

Hardware les 2

Solderen

Solderen

=

Verbinding maken tussen
twee componenten

Solderen

=

tin verwarmen waardoor het
smelt - bij stolling verbinding
gemaakt

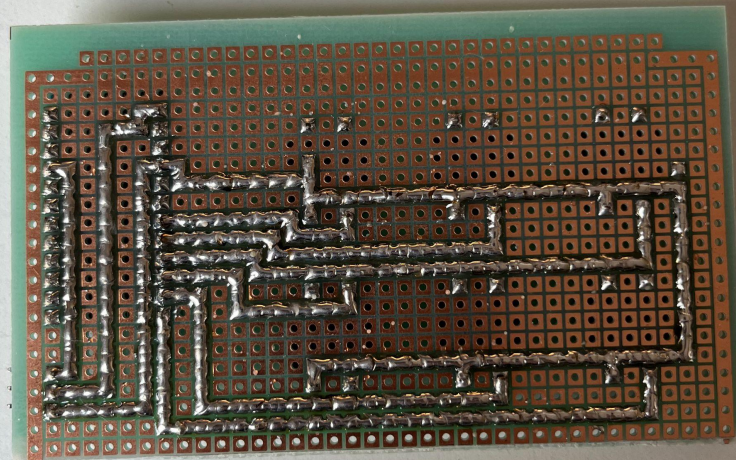
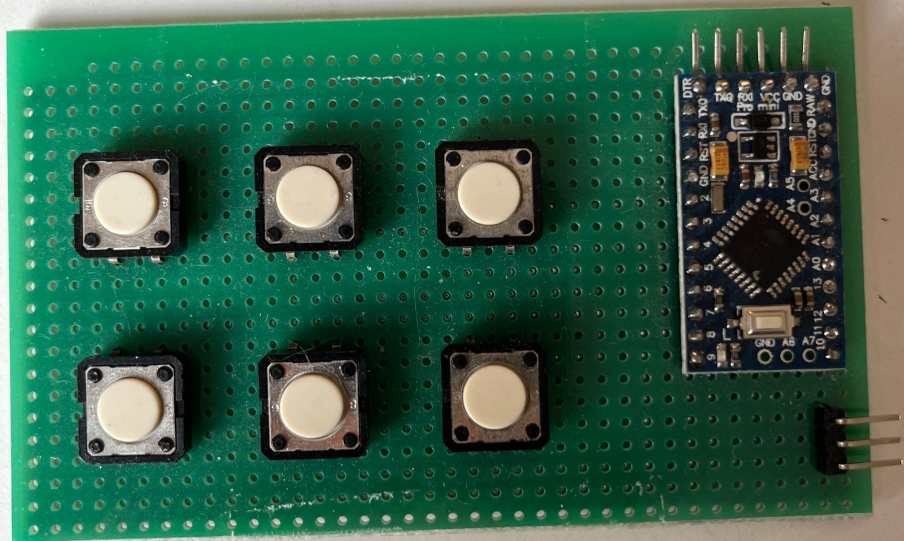
toepassingen

- kabels
- protoboard
- printed circuit board (pcb)

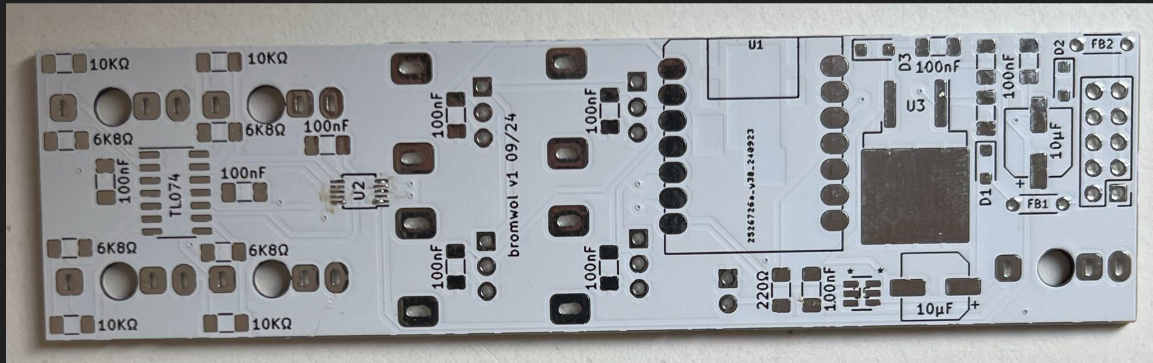
kabels



protoboard



pcb



benodigdheden

- soldeerstation/ soldeerbout
 - soldeertin
 - schoonmaakmateriaal
 - gereedschap:
 - tangen
 - derde hand
 - desoldeerpomp / litze

soldeerstation



soldeerstation

- aan/uit-knop
- temperatuurregeling
 - indicatie-LED
- voeding (Eurostekker achterin)
 - bout in standaard
 - wordt heet!

