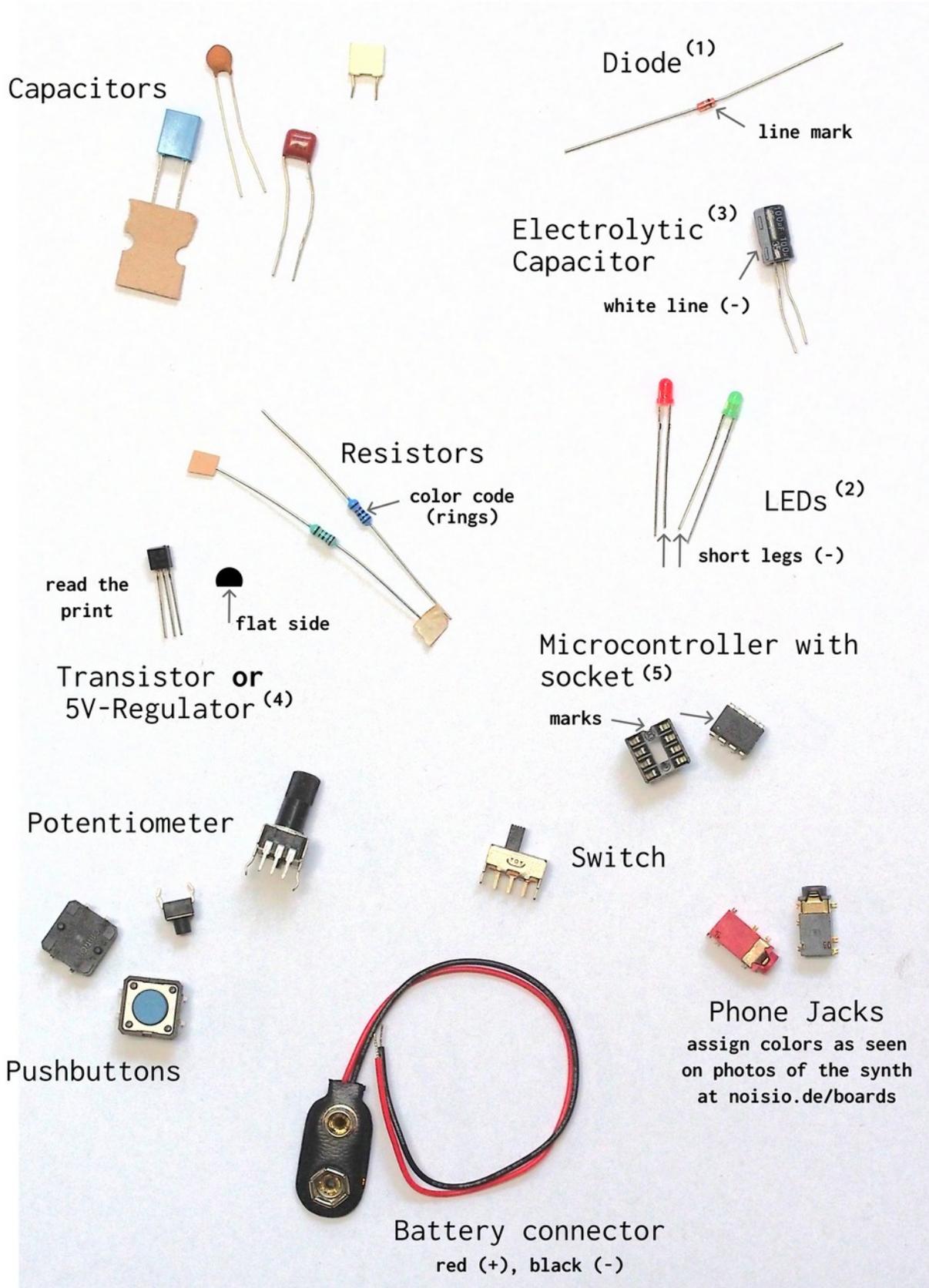


Tips + general building instructions for **noisio** kits

1. Do you know **how to solder**? If not - it's easy to learn. There are many instructions on the Internet. Even better: take part in a workshop.
2. **Familiarise yourself with the components** (see page 2).
3. Find the intended location on the **IBOM** (interactive component list at noisio.de/boards), as well as using the **pictures and labels on and under the board**.
4. Determine the **component values** by measuring or reading the imprint
 - * **Resistors** have **colored rings**. Look for a calculator or a table for the color code of resistors on the Internet.
 - * **Capacitors** can be **labeled in different ways**, e.g. the value 100nF as: 104, 0.1 or 0.1uF.
5. Start soldering with the **smallest and flattest components and move step by step to the larger ones**: Diodes > Resistors > Sockets > LEDs > Transistors > Capacitors > Pushbuttons > Switches > Potentiometers
6. **IMPORTANT**: Pay attention to the correct **orientation of polarized components** - you will find **markings on the circuit board**.
 - (1) **Diodes** are marked with a **ring** on one side.
 - (2) **LEDs**: the **shorter leg (-)** must be in the **square**.
 - (3) **Electrolytic capacitors**: **minus** to the **white stripe** (see print)
 - (4) **Transistors (2N3904)/ V-regulator (78L05)**: look for the **label** on the bottom of the board and the print on the top for the flat side.
 - (5) **IC sockets** have a **semi-circular cut-out** on one side. Only the socket needs to be soldered. The IC is inserted at the end in the same direction.
7. **Extras**: The battery connections must be soldered with the **red cable** directly to the + and the **black cable** to the - (minus) pad on the underside of the circuit board. Shorten the cables accordingly beforehand.

ATKeys: The keys each have two small nipples on the underside. Cut these off flat so that they can be inserted more easily.
8. **Tip**: To achieve **perfect alignment**, solder only one leg of the components with **more than two legs** first, check and align the component again. Then solder the remaining legs.

Parts typically used for noisio DIY-kits and their markings



Have fun!!!

If you have any questions or problems, email me at: contact@noisio.de

Appendix (a)

Top List of most common errors

1. Forgotten or incompletely set solder joints. See point (1) at the top.
Especially at the power sockets on the underside of the board, all 4 points must be well connected to the component.
2. Transistor (2N3904) and 5V regulator (78L05) interchanged or set in the wrong direction. A common mistake and difficult to correct. 5V regulators are sometimes badly labeled, with wild letter combinations and a tiny "05" in between.
3. LEDs placed the wrong way round. A classic...
4. The diodes are inserted in the wrong direction. If you have managed this, you haven't read this far :)
5. Resistors not applied in the right places. A very subtle mistake. Things sometimes work, but not quite as they should.
6. The IC is soldered straight to the PCB. Everything should work, but the chip can no longer be removed and programmed. ATPC and ATBase can still be written with synth programs via the audio bootloader. Leave it as it is.
7. Soldered the IC directly and the wrong way round. Ooookay! ... the part has to go to the doctor. (It's only really happened once so far:)

Appendix (b)

Helpful external links:

Soldering is easy PDF(e.g by Mitch Altman) translated in >20 languages:

<https://mightyohm.com/blog/2011/04/soldering-is-easy-comic-book/>

Wiki by Raumzeitlabor /Mannheim (de): https://wiki.raumzeitlabor.de/wiki/L%C3%B6ten_lernen

Resistor color code kalkulator (en):

<https://www.digikey.de/en/resources/conversion-calculators/conversion-calculator-resistor-color-code>

Table color codes at wikipedia (de):

https://de.wikipedia.org/wiki/Datei:Farbcode_von_Widerst%C3%A4nden.svg