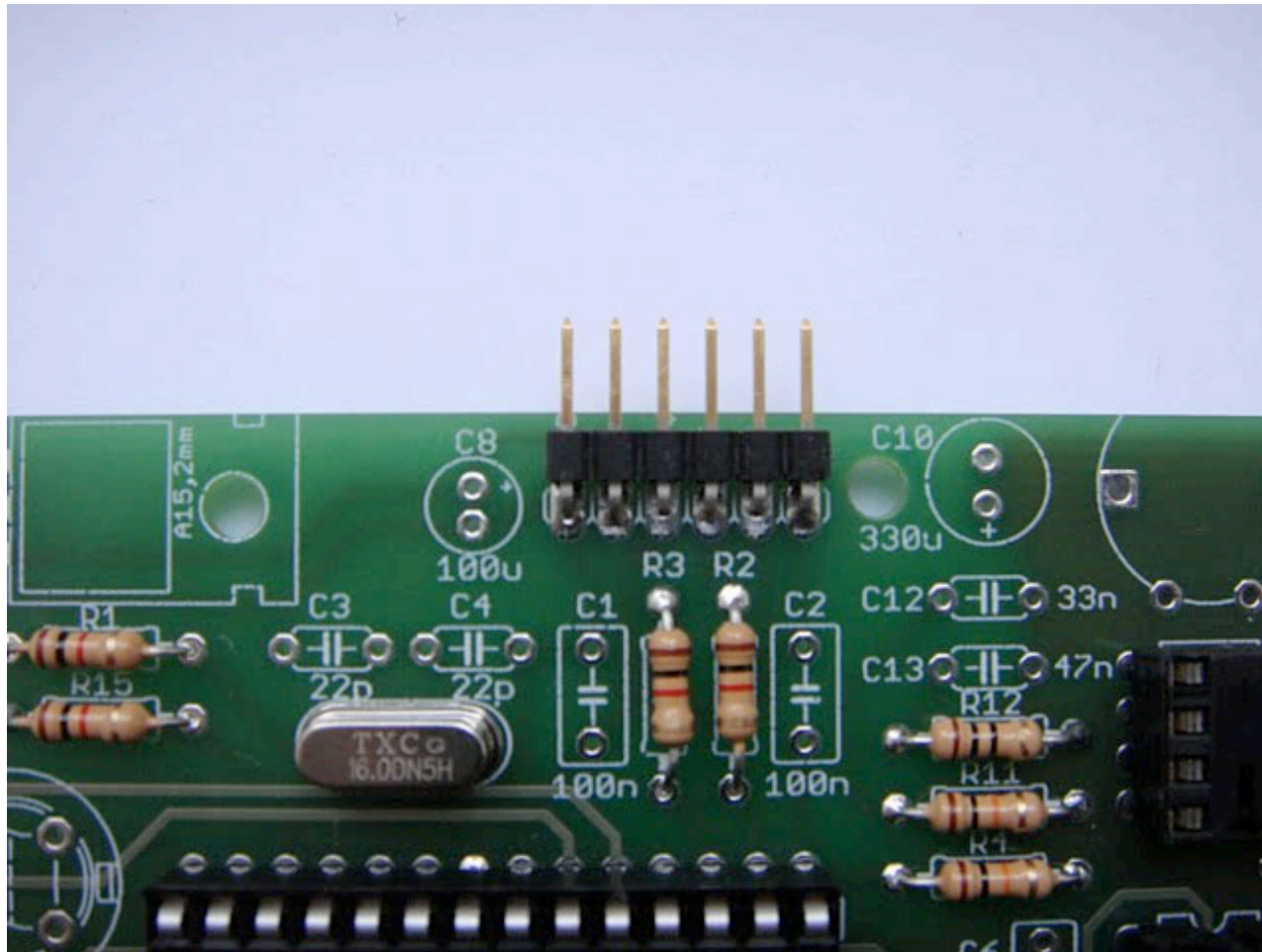




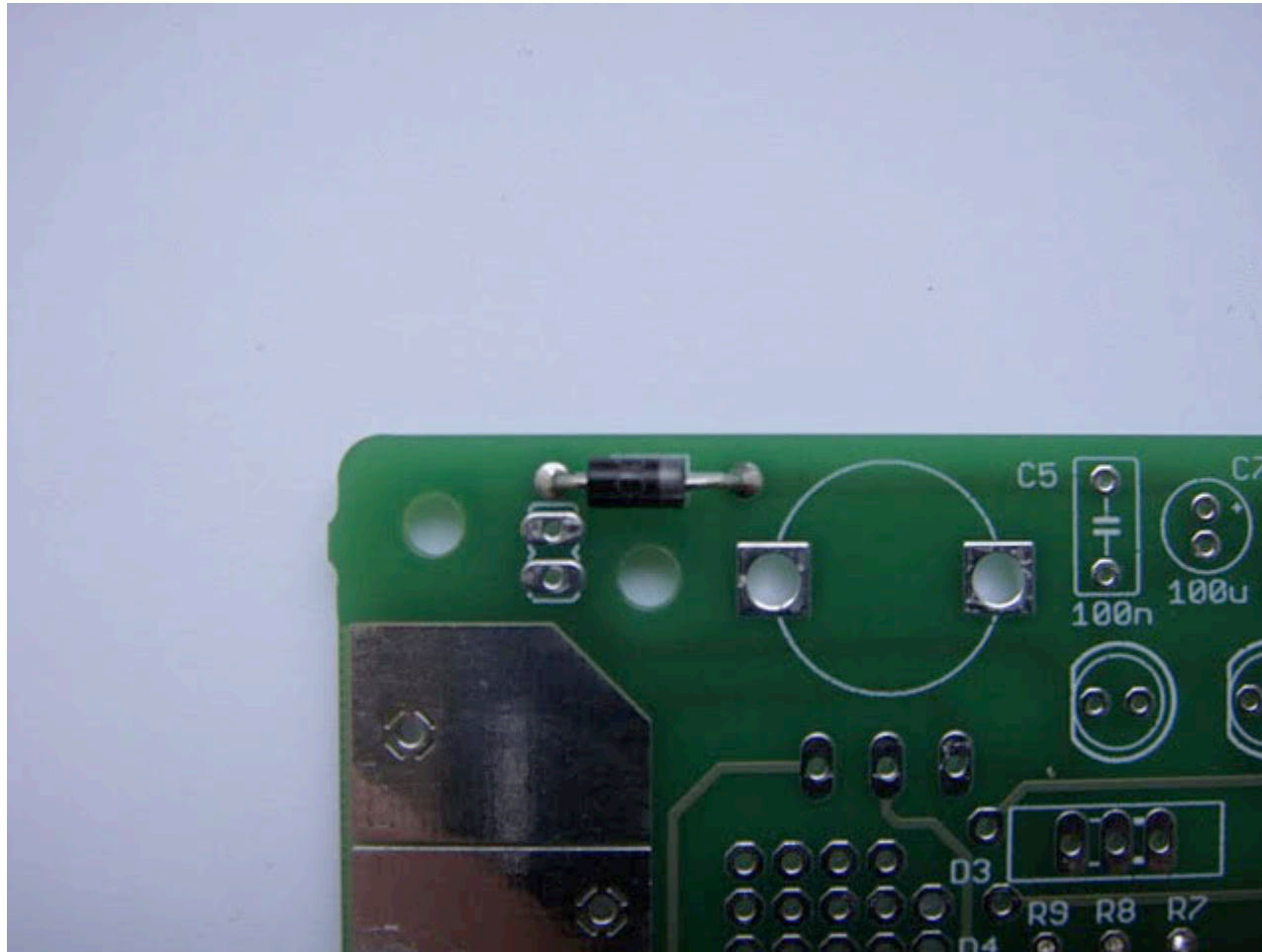
6) Solder the oscillator. It doesn't have a direction, but it's nice if the text fits with all the rest :)



