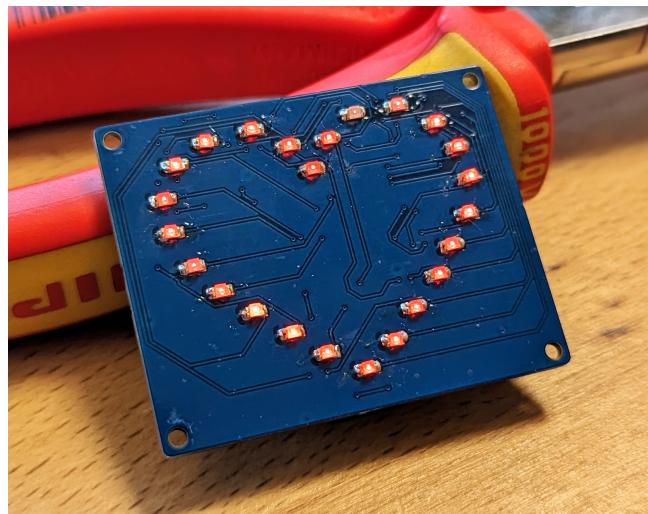


NE555 Heart (SMD)



Quantity	Name	Description	Label/Color Code
2	U2,U3	CD4017 counter	4017
1	U1	NE555 timer	NE555
2	D1,D2	1N4007 diode	A7
1	RV1	Potentiometer	
1	C1	10 nF ceramic capacitor	green
2	C2,C3	100 nF ceramic capacitor	red
1	C4	1 μ F ceramic capacitor	blue
1	BT1	CR2032 Battery holder	
24	D5-D28	LED SMD 0805 red	
1	R2	Resistor 1 k Ω	102
1	R3	Resistor 100 k Ω	104
1	R4	Resistor 47 Ω	47
1	SW1	Push Button	
1	SW2	Slider Switch	
1	Batterie CR2032 (optional)		
1	PCB		

Difficulty: ●●●○ Build Time: 1–2 hours

Manual v1.0 CC BY-SA 4.0 Binary Kitchen e.V.

PCB v2.2 CC BY-SA 4.0 Timo Schindler @ blinkyparts.com

Safety Information

- ATTENTION: Not suitable for children under 3 years, choking hazard due to small parts that may be swallowed.
- We recommend: Supervision of the assembly and soldering process by an adult.
- Keep these operating instructions in a safe place for later use! It contains important information.
- If the battery is empty, replace it only with a new battery with the same values.
- When soldering, the soldering iron, the solder and also the components being soldered become very hot.
- Always wear safety glasses when soldering and assembling the kit.
- Always use a fire proof soldering pad when soldering! This prevents the components from slipping away.
- To keep the soldering iron safe during assembly, always use a suitable soldering stand.
- The kit is designed for battery operation only.
- CAUTION: Never connect the kit to 230 V mains voltage! There is an absolute danger to life!
- Please take the device to appropriately certified disposal companies at the end of its service life. This is good for the environment and ensures correct disposal.
- Subject to changes and errors.

Disposal

This appliance is labelled in accordance with the European Directive 2012/19/EU on waste electrical and electronic equipment (WEEE). The directive provides the legal framework for the take-back and recycling of waste equipment throughout the EU.

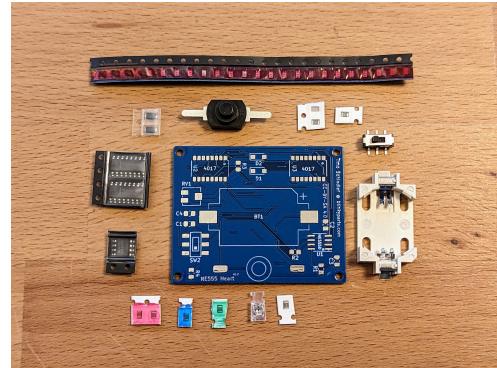
- **packaging:** The packaging is made of environmentally friendly materials and is therefore recyclable. Dispose of packaging materials that are no longer needed accordingly.
- **waste equipment:** Old appliances often still contain valuable materials. Therefore, hand in your old appliance to your retailer or a recycling centre for reuse. Please ask your retailer or your local authority for the current disposal routes.

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Step 1

- a) Check your components
- b) Leave the resistors and capacitors still in the strip packaging.



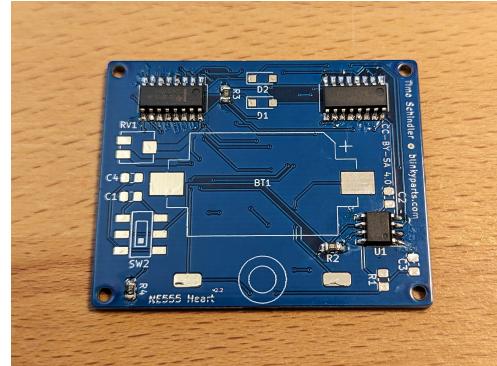
Step 2

- a) Fix the board to the base with adhesive tape.
- b) Take up U1 with an adhesive tape. The tape should only cover half of the IC.
- c) Then the IC can be aligned and fixed with tape.
- d) Alignment is important: The notch on the IC must match the notch on the board.
- e) Now solder all the legs of the IC.
- f) Then remove the tape and fix the other side.
- g) Then solder U2 and U3 on.