soldeertin



soldeertin

- twee varianten

- loodhoudend
 - loodvrij

soldeertin

- loodhoudend

- 60% tin, 40 % lood
- relatief lage smeltemperatuur
 - lood is giftig!
 - gebruik afzuiging!
- was je handen na afloop!

soldeertin

- loodvrij

- 99% tin, 1% koper en/ of zilver
 - hogere smeltemperatuur
 - gebruik afzuiging!
 - was je handen na afloop!

schoonmaakmateriaal



schoonmaakmateriaal

- zorg dat de bout schoon blijft
- verwijder tin en andere resten

tangen



derde hand



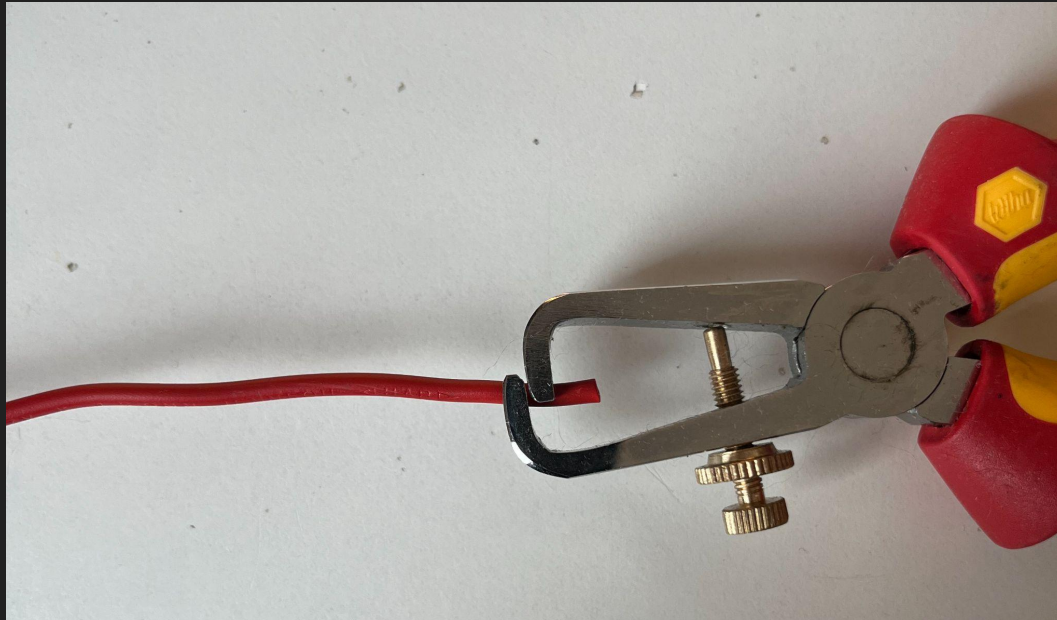
desolderen



proces

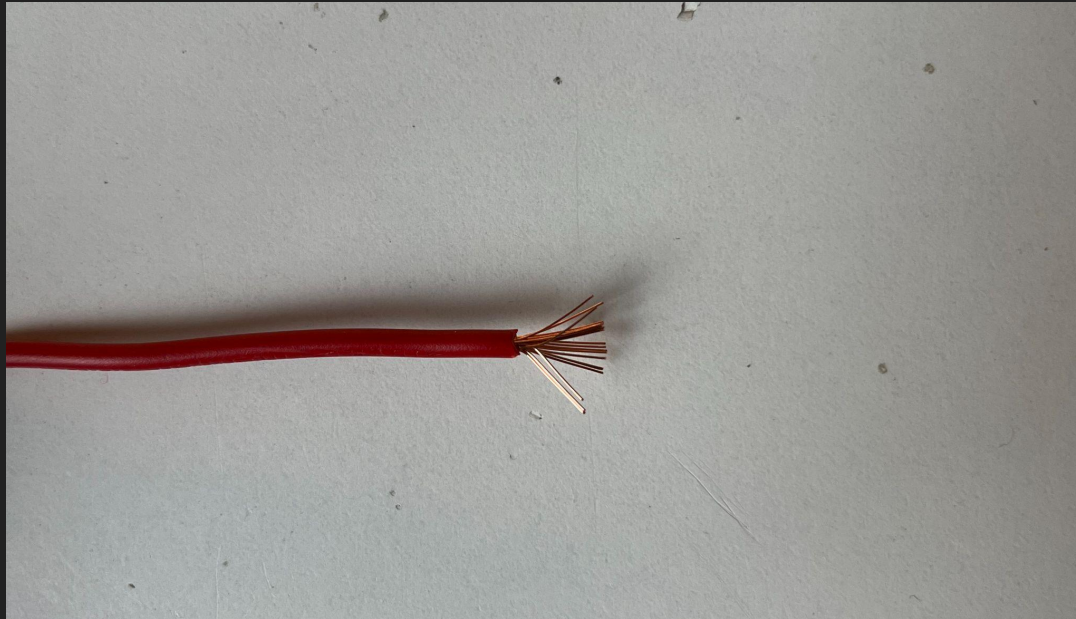