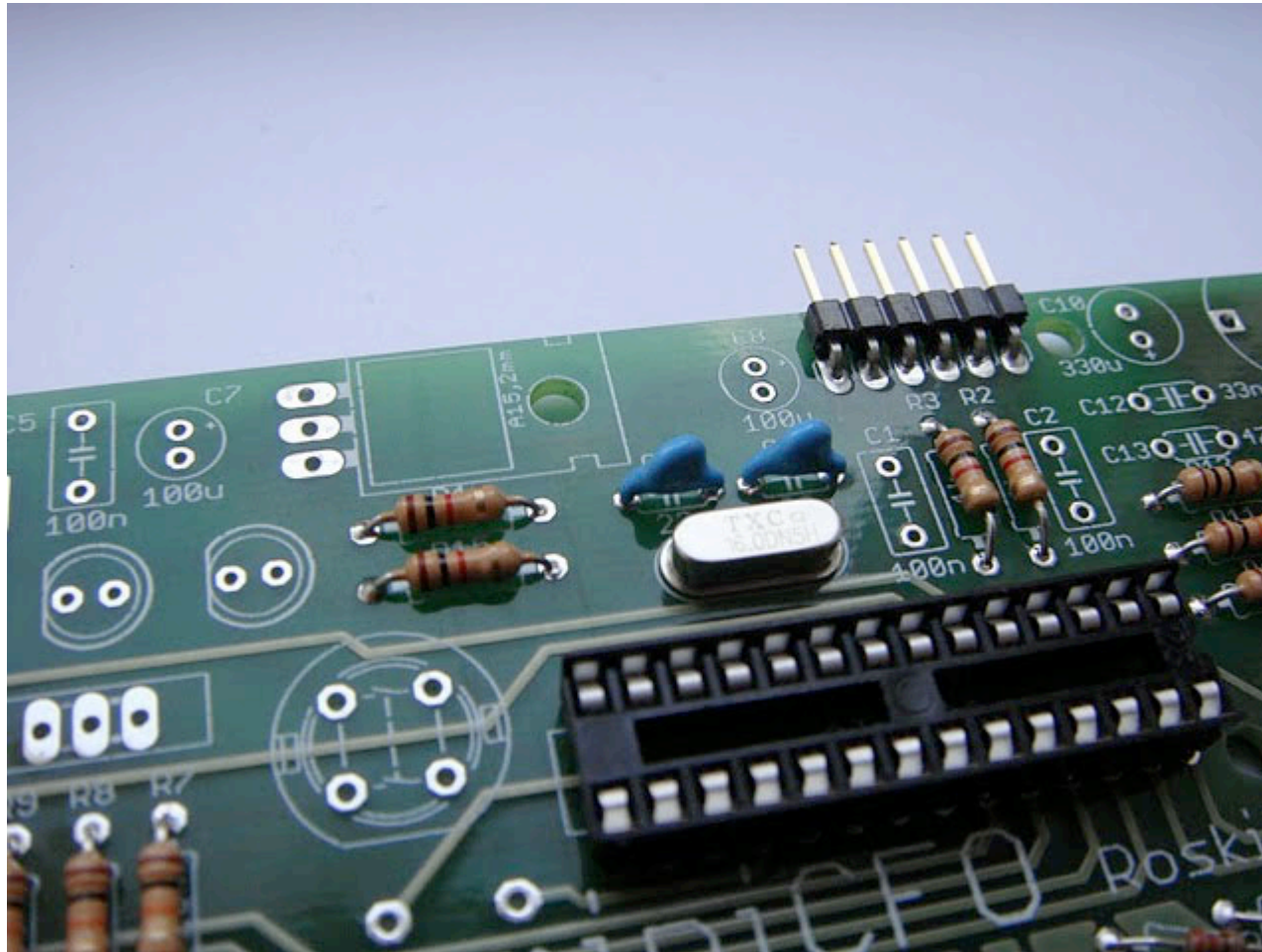
7) Solder the 6 pin, angled male header.