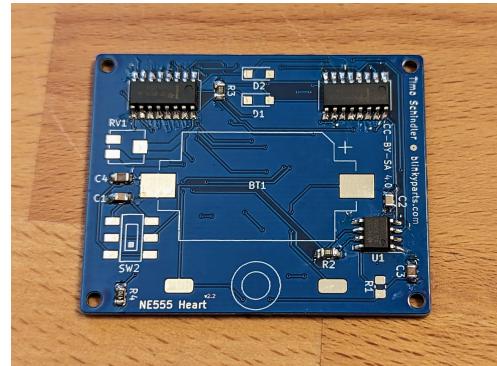
Step 3

- a) Solder the resistors R2 to R4.
- b) First tin only one pad of a resistor on the PCB.
- c) Pick up the resistor with tweezers and heat the solder on the pad again.
- d) Then insert the resistor sideways into the hot pad, until the resistor is in the right position.
- e) Then solder the second side.



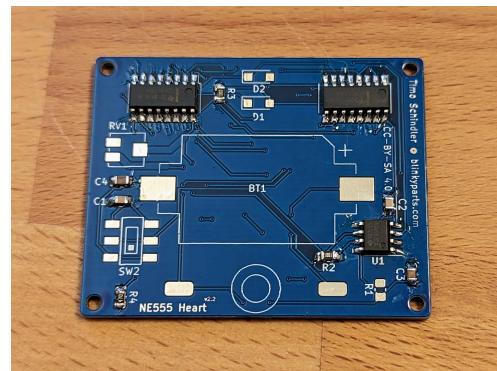
Step 4

- a) Solder the capacitors C1-C4 onto the pad using the same technique as before
- b) Note that the packages are colour coded. The capacitors have no printed numbering.



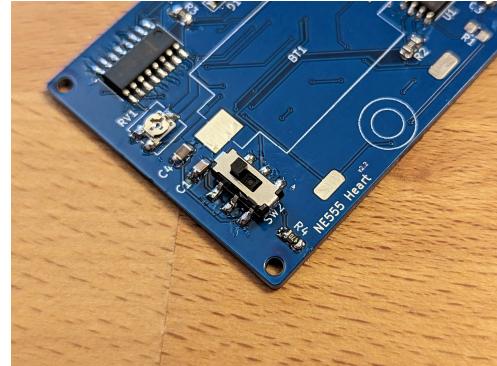
Step 5

- a) Solder the diodes D1 and D2 with the same technique. Attention:
Diodes have one direction. The diode is marked with a line. This
line is also printed on the board (left). Then solder the potentiometer
RV1 onto the board.



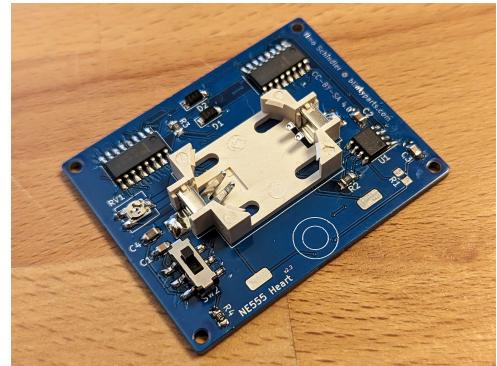
Step 6

- a) Now solder the switch SW2.



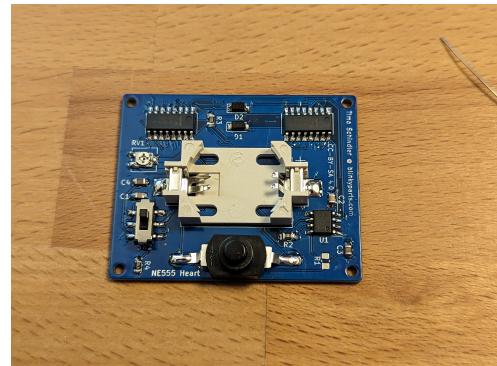
Step 7

- a) Now the battery holder comes on the board. Attention, this one
has one direction again. This direction is marked with a cut edge
on the component as well as on the board.



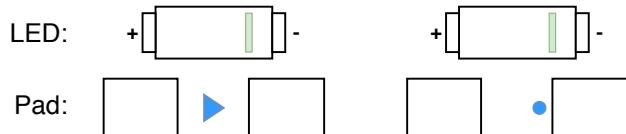
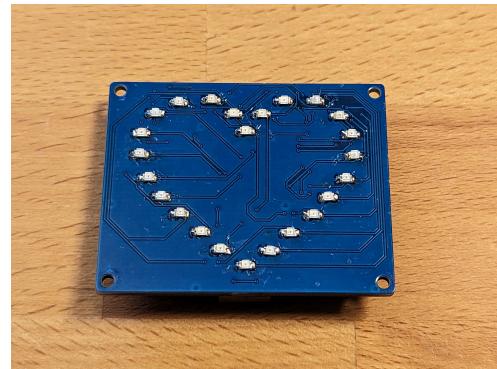
Step 8

- a) Finally, only the black switch is soldered on the back. To do this,
first bend down the solder flags.
b) Then solder the solder flags onto the board
c) The back of the board is now finished.



Step 9

- a) Attention! The alignment of the LEDs is important! First read all steps.
- b) LEDs are soldered on using the same technique as the resistors.
- c) To do this, turn the board over.
- d) The LEDs have a small green line on one edge on the top.
- e) There are small arrows or small dots printed on the board. The arrows or dots on the board indicate the side to which the small green line must be placed.
- f) Tip: If the arrows or dots on the board are difficult to see, refer to the layout drawing on the last page of the instructions



Step 10

- a) Now only the battery has to be inserted
- b) A metal collector (in the picture on the right) has to grip on top of the battery!
- c) Switch on. Ready!
- d) The switch SW2 can be used to switch between permanent lights and chaser LEDs
- e) The potentiometer influences the speed of the LEDs.

