FEATURES

- 2 555 timers
- BLINK/SOLID switch
- ON/OFF switch
- Battery included
- Magnets and adhesive pin for "pinning" and making it wearable

APPLICATIONS

- A gift that keeps giving
- Improving your soldering skills
- An easy way to tell someone how you really feel
- PCB badge collections

DESCRIPTION

It's a surface mount solder-it-yourself kit that drives 4 LEDs in a heartbeat-style blink pattern by cascading two 555 timers. It also is a terrible, terrible, awful layout. Especially if you like things to be straight and 45 and 90 and neat and tidy. Give it to yourself as a positive affirmation that you really do kick ass despite your oddities or give it passive-aggressively to your "favorite" person. It also has an on/off switch and blink/solid switch and **includes a CR2032 battery**. If that's not enough we also included 2 super-strong neodymium magnets, and an adhesive pin.
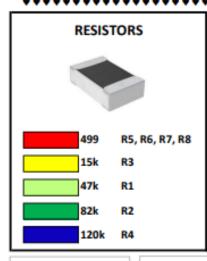

After assembly:

ALPENGLOW INDUSTRIES presents...

PS - I Hate You
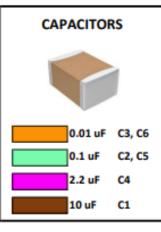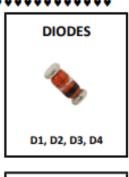
♥♥

A snarky love letter to all my lovely fellow circuit board artists, who get very upset when their patterns and traces aren't nicely aligned at 45 and 90 degrees. I see you and I care.
XOXOXOXOXOXOXOXOXOXOXOXOXOXOXOXOXOXOXOXOXOXOXOXOXOXOXOXOXOXOXOXOX

♥♥

RESISTORS

Color	Value	Designators
red	499	R5, R6, R7, R8
yellow	15k	R3
light green	47k	R1
green	82k	R2
blue	120k	R4

CAPACITORS

Color	Value	Designators
orange	0.01 uF	C3, C6
light green	0.1 uF	C2, C5
magenta	2.2 uF	C4
brown	10 uF	C1

DIODES

D1, D2, D3, D4

LEDS

D5, D6, D7, D8

Instructions are on Hackaday.io:

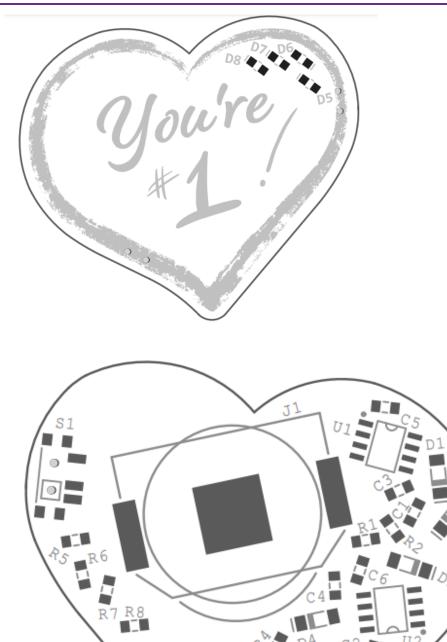Sign up for emails about new stuff!

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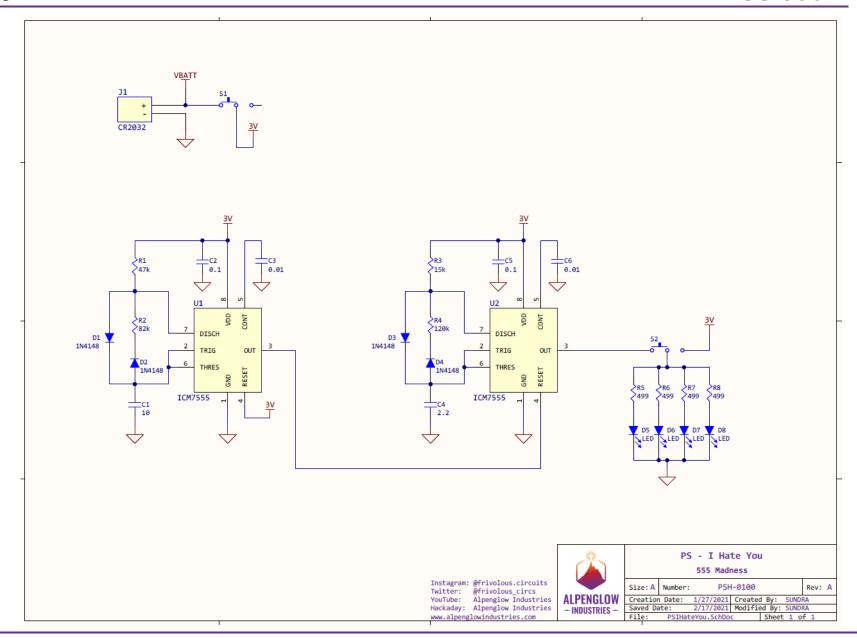Thank you for purchasing this kit and supporting us! Please tell your friends!
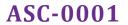
ALPENGLOW
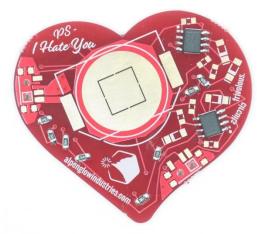## — INDUSTRIES —

You're
1 !

