

HoneyDripper24

F X Type: **FILTER**

Build Level: Intermediate

Based On: Coloursound® Dipthimizer™

Last Updated: July 20, 2024 4:43 PM

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Overview

The 2024 version of the HoneyDripper is a new, 4-layer PCB layout. It has also been modified so that the builder can use either CA3080 or the LM13700 OTA chips.

The Honey Dripper is based on the Coloursound Dipthimizer™, a very unusual and short lived auto-wah type effect. The Dipthimizer™ was only made for a couple of years in the late 70's and thus quite rare. Current eBay offerings price these somewhere close to \$1000. The effect itself is constructed from two parallel multiple feedback filters whose intensity is controlled by an envelope. Additionally, there is a four way rotary switch which changes the overall “vowel” driver produced by the envelope. It's a neat, old school analog filter effect.

Controls

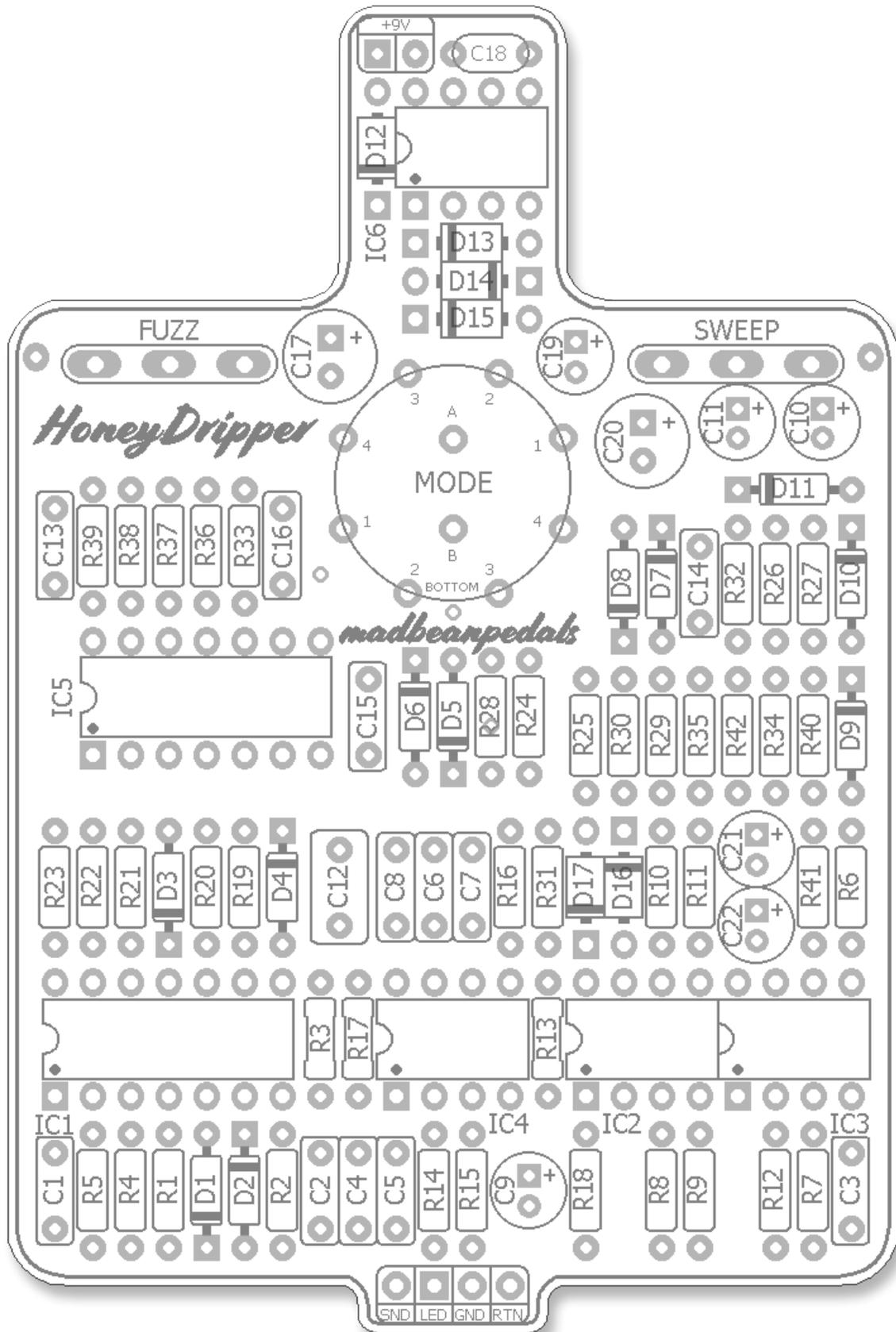
- **Fuzz:** Blends between a clean and fuzz tone at the input. Note that the “fuzz” here is not really all that fuzzy. It's more of a gentle overdrive.
- **Sweep:** Sets the intensity of the envelope that drives the two filters. The best settings tend to be 1/2 to full up.
- **MODE:** This is a 2-pole, 4-terminal rotary switch which changes the vowel type (labeled Yeh, Bow, Wah, Aae).