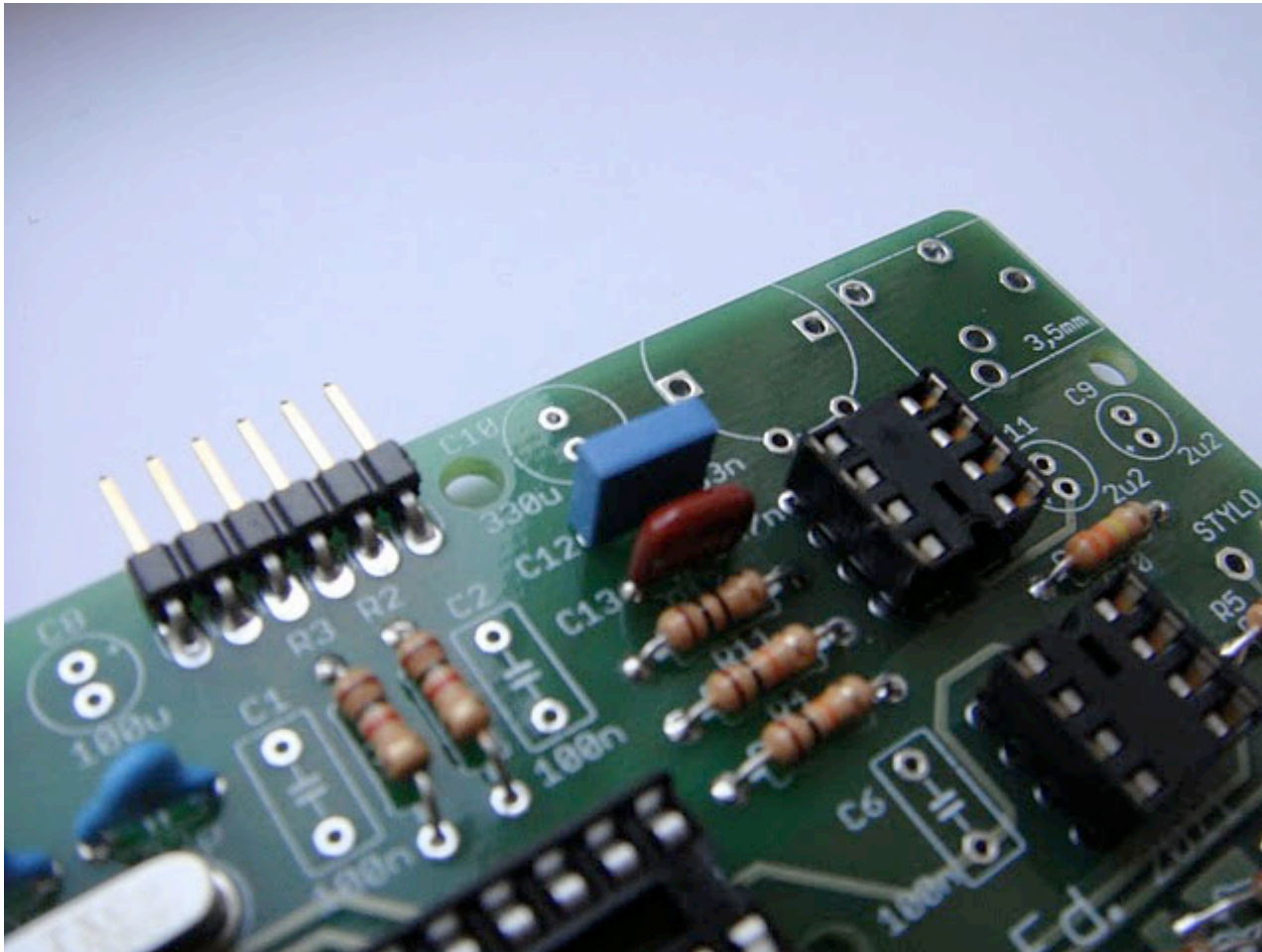
8) Solder the diode (1N4001). Watch the direction, make sure the white/grey end of the diode is to the right, where there is a white line on the silkscreen.



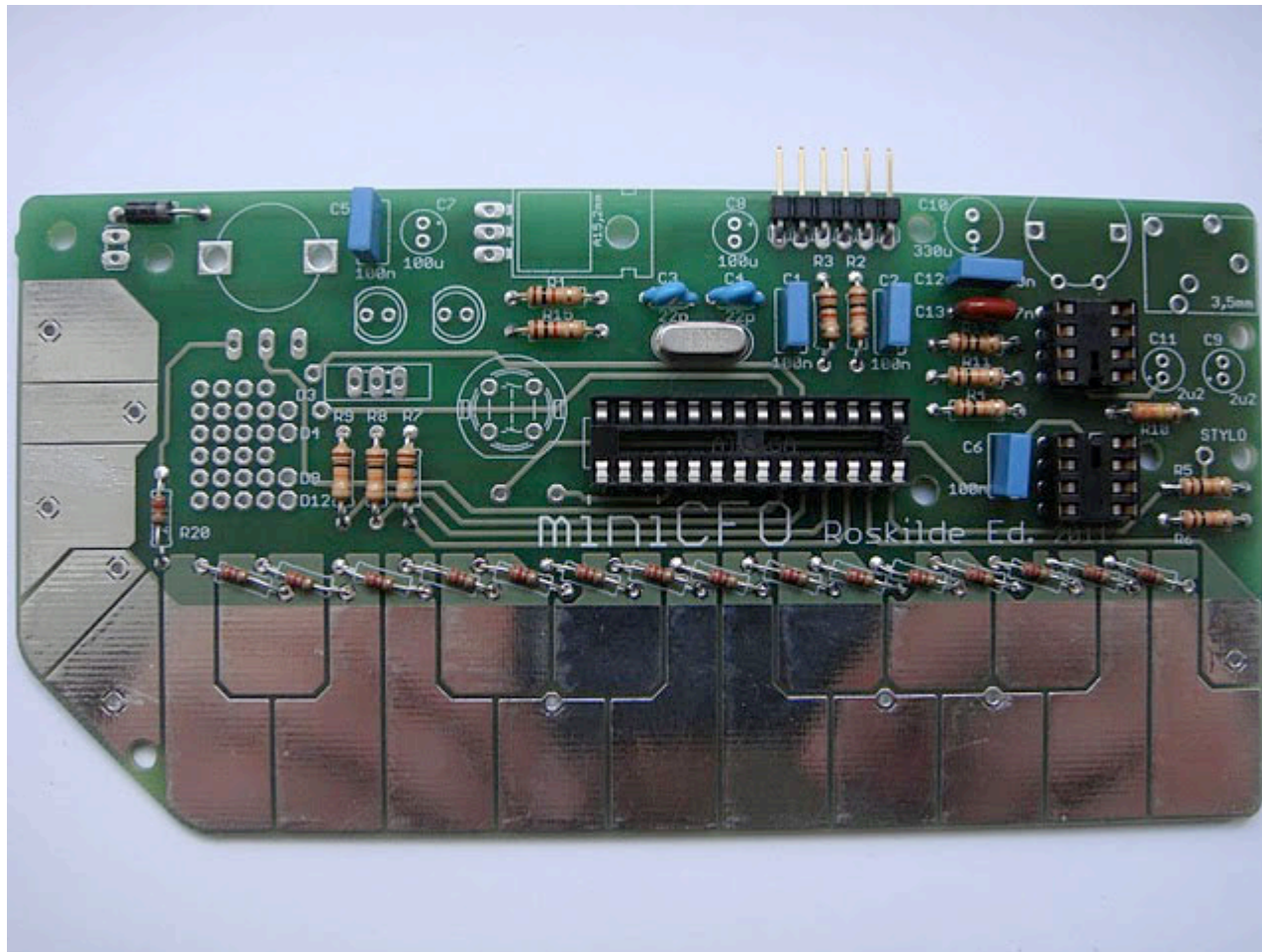
9) Solder the two 18pF capacitors (C3 and C4) above the oscillator. By a mistake there is written "22p" on the silkscreen, although the capacitors are 18pF.