- kabel/ draad
- protoboard

kabel/ draad strippen

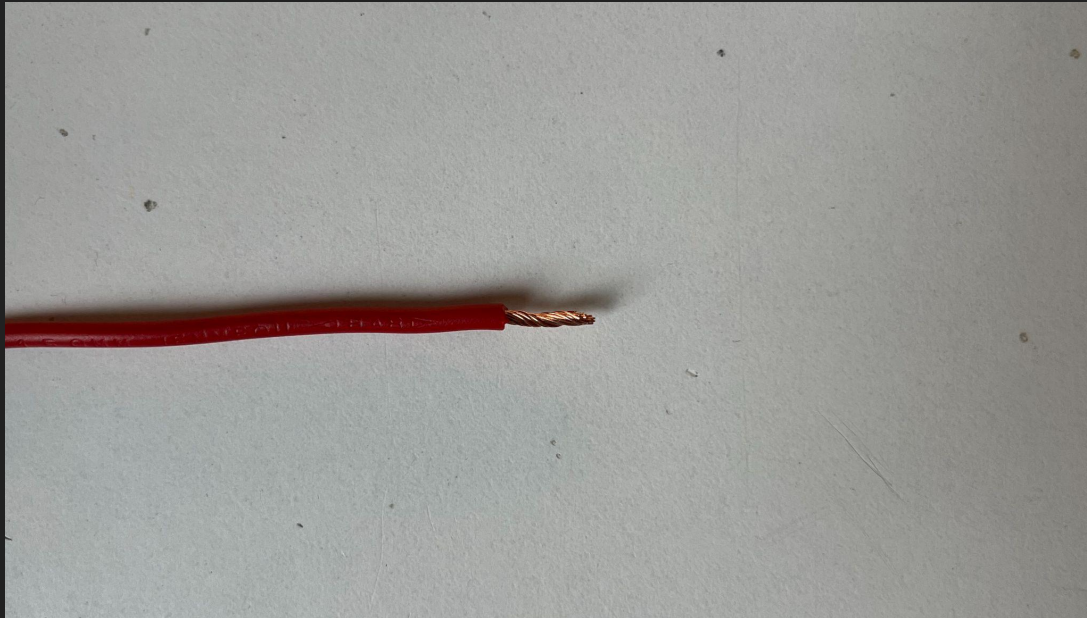


kabel/ draad

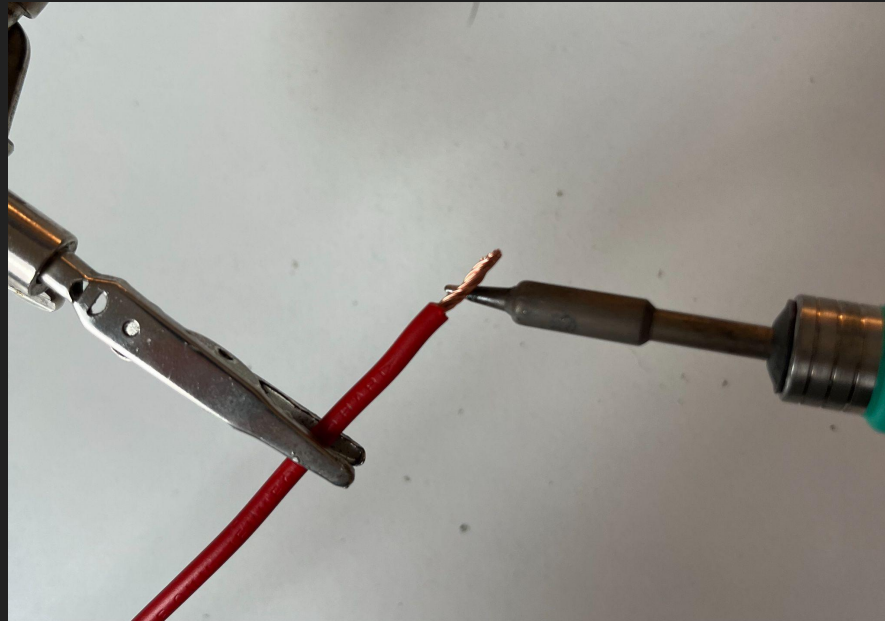
‘zachte’ kern vs ‘harde’ kern



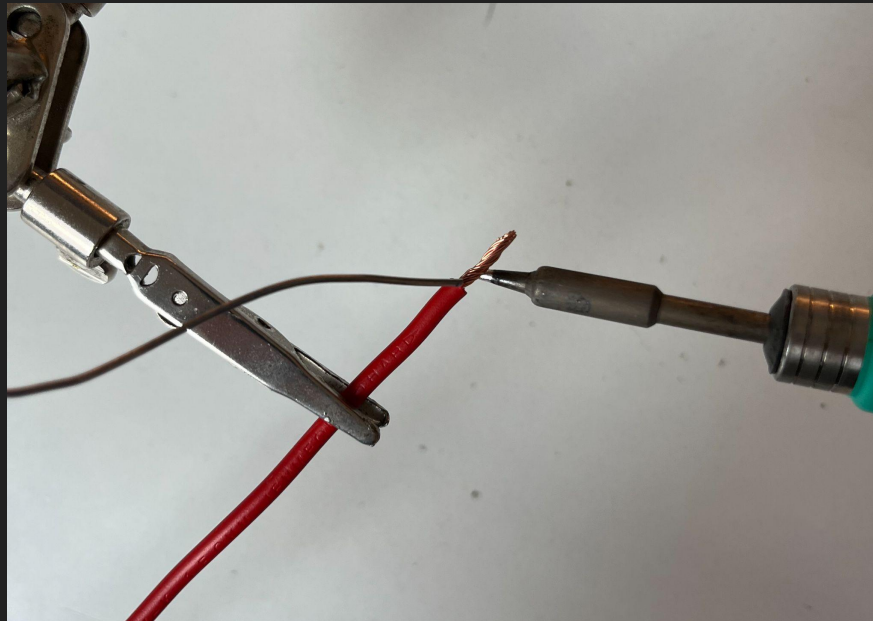
kabel/ draad samenbinden



kabel/ draad vertinnen