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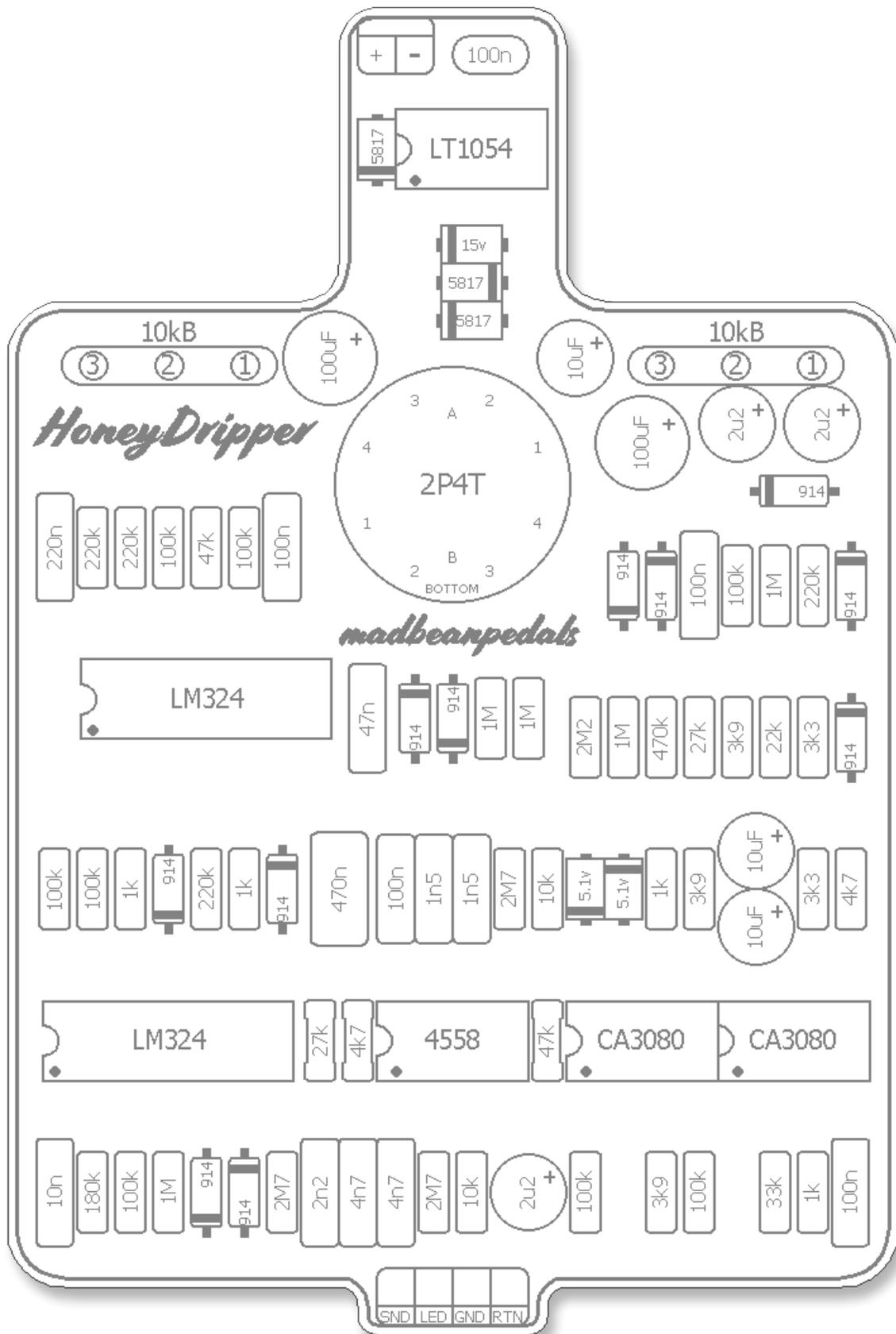