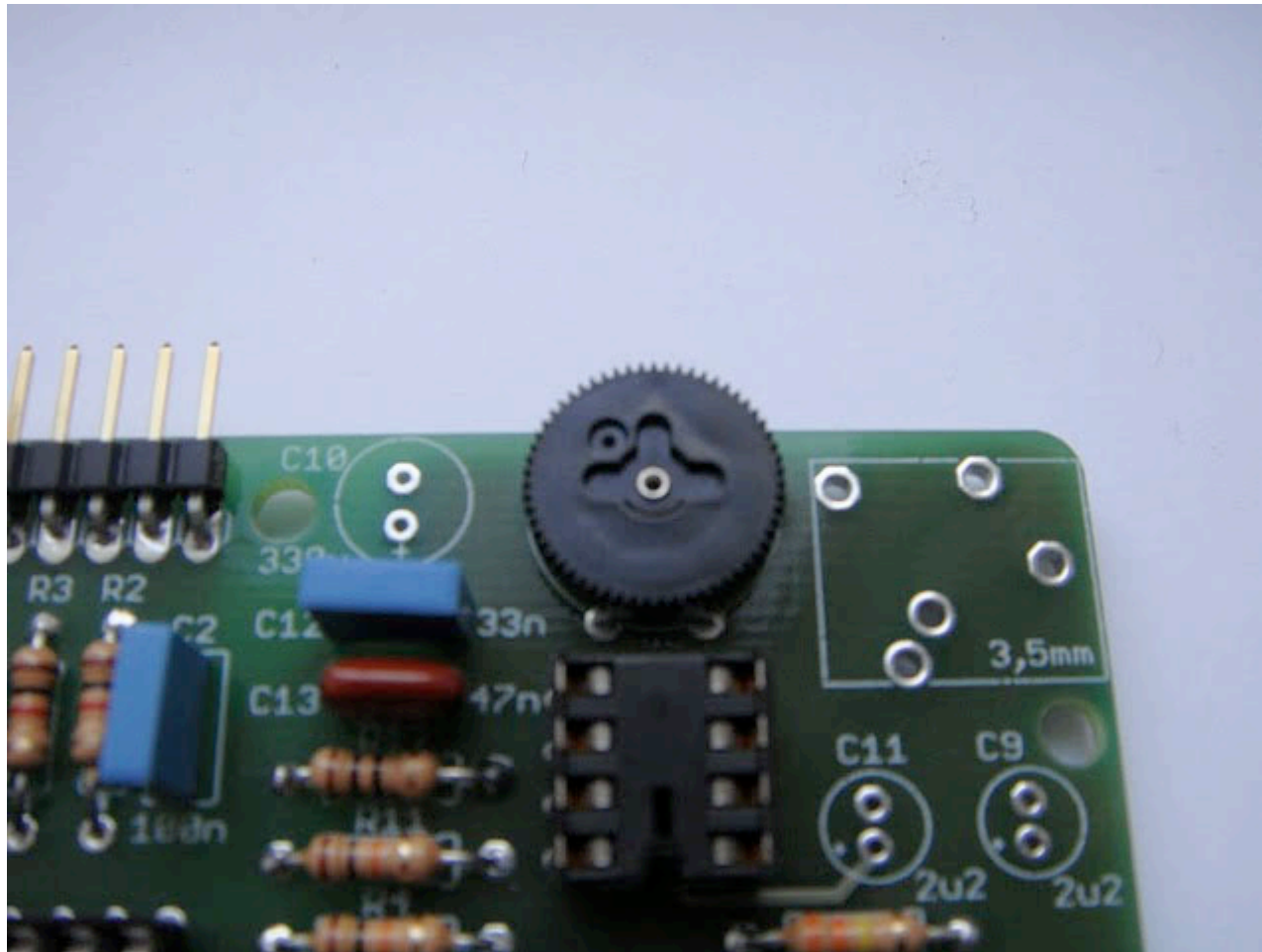
10) Solder the 33nF and 47nF capacitors (C12 and C13). The 47nF capacitor (C13) is the red one - you can't miss it. The 33nF capacitor (C12) looks almost identical to the 100nF capacitors we will use in the next step. They are the same blue colour and have the same size. You should be able to make out a small "33n63" on the proper 33nF one here, and a small "u1K63" on the 100nF ones.



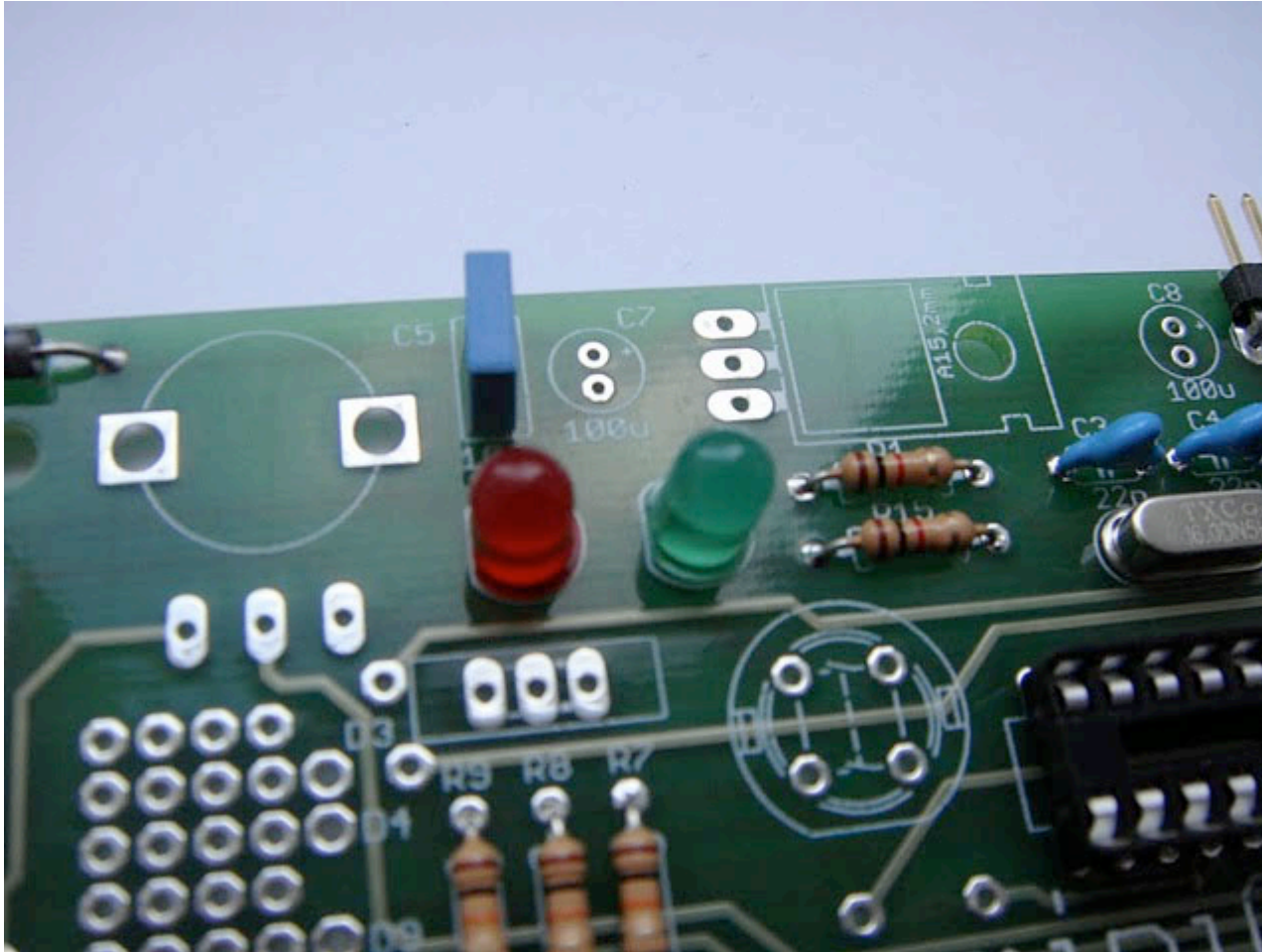
11) Solder the four 100nF capacitors (C1, C2, C5 and C6). As stated above, they are the blue ones that have a little "u1K63" written on them.