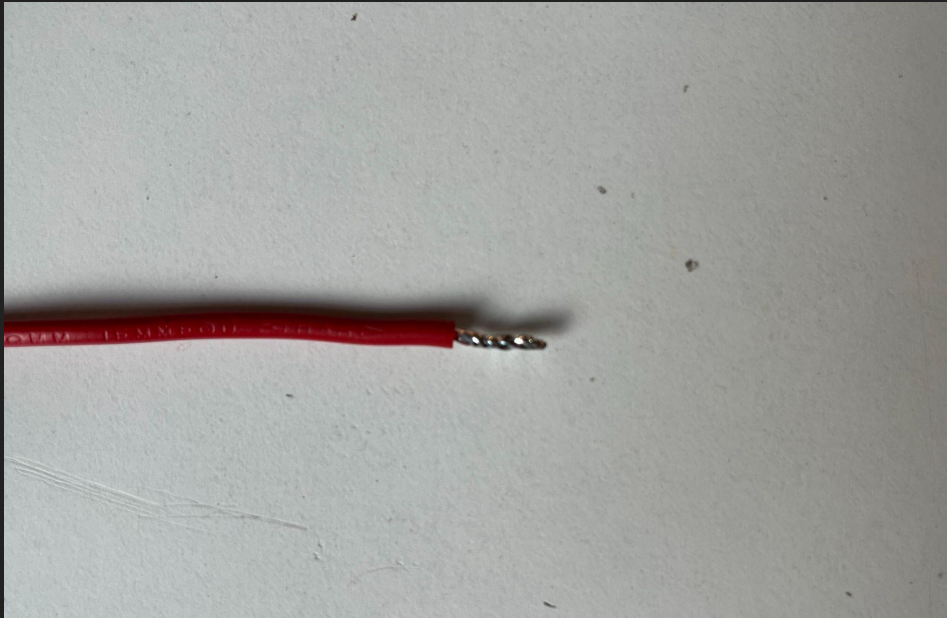


kabel/ draad vertinnen

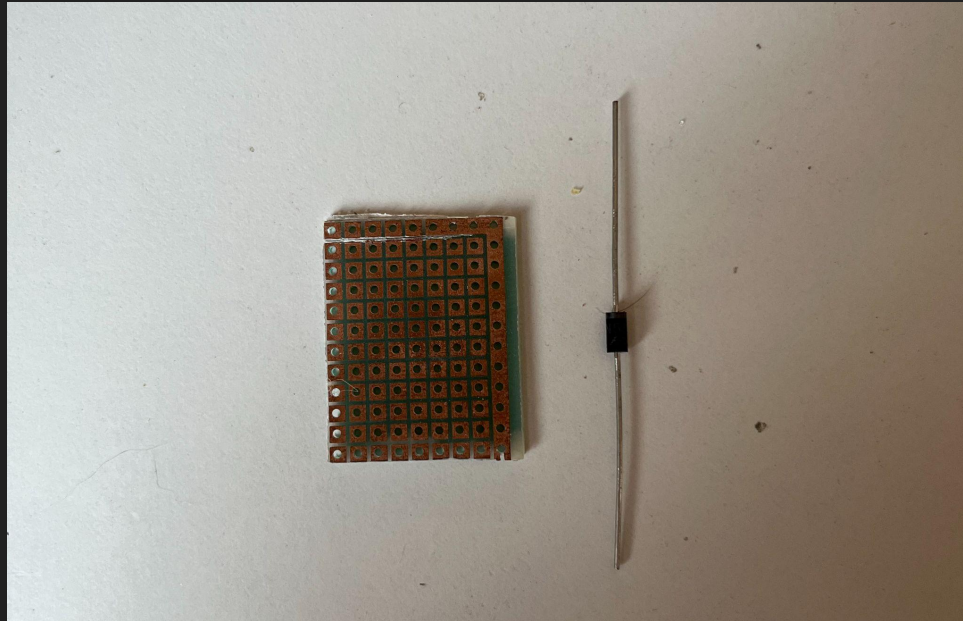


kabel/ draad

resultaat

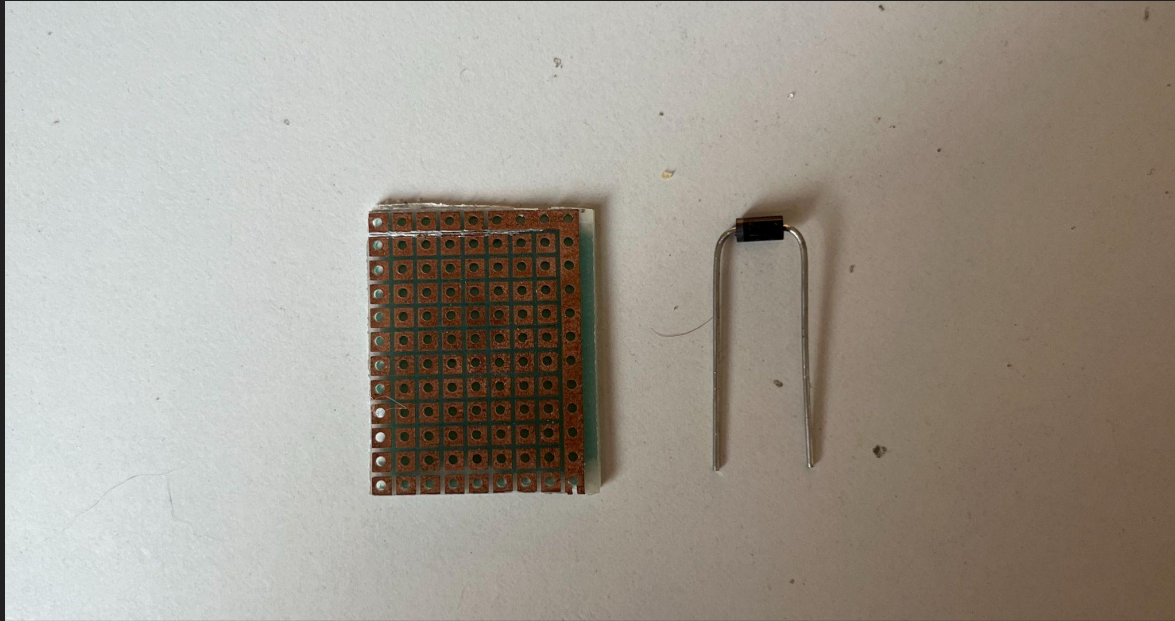


protoboard componenten



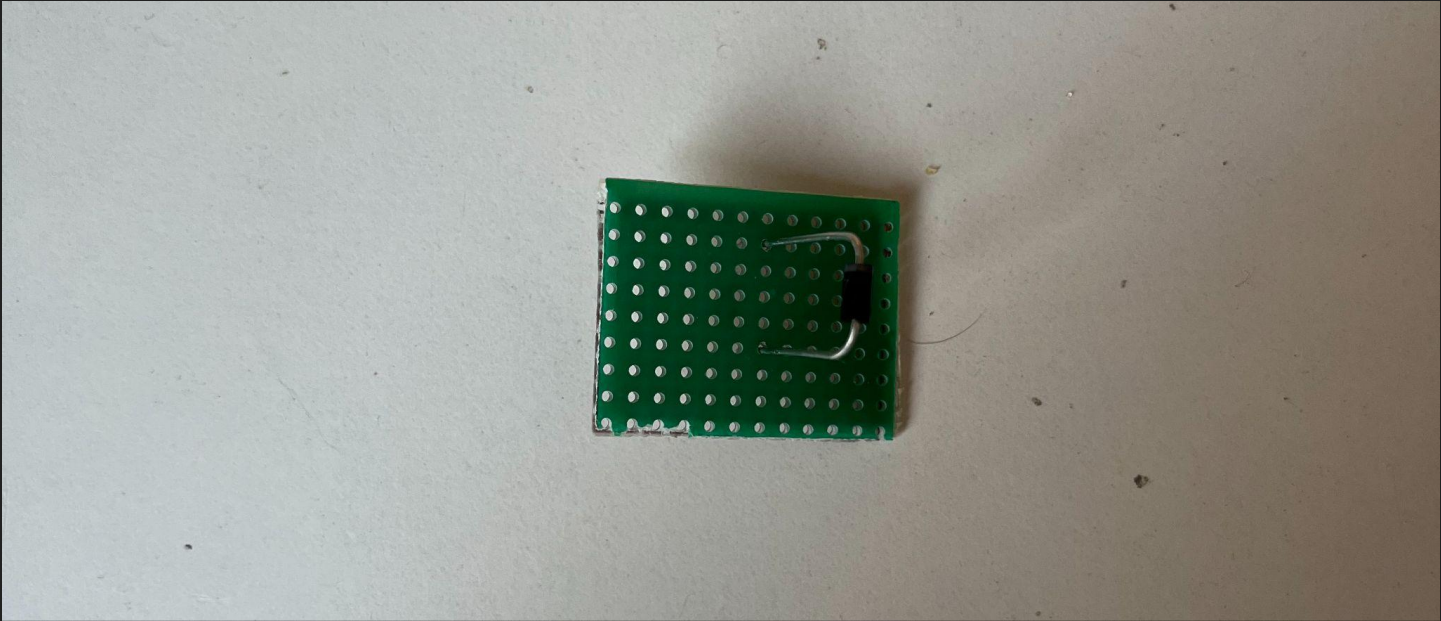
protoboard

pootjes buigen



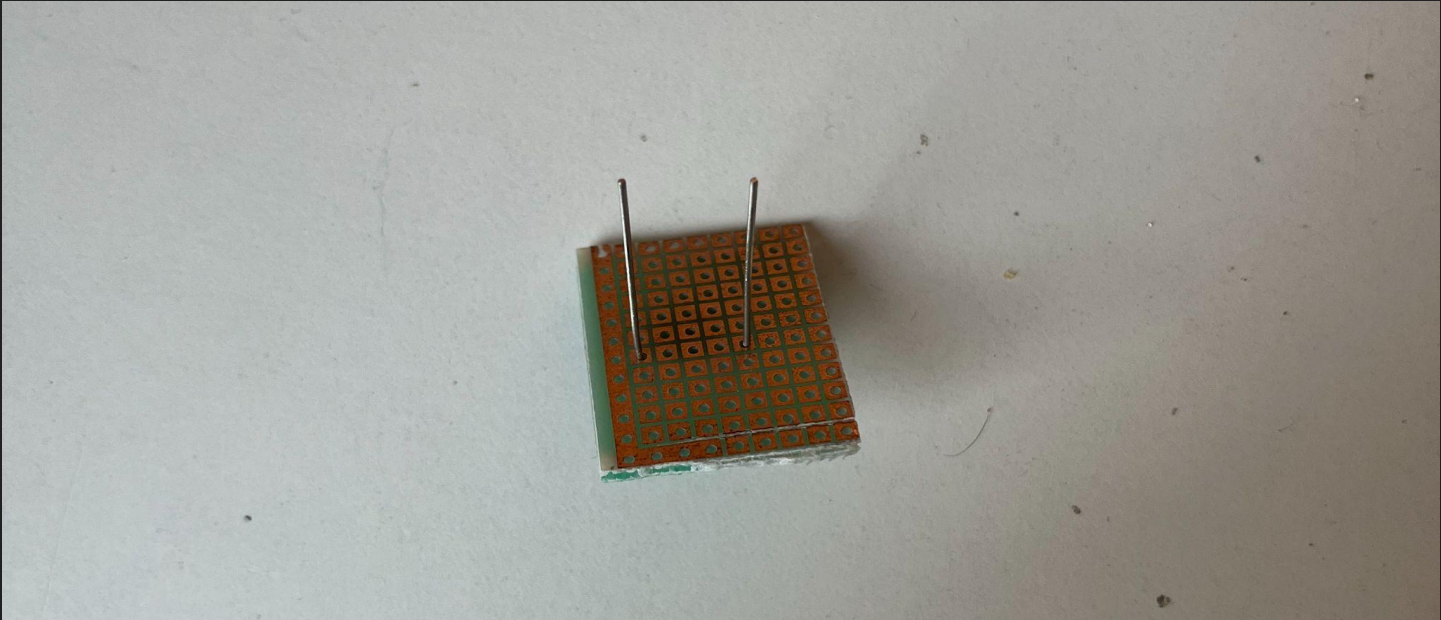