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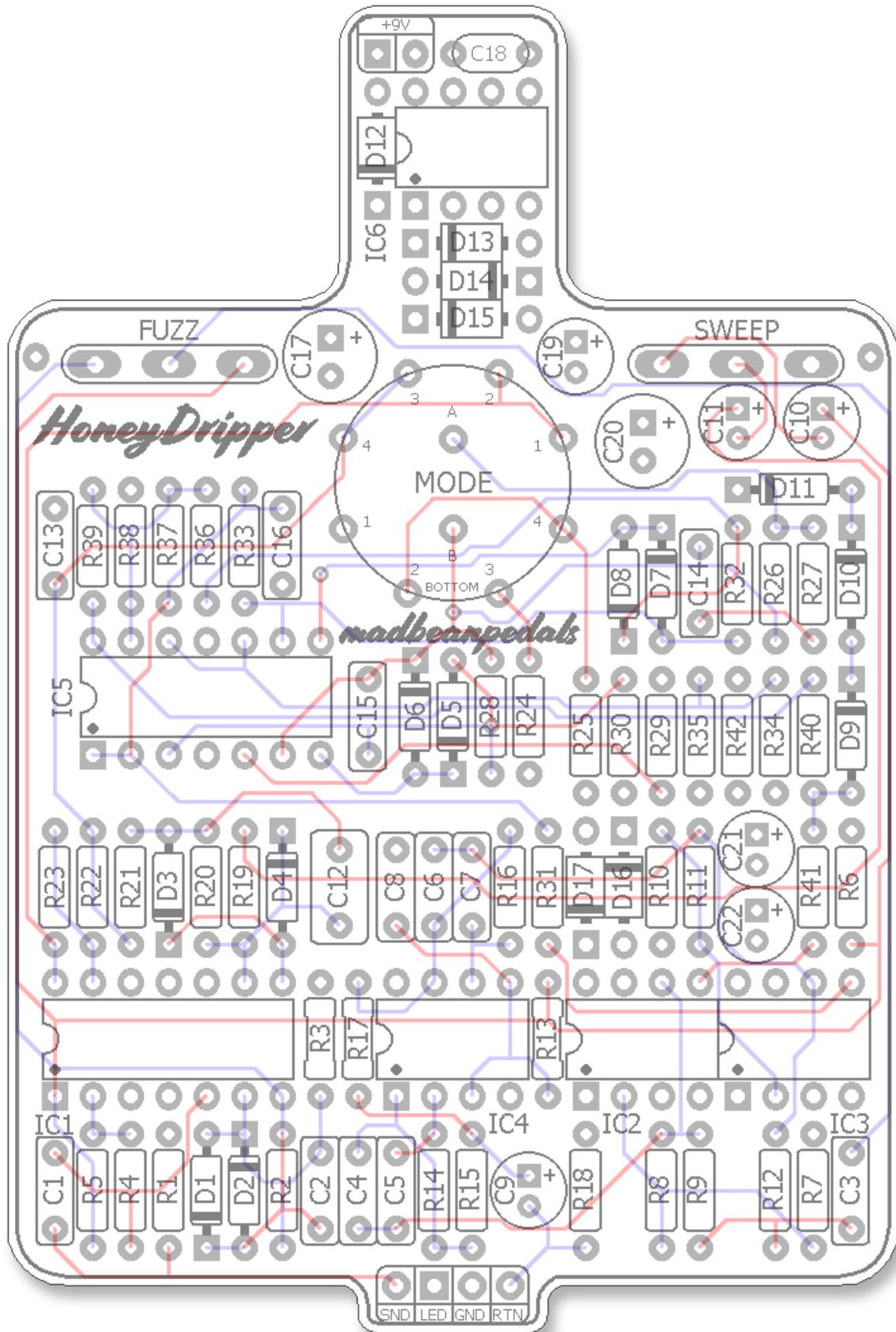
Parts Layout