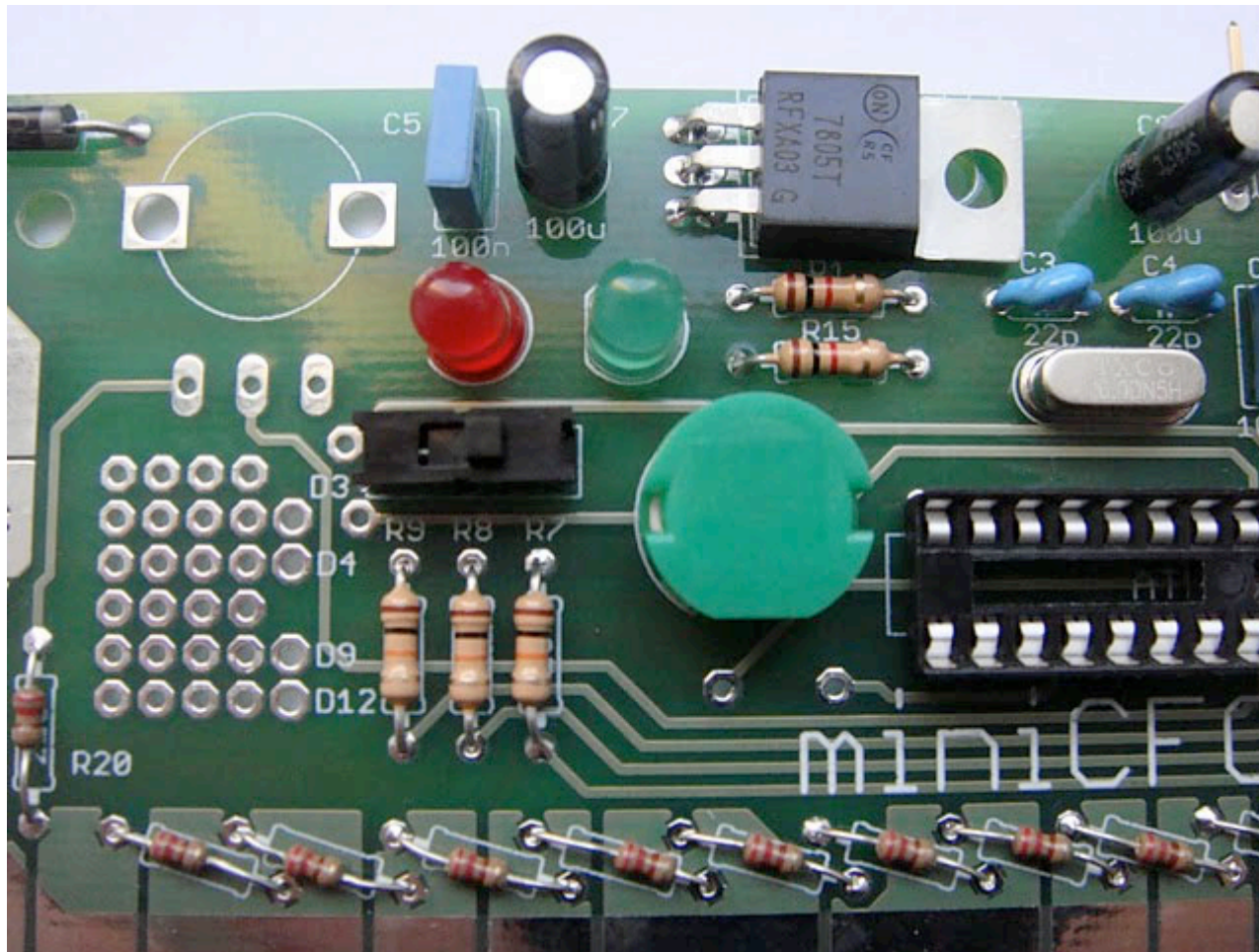
12) Solder the thumbwheel.



