# SMD Skull KIT - Assembly instructions

There are many tutorials and videos of SMD soldering available on internet so have a look out there first if you want to learn more.

My [preferred](#) method is to put a little dab of solder on one of the pads and then grab the part with a pair of tweezers, position the part on the pad and then heat up the solder again while still holding the part with the tweezers. I then solder the other pad with the iron and solder as it would be any normal through hole part. When the part have cooled down a bit I then touch up the first pad with a little bit of fresh solder again to make it look nice. There's a YouTube video demonstrating this technique at http://goo.gl/xHdjDj

By first soldering all the SMD parts at the back of the pcb it can lay flat at the table as long as possible. You don't want it to wiggle around while soldering. So start with the two transistors Q1 and Q2. Put a little dab of solder on the top pad on the PCB and hold down the transistor in position and reheat the solder to make it stick. Then solder the two bottom pads and finally touch up the top pad again. The transistors must be put in the correct orientation, but there's only one way to fit them on the PCB so that should not be a problem.

Then solder the R1 and R2 270 ohm resistors (marked 271). Followed by the 2.2 Mohm (marked 225) R3 and R4 resistors. Finally solder the two capacitors C1 and C2. The resistors and capacitors are not polarized and can be put in any orientation.
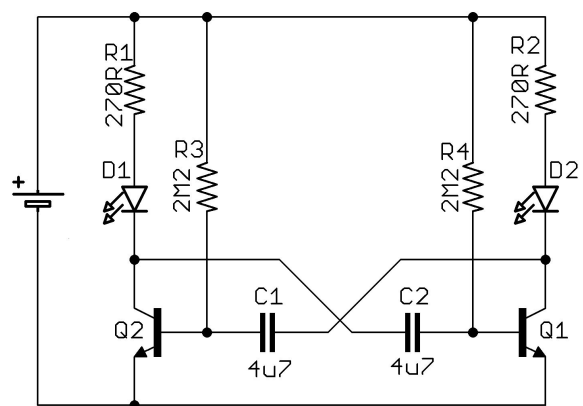
Flip the board over to solder the two LEDs. They *must* be soldered in the right orientation or they won't light up. If you look closely at the LEDs there's a small green dot at one side - that is the cathode/negative side. The LEDs should be soldered so that the green dot is towards the edges of the PCB. Solder the LEDs the same way as the other parts.
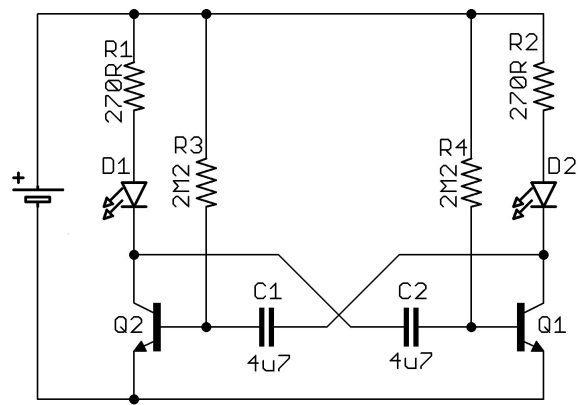
Flip the PCB over to the backside again and insert the coin cell battery holder. Make sure the opening is towards the top of the PCB and that the tab at the at the bottom of the holder is not touching Q1/Q2. If the holder is inserted straight it should not be any problem. Solder the holder with a fair amount of solder to keep it securely in place.

Now insert a CR2032 battery (not included due to international shipping regulations) and the LEDs should start flashing alternately. A CR2032 should keep the LEDs flashing for at least 10 days. If they are not flashing check that all the solder joints looks ok and that the small green dots on the LEDs are indeed toward the edges of the PCB.

If you have any comments or questions please contact me at mats.engstrom@gmail.com.