D8 D7 D6
D5

S1 J1 U1 C5 D1
C3 C1 D2
R1 R2
C6 D3
C4
R5 R6
R7 R8 R4 D4 C2 U2
R3 S2

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— INDUSTRIES —

VBATT

J1
+
-
CR2032

S1

3V

3V

R1
47k

C2
0.1

C3
0.01

U1
DISCH
TRIG
THRES
VDD
CONT
OUT
GND
RESET
ICM7555

R2
82k

D1
1N4148

D2
1N4148

C1
10

3V

3V

R3
15k

C5
0.1

C6
0.01

U2
DISCH
TRIG
THRES
VDD
CONT
OUT
GND
RESET
ICM7555

R4
120k

D3
1N4148

D4
1N4148

C4
2.2

3V

S2

R5
499

R6
499

R7
499

R8
499

D5
LED

D6
LED

D7
LED

D8
LED

ALPENGLOW
— INDUSTRIES —

PS - I Hate You
555 Madness

Size: A	Number:	PSH-0100	Rev: A

Creation Date:	1/27/2021	Created By:	SUNDRA
Saved Date:	2/17/2021	Modified By:	SUNDRA
File:	PSIHateYou.SchDoc	Sheet 1 of 1	

ALPENGLOW
─ INDUSTRIES ─

INSTRUCTIONS:

1. Unpack Your Kit & Download/Print Assembly Diagram

   Full kit:

2. Solder 555 Timers
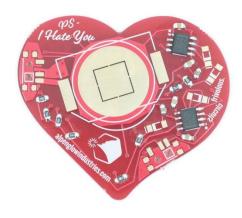
   Back of board with 555 timers:

3. Solder All of the Resistors

   Back of board with resistors:

4. Solder All of the Capacitors

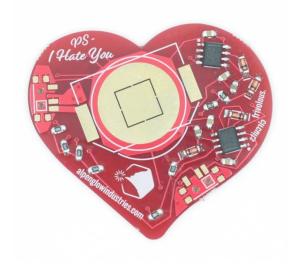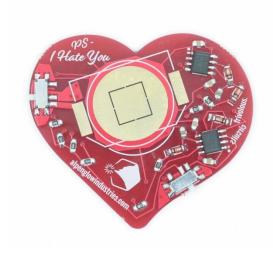   Back of board with capacitors:

5. Solder All of the Diodes

Back of board with diodes:

6. Solder the Switches

Back of board with switches:

7. Flip Board Over, Solder LEDs

Front of board with LEDs:

8. Flip Board Over, Solder Battery Holder

Back of board with battery holder:

9. Attach the Adhesive Pin

Back of board with adhesive pin:

10. Clean off the Flux

This step can be important for this board. Especially if you've used a water-soluble flux, the residue can actually conduct enough to alter the blinking circuit! Crazy, huh? This has actually caused issues with production electronics, so now you know a true pro tip. Clean off your flux, even if it's rosin. No-clean might be OK, depending. For water soluble flux, use warm water. For rosin or no-clean, use 90% or higher isopropyl alcohol. In either case, it's also nice to blow off your board with canned air, to get any residual water or alcohol out from under components.

11. Insert the battery and turn it on!

One switch is ON/OFF, the other is BLINK/SOLID. In the above photo in step 9, the ON/OFF switch is on the left and in the OFF position. The BLINK/SOLID switch is on the bottom right and is in the BLINK position.

Insert the battery, positive side facing up. Turn the ON/OFF switch to ON. If you've done everything right, your LEDs should blink in about a twice per second heartbeat-style pattern!

12. Troubleshooting

One of the LEDs don't light up:
- Check the direction of your LEDs! Did you solder them on in the proper orientation? If you need to change the direction of an LED, you can do this without damaging the LED if you're careful. Put your soldering iron to the side of the LED and add a bunch of solder until it blobs and touches both ends of the LED, and gently wipe the LED right off the board. If your LED is still on the solder blob on the tip of your iron, immediately whack the palm of your hand holding the iron against the table. This will cause the solder and the LED to drop off the tip, onto your table. Gently wipe most of the excess off of your LED and try again! We also give you an extra LED.

All of the LEDs don't light up:
- Check the direction of your LEDs per above.
- Check the direction of your battery.
- Check the direction of your 555 timer chips.
- Check the direction of your mini-MELF diodes.

The LEDs blink, but in a weird/wrong pattern:
- First, take your battery out and make sure your circuit board is clean, per the above step. Try it again. If it still is weird, go onto the following steps.

- The first one minute may in fact have a slightly different pattern, there can be a small "break-in" period. (It's an interesting effect due the initial voltage & internal resistance of a fresh battery). Just wait and see if it changes.
- Check the direction of your timer chips and mini-MELF diodes. Check your resistors for the correct values in the correct places. You can look at the numbers written on top under magnification, and you can also turn the circuit OFF, and measure each one's resistance with a multi-meter.
- Check your capacitors for the correct values in the correct places. The two most important ones are the 2.2uF C4 and the 10uF C1. There's a difference in the sizes of those capacitors, C1 should be the biggest/tallest one on the board. C4 should be the second biggest. Double-check the assembly drawing. You can also measure the capacitance in-circuit if you have a multimeter, but note you'll get slightly different values than "ideal" out-of-circuit values. You should still be able to verify that they're in the correct positions.

YOU MAY ALSO LIKE

SPC-0001
Spooky Coffin
PCB Blinky Badge Solder kit

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