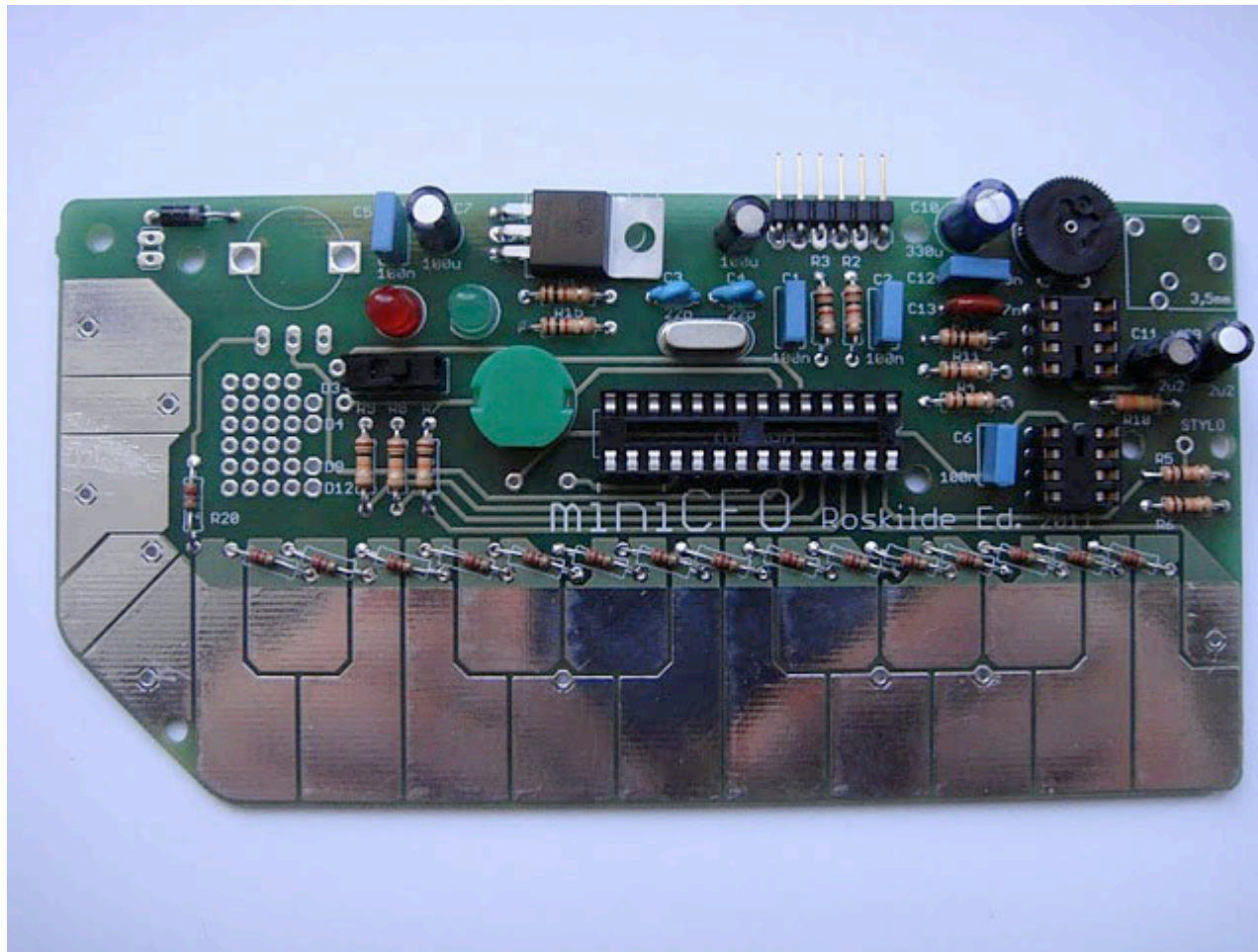
13) Solder the two LEDs. Watch the direction, make sure the short leg (the negative terminal) is facing left. You can also see it by the slightly flattened side on the LED. This should be aligned with the flat side on the silkscreen.



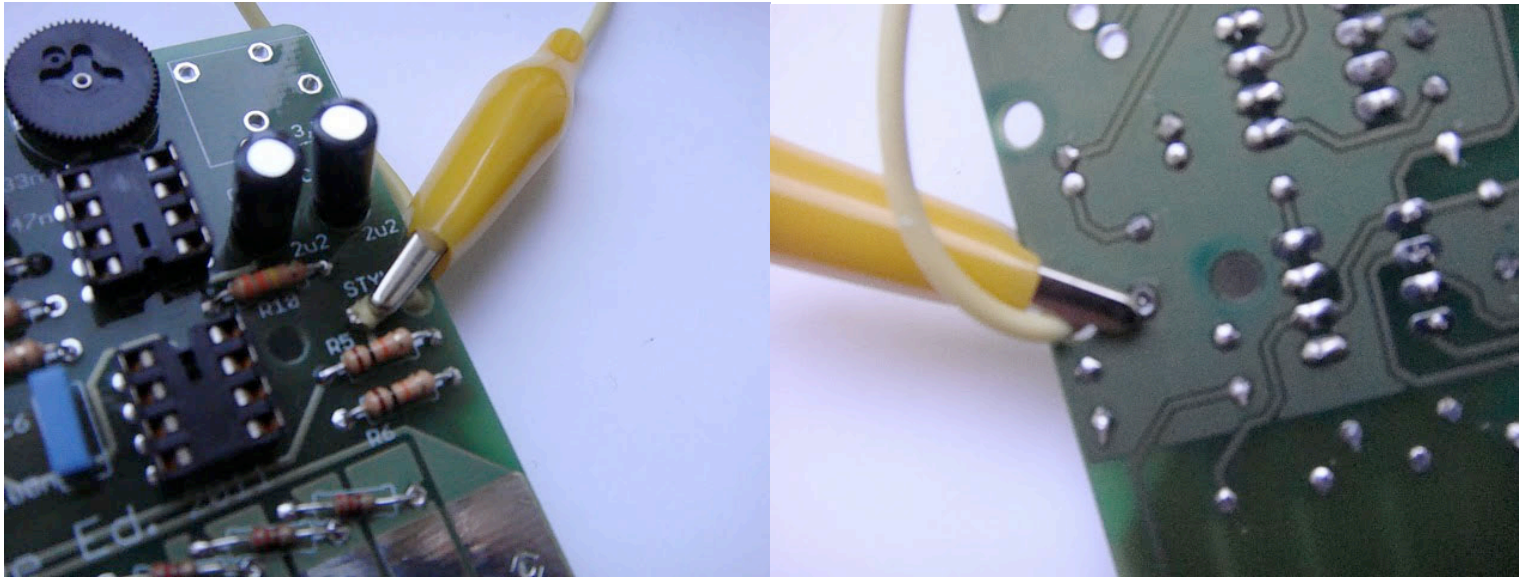
- 14) The next few steps are all on the same photo. First Solder the button (the big green thing). Watch the direction, there is a slightly flattened side on it (a little like the LED) which should be aligned with the flat side on the silkscreen, facing down towards the "keyboard".
- 15) Then solder the slider switch (the little black plastic thingy with the tip that slides from side to side :D). No special direction.
- 16) Lastly solder the 5V regulator. It's the black thing with three legs and a metal top with a hole in it. Make sure it's positioned like the photo.