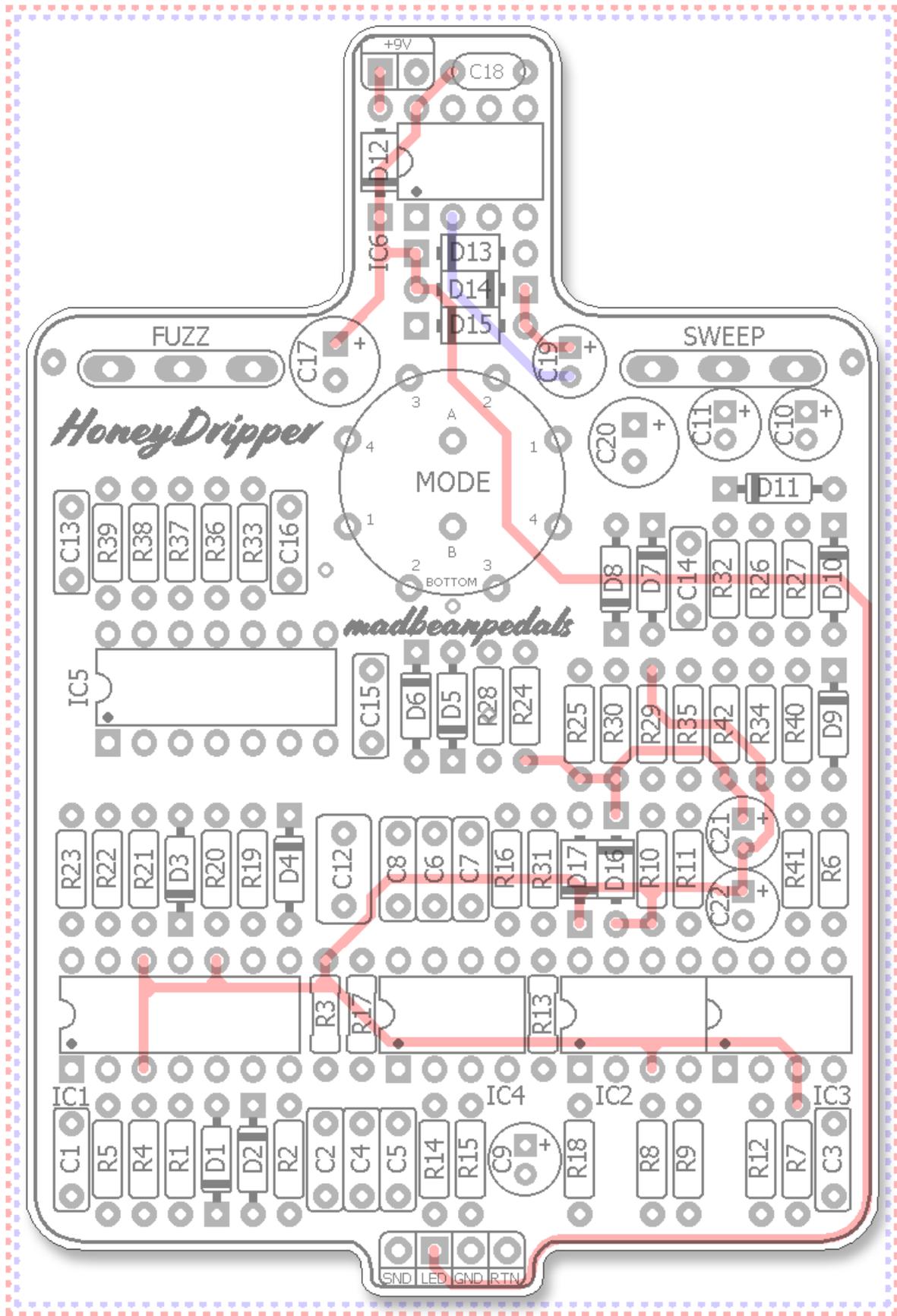
Component Values



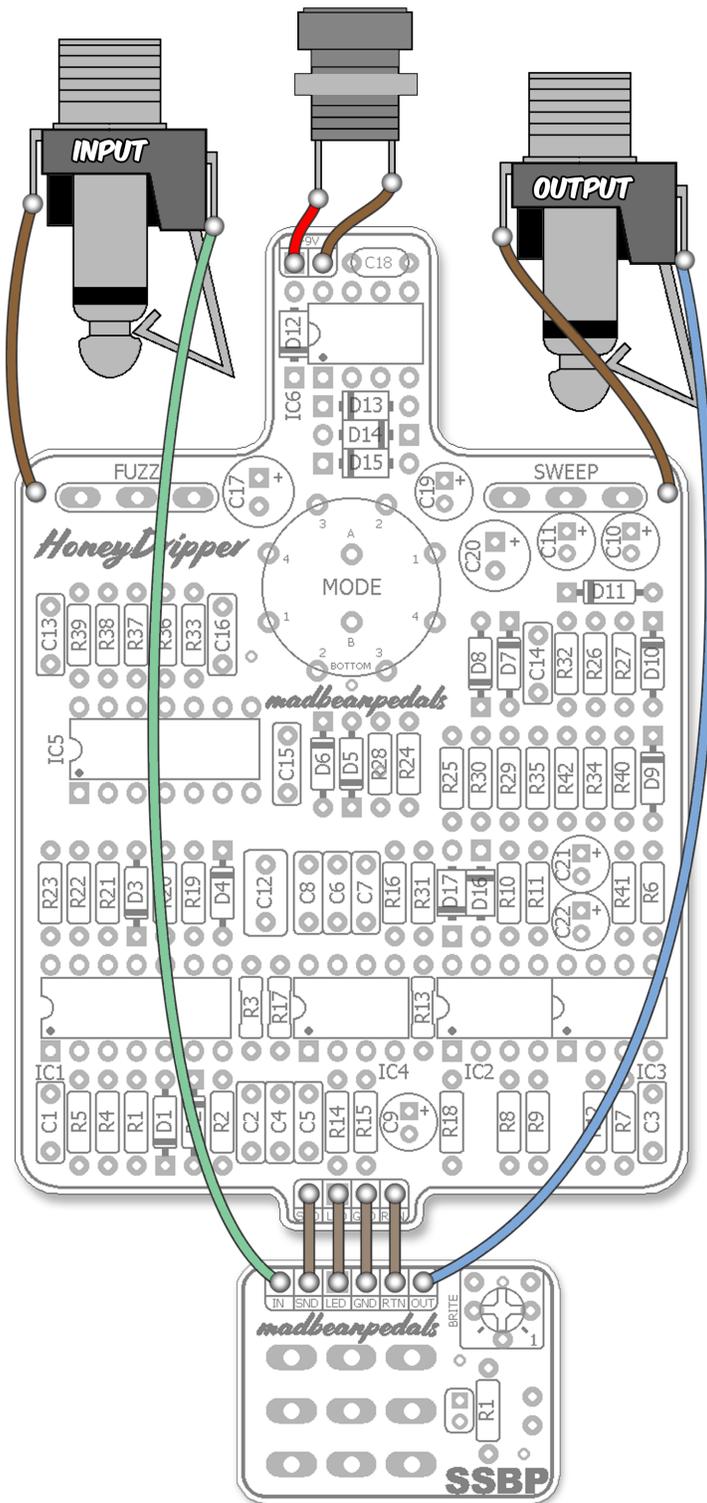
Trace Layout - Outer Layers



Trace Layout - Inner Layers



Wiring



The HoneyDripper24 is compatible with both the **SSBP** and **SSABP** bypass boards available at madbearpedals.

B.O.M.

