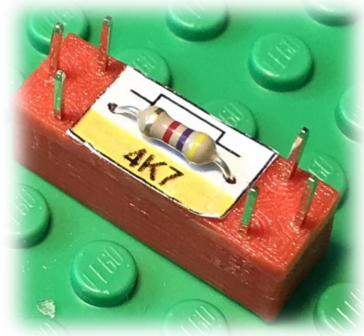
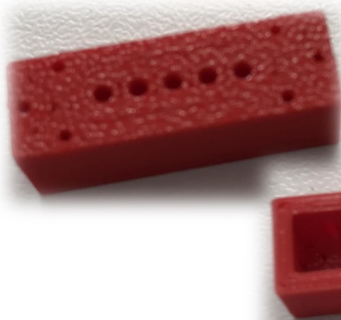


## How To Build A Brick

For to learn how you can construct a brick by yourself please watch the following steps of the construction of a 4.7 kOhm resistor brick as an example.



A resistor brick consists of the following components:



1. The plastic body is defined by the resource file `resource/stl/body_3x1_resistor.stl`. You can produce the body in two ways: a. You can print it with your 3D-printer if you have one, or b. you can upload the stl-file to some 3D-printing service in the internet and order it from there.

2. The board is defined by the resource file `resource/gbr/board_3x1_resistor.gbr.zip`.

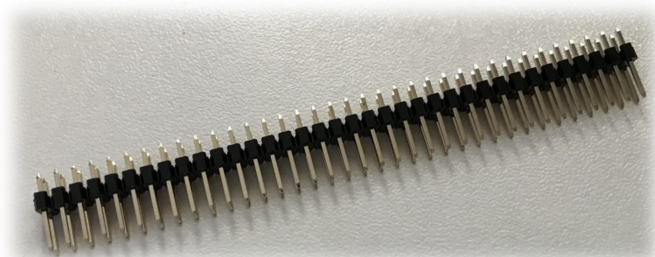
This zip-archieve contains the gerber definition of the board and is suitable for uploading to a board manufacturing service in the internet from where you can order the board.



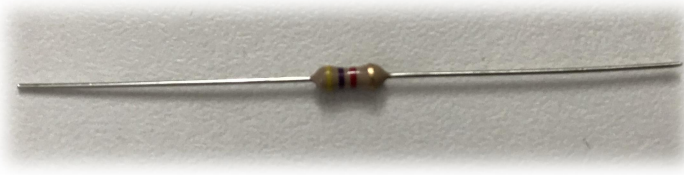
3. Print out the labeling of the brick from `resource/label/label_3x1_resistor.bmp` . A color printer is needed for that. Afterwards you have to use scissors to cut out the resistor picture you need, in our case here the one of a 4.7 kOhm resistor.



4. The 6 connectors are extracted from a standard pin header with straight pins like the one below:  
They have to be bended using a plier and pulled out from the pin header. This step is still somehow unprofessional however I have nothing better by now.



6. Last but not least we need a 4.7 kOhm/250 mW resistor to be mounted on our brick.

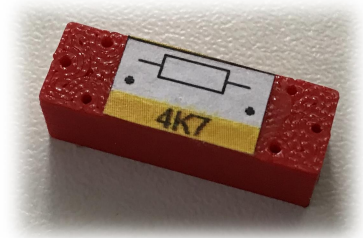


Very helpful tools are

- A good electronics plier and an electronics wire cutter
- A very small electronics chuck
- A good soldering station + tin solder
- A tin snips (if you have to cut off production artifacts from the boards)
- A needle (to pierce the brick labelling)
- Some modeling glue

The steps to create the brick are as follows:

1. Use the glue to fix the label on the plastic body. Wait until the glue has dried.



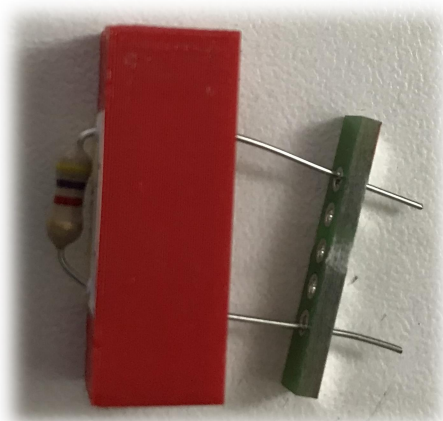
2. Use a needle to pierce the label through the outermost mounting holes of the plastic body. You do this from the lower brick side, because from there you can see where the holes are.



3. Bend the resistor and mount it onto the plastic body (through the just pierced holes).



4. Add the board from below with the pads on the bottom side and put the resistor legs through the appropriate holes of the board. Bend these legs a bit so that neither the resistor nor the board can fall out of the body again.

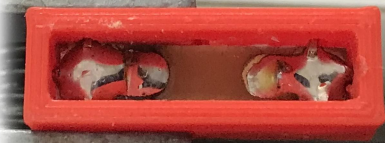






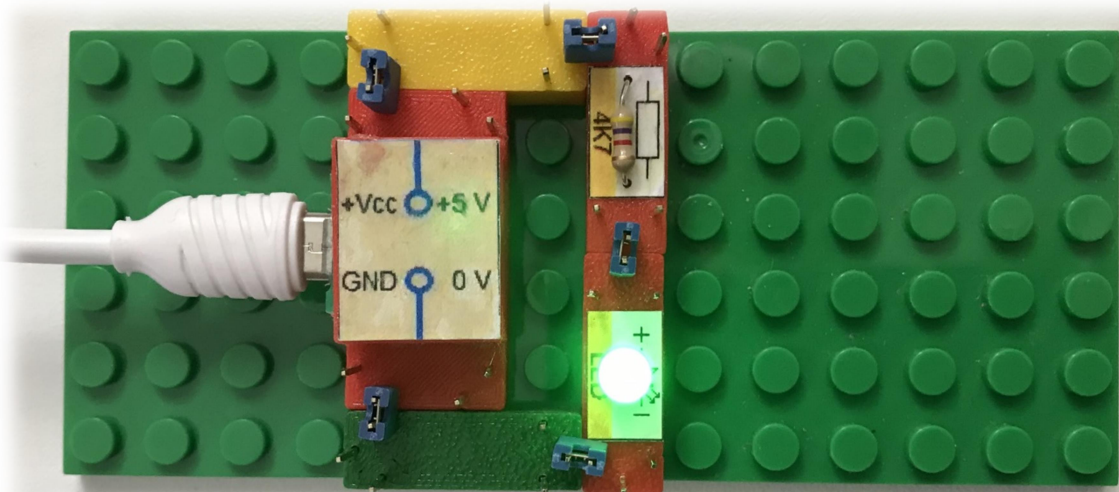
5. Solder the two resistor legs onto the board and cut off what's too long.

6. Use a plier to put in the 6 connectors from below through the appropriate holes of the plastic body. The bended legs of the connectors should lie on the board pads, three connectors on each pad.



7. Solder the connectors to the pads, one solder spot for each three connectors.

That's it!



I hope you like your new brick and produce quite many of them for inspiring projects with your new

# Electronics-With-Bricks

Construction Kit