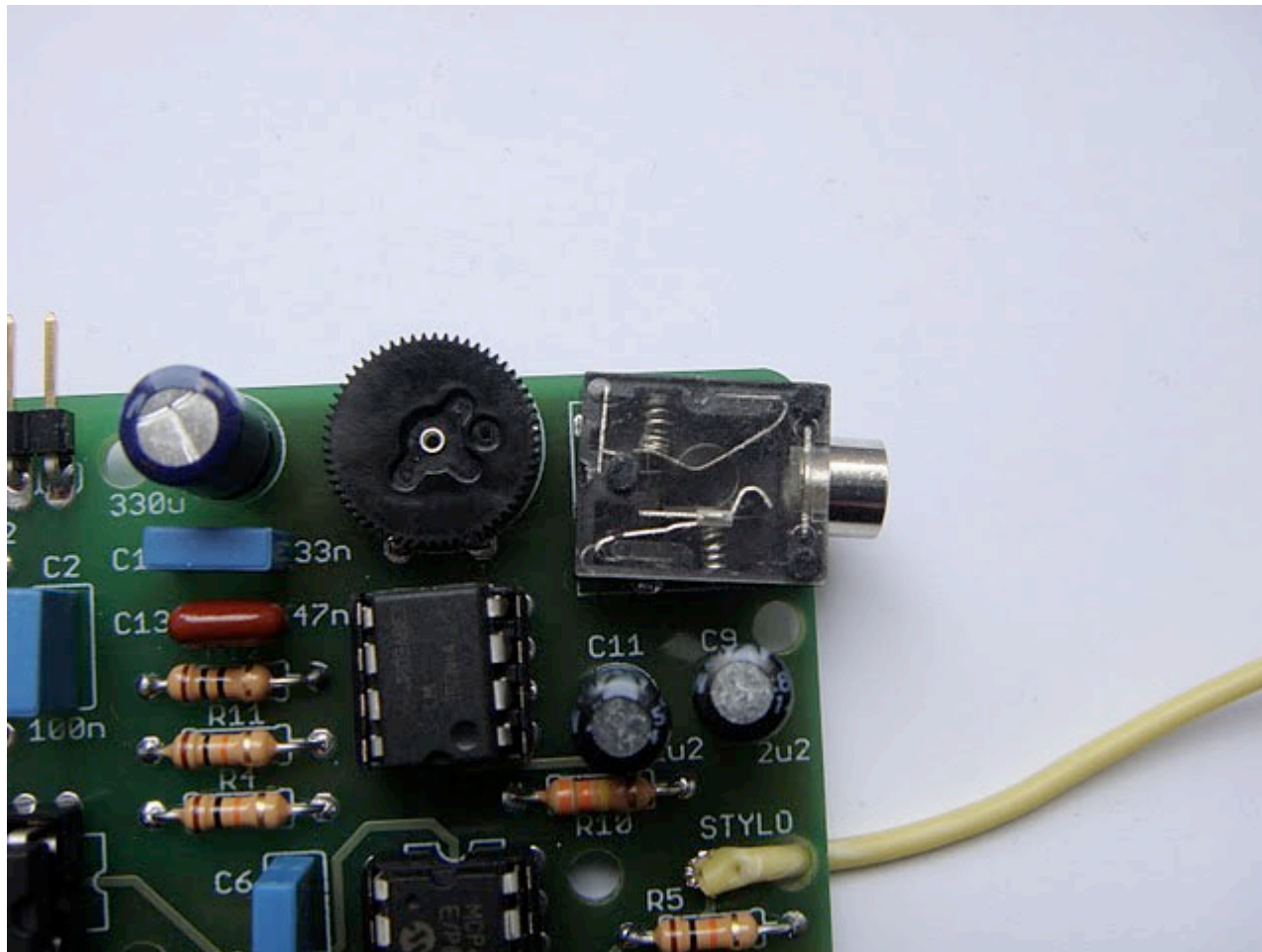
17) Solder the the electrolytic capacitors: two 2.2 μ F (C9 and C11), two 100 μ F (C7 and C8) and one 330 μ F (C10). Watch the direction, make sure the white line on each capacitor is facing AWAY from the little "+" (plus) on the silkscreen. That means the two 2.2 μ F capacitors (C9 and C11) and the 330 μ F (C10) are facing the white line upwards, AWAY from the "keyboard". The other two (C7 and C8 at 100 μ F) face the white line downwards, TOWARDS the "keyboard". It's pretty important to get this right, because we otherwise may not get sound :)



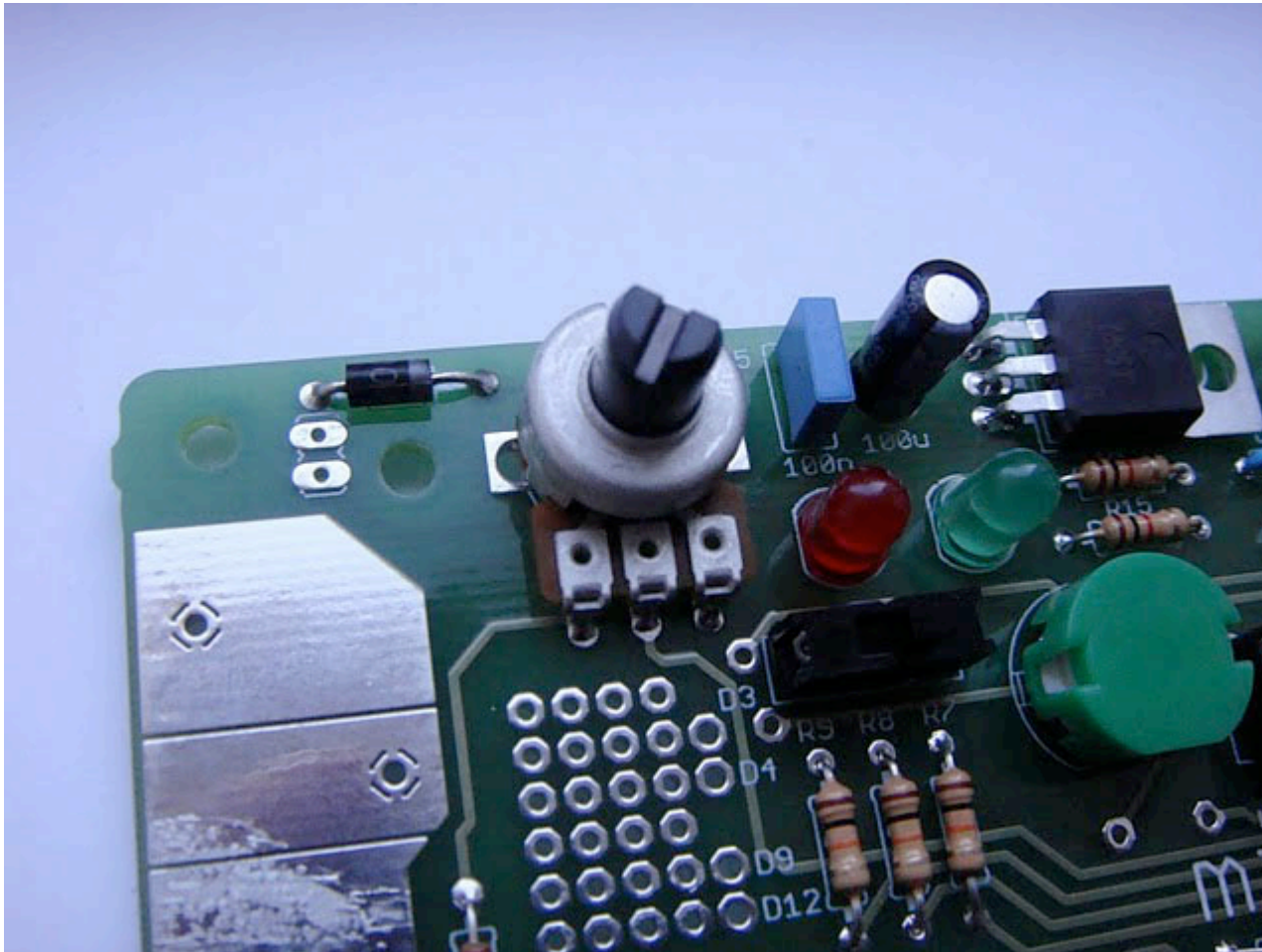
18) Solder the alligator stylo cable to the board. Pass the stylo cable through the hole from the backside and put the stripped wire into the solder pad under the S in "STYLO". You can use the alligator tip of the cable to hold the cable into place when soldering. Make sure not to solder the tip to the board :) You can of course also pass the cable from above through the hole, and solder the stripped wire from the top side, if you feel like a true experimental interaction designer :D