protoboard

in protoboard plaatsen

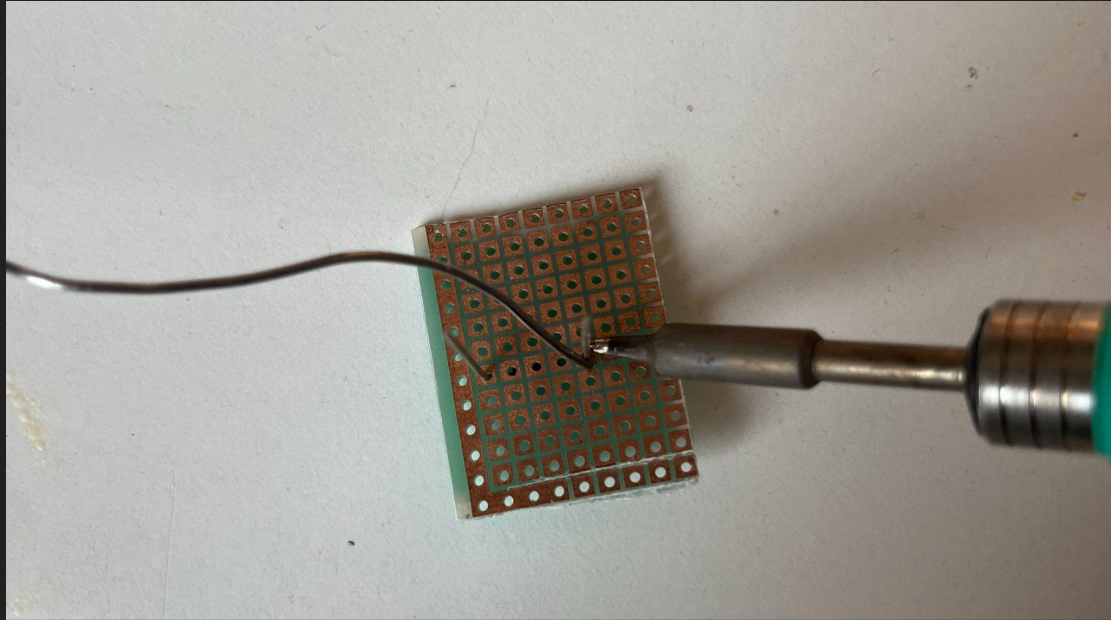


protoboard

vanaf de andere kant gezien

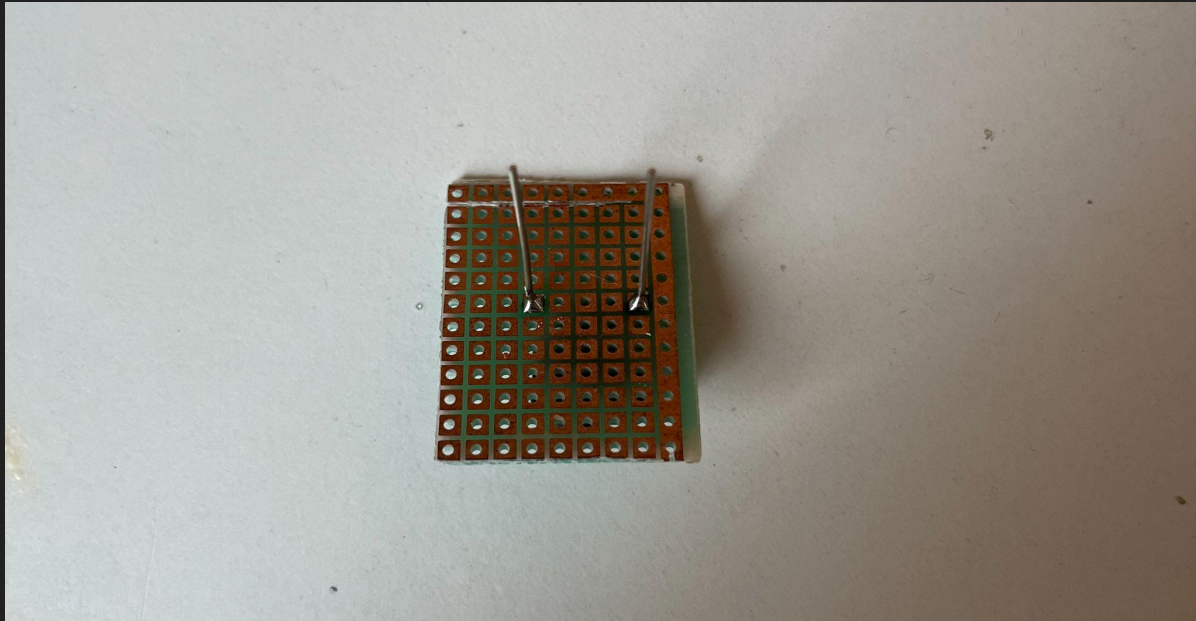


protoboard solderen



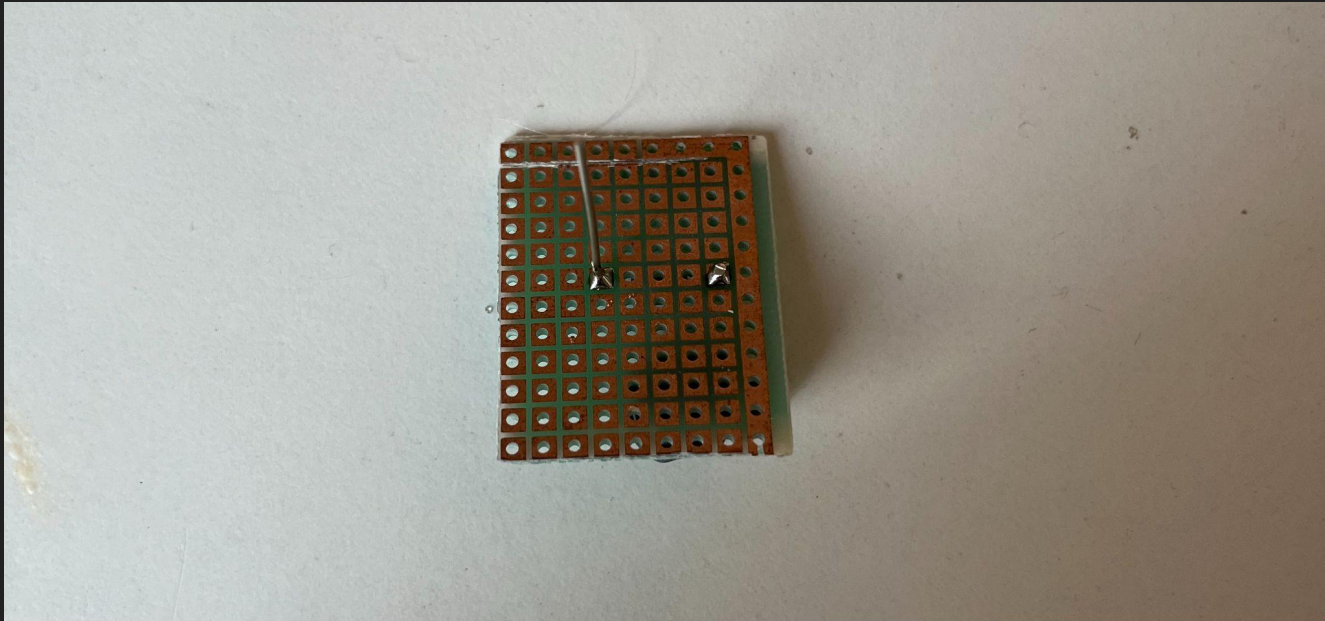
protoboard

resultaat



protoboard

pootjes afknippen



protoboard

goede soldering

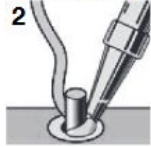
Here's the recommended soldering sequence:

1



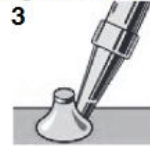
Heat part and pad 2 - 3 sec

2



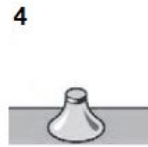
Add solder

3



Continue heating 1 -2 sec.

4



Let cool

After you have completed soldering, inspect the solder joint:



Perfect



Too much solder



Not enough solder



Cold joint



Too much heat



Short

opdracht

- soldeer in duo's een jack-jack kabel
 - soldeer allebei een plug
 - zorg dat ie werkt
 - vergeet de huls niet