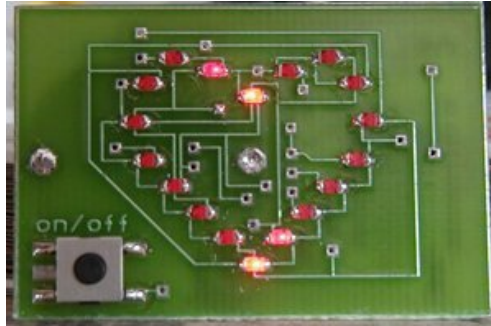


AntiKippenLights-Mini Construction Kit

Contents:

- 1 PCB "AKL-Mini Rev. 1.1"
- 1 Battery CR2032
- 1 Battery Holder for CR2032
- 20 LEDs red (0805)
- 1 Push-button (SMD)
- 1 Controller ATtiny2313-20AU
- 6 Resistors 47 Ω (0805)
- 1 Capacitor 100 nF (0805)

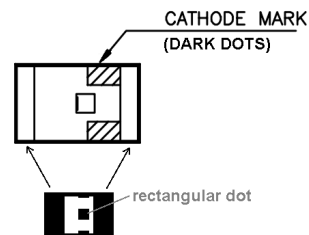
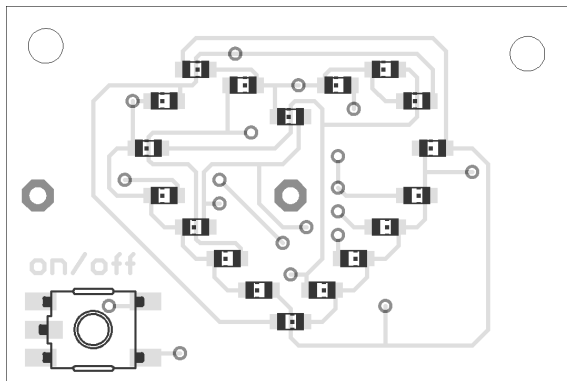


SMD Soldering Advice

To solder the SMD components, tin only one of the pads, then grab the component with tweezers, re-heat the tinned pad and slide the component in sideways. When the component is aligned properly, remove the soldering iron, let the solder joint cool down and solder the rest of the pins. Solder bridges between adjacent pins can be removed with desoldering wick or by heating up the solder joint, then quickly knocking the board against the table (with the heated solder bridge facing down). For detailed, illustrated instructions, see <http://talkingelectronics.com/projects/SurfaceMount/SurfaceMount-P1.html#table2>

It is recommended to solder the components in the order listed below.

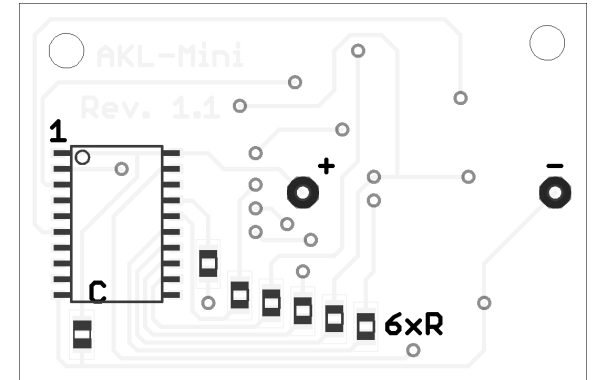
LEDs: The orientation is important for the LEDs. You can see two small black dots inside the LED on one side, the same side the arrow on the bottom of the LED is pointing to (cathode). This side must face in the direction of the rectangular dot for that particular LED on the image below. Don't solder too long on the LEDs, they will have reduced brightness if they become too hot during soldering. The kit contains two spare LEDs in case you break or lose some of the LEDs.



(please turn over)

Resistors: The resistors are the small (SMD size 0805 = 2 mm x 1.2 mm) rectangular components marked with "470" or "47R0". Solder the six resistors to the locations next to the label "6x R" on the circuit board. The orientation doesn't matter.

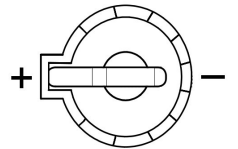
Capacitor: The capacitor is the small (size 0805) brown component with no marking. Solder it to the location below the controller (labelled "C" on the board). The orientation doesn't matter.



Controller: The controller has a small dent in one corner which must face in the same direction as the small circle on the image above.

Push-button: Solder the push-button to the intended location on the board (on the LED side). Orientation is not important if your push-button has only 4 pins, the fifth pad remains unused. 5-pin push-buttons will only fit in one orientation.

Battery Holder: Insert the battery holder from the bottom side of the board into the two holes and solder from the top (LED side). For the correct orientation, please refer to the "+" and "-" signs on the board and the image to the right.



Insert the battery (the side with text on it visible) and press the push-button to switch it on. If some LEDs light up most or all of the time, it is likely they are populated the wrong way around. Desolder them by heating the two pads in quick succession until you can push the LED away with the soldering iron's tip, remove any remaining solder with desoldering wick and solder the LED again (rotated 180 degrees).

If you don't want to use the on/off-button, you can solder a bridge between controller pins 9 and 10 (start counting at the pin with the number '1' next to it and count downwards).

Questions? Problems? Comments?

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Project webpage

German: <http://wiki.blinkenarea.org/index.php/AntiKippenLights-Mini>

English: <http://wiki.blinkenarea.org/index.php/AntiKippenLights-MiniEnglish>