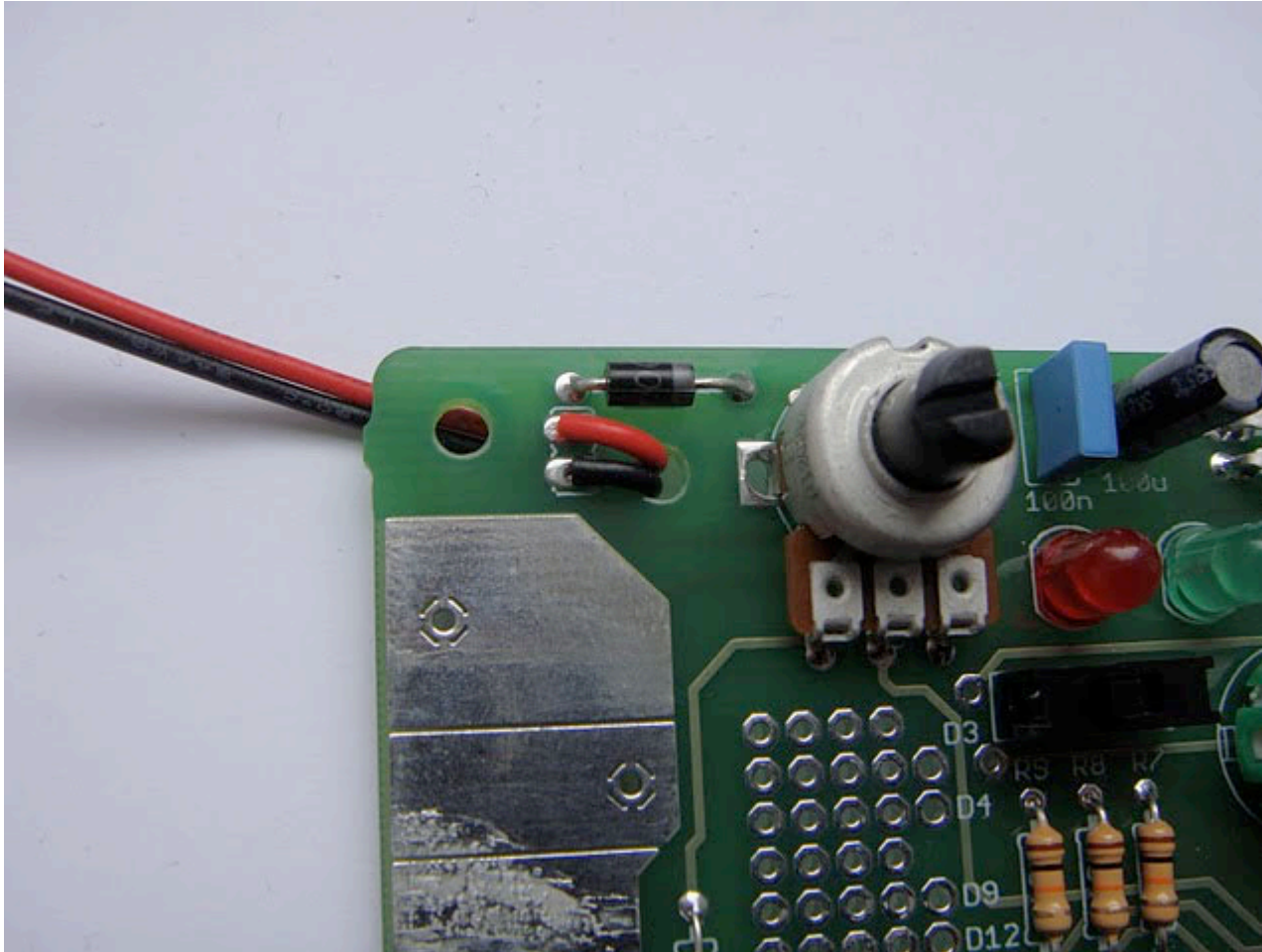
19) Solder the minijack socket. With the sockets we could get for the workshop at Roskilde, you have to cut one of the terminals (Hence the twisted position). Grab hold of one of us, so we can show you which one. The holes here are big, and we need a lot of solder, so don't be afraid to fill up the hole. It adds mechanical strength to resist the forces when you plug and unplug your minijacks.



20) Solder the potentiometer. When the potentiometer has been clicked into place, grab a set of pliers and bend the "feet" up under the board. Make sure to also apply generous amounts of solder where the "feet" touches the solder pad (the "rim" of the hole), to add mechanical strength.



21) Solder the 9V battery plug cable in the same way as the stylo cable. Make sure the red cord goes to the solder pad closest to the diode.



22) Put a knob on the potentiometer. We don't have a photo of one, but you should be able to figure it out. (Hint, it is the only part left!)

23) You are now done! Enjoy the look of your masterpiece, possibly make it pose for a few rockstar photos, before we start uploading code to see if it all actually works :D That part is a story for another tutorial.