Resistors		Resistors		Caps		Diodes	
R1	1M	R26	1M	C1	10n	D1 - D11	1n914
R2	2M7	R27	220k	C2	2n2	D12	1n5817
R3	27k	R28	1M	C3	100n	D13	15v Zener
R4	100k	R29	470k	C4	4n7	D14	1n5817
R5	180k	R30	1M	C5	4n7	D15	1n5817
R6	4k7	R31	10k	C6	1n5	D16	5.1v Zener
R7	1k	R32	100k	C7	1n5	D17	5.1v Zener
R8	3k9	R33	100k	C8	100n	IC	
R9	100k	R34	22k	C9	2u2	IC1	LM324
R10	1k	R35	27k	C10	2u2	IC2	CA3080
R11	3k9	R36	47k	C11	2u2	IC3	CA3080
R12	33k	R37	100k	C12	470n	IC4	4558
R13	47k	R38	220k	C13	220n	IC5	LM324
R14	2M7	R39	220k	C14	100n	IC6	LT1054
R15	10k	R40	3k3	C15	47n	Switch	
R16	2M7	R41	3k3	C16	100n	MODE	2P4T
R17	4k7	R42	3k9	C17	100uF	Pots	
R18	100k			C18	100n	FUZZ	10kB
R19	1k			C19	10uF	SWEEP	10kB
R20	220k			C20	100uF		
R21	1k			C21	10uF		
R22	100k			C22	10uF		
R23	100k						
R24	1M						
R25	2M2						

The 2P4T switch can be found here:

<https://stompboxparts.com/switches/2p4t-mini-rotary-switch/>

<https://www.pedalpcb.com/product/mini-rotary-switch-2p4t/>

<https://smallbear-electronics.mybigcommerce.com/rotary-switch-miniature-2p4t/>

<https://www.banzaimusic.com/2p4t-miniature-rotary-switch.html>

<https://www.musikding.de/Rotary-switch-2P4T-print>

Shopping List

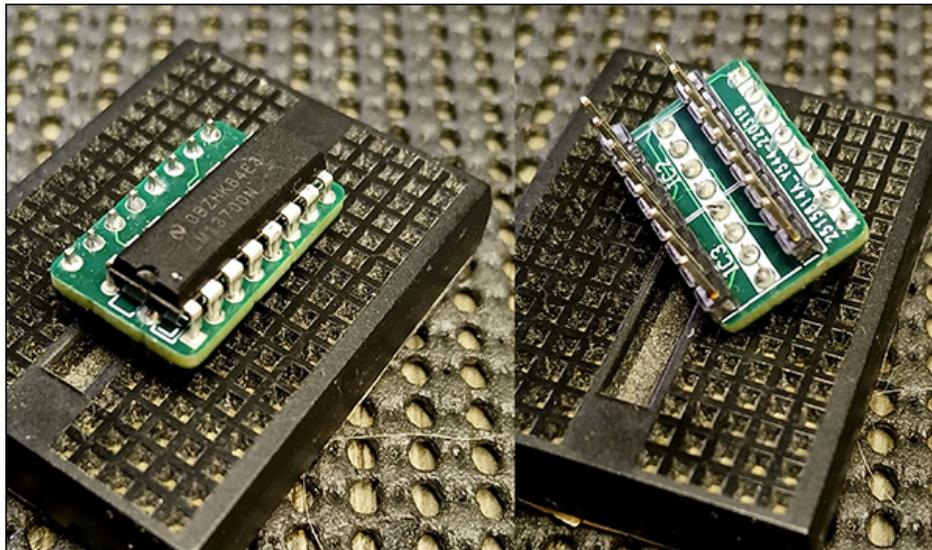
Value	QTY	Type	Rating
1k	4	Metal Carbon / Metal Film	1/4W
3k3	2	Metal Carbon / Metal Film	1/4W
3k9	3	Metal Carbon / Metal Film	1/4W
4k7	2	Metal Carbon / Metal Film	1/4W
10k	2	Metal Carbon / Metal Film	1/4W
22k	1	Metal Carbon / Metal Film	1/4W
27k	2	Metal Carbon / Metal Film	1/4W
33k	1	Metal Carbon / Metal Film	1/4W
47k	2	Metal Carbon / Metal Film	1/4W
100k	8	Metal Carbon / Metal Film	1/4W
180k	1	Metal Carbon / Metal Film	1/4W
220k	4	Metal Carbon / Metal Film	1/4W
470k	1	Metal Carbon / Metal Film	1/4W
1M	5	Metal Carbon / Metal Film	1/4W
2M2	1	Metal Carbon / Metal Film	1/4W
2M7	3	Metal Carbon / Metal Film	1/4W
1n5	2	Film	25v min.
2n2	1	Film	25v min.
4n7	2	Film	25v min.
10n	1	Film	25v min.
47n	1	Film	25v min.
100n	5	Film	25v min.
220n	1	Film	25v min.
470n	1	Film	25v min.
2u2	3	Electrolytic	25v min.
10uF	3	Electrolytic	25v min.
100uF	2	Electrolytic	25v min.
1n914	11		
1n5817	3		
Zener	1	15v	1W
Zener	2	5.1v	1W
LM324	1		
CA3080	2	or, one LM13700	
4558	1		
LM324	1		
LT1054	1		
2P4T	1	Mini rotary switch	
10kB	2	PCB Right Angle	16mm

Additional Hardware

- (1) 125B enclosure
- (2) 1/4" "Lumberg" mono jacks
- (1) Slim 2.1mm DC jack
- (1) Standard 3PDT footswitch
- (1) 5mm LED

Build Notes

- The stock unit has the Fuzz control set up for fuzz at CCW and clean at CW. This has been reversed for the HoneyDripper so the fuzz circuit blends in as the control is turned clockwise.
- The circuit itself has a bit of hiss which is endemic to the design. With so much emphasis added to the upper mids / low treble frequencies it's not too surprising. It also has a bit of volume boost as well. Unfortunately, there was no room to add a volume control on this layout.
- If you want to add an external volume knob, simply substitute a 100k pot or trimmer in place of R18. Connect pin3 of the pot/trimmer to the RTN pad, pin1 to any convenient grounding point and take the circuit output from the wiper (pin2). You will need to come up with a spot for control placement in the enclosure. If that's too much trouble, try reducing R18 greatly. 10k or 4k7 may do the trick.
- The HoneyDripper has been designed so that you can use two CA3080 chips for IC2 and IC3 or a single LM13700 depending on what parts you are able to get. The LM13700 substitution is done using a breakout board which is included with the HoneyDripper. There are two SIL pins included. These are soldered to the breakout PCB first. Then the IC (or a 16pin socket) is soldered. This assembly is then soldered in place to the HoneyDripper PCB. Make sure you get the IC orientation correct!



Circuit Voltages

IC1 LM324		IC5 LM324		IC2 CA3080		IC2/3 LM13700	
1	4.67	1	4.65	1	ignore	1	1.27
2	4.67	2	4.65	2	4.67	2	ignore
3	4.67	3	~4	3	4.67	3	4.67
4	17.56	4	17.56	4	0	4	4.67
5	4.63	5	4.49	5	303mV	5	4.67
6	4.67	6	4.68	6	4.67	6	0
7	4.76	7	4.3	7	17.56	7	ignore
8	4.62	8	2.14	8	ignore	8	ignore
9	4.67	9	2.57	IC2 CA3080		9	ignore
10	4.67	10	2.57	1	ignore	10	ignore
11	0	11	0	2	4.67	11	17.56
12	4.67	12	2.57	3	4.67	12	4.67
13	4.61	13	2.6	4	0	13	4.67
14	4.69	14	550mV	5	700mV	14	4.67
IC4 4558		IC6 LT1054		6	4.67	15	ignore
1	4.61	1	2.6	7	17.56	16	1.32
2	57mV	2	4.87	8	ignore		
3	4.65	3	0				
4	0	4	0				
5	4.65	5	0				
6	4.67	6	2.55				
7	4.61	7	1.36				
8	17.56	8	9.18				

The areas highlighted in yellow show the different measurements taken at the IABC pins between the CA3080 and LM13700. [This is normal.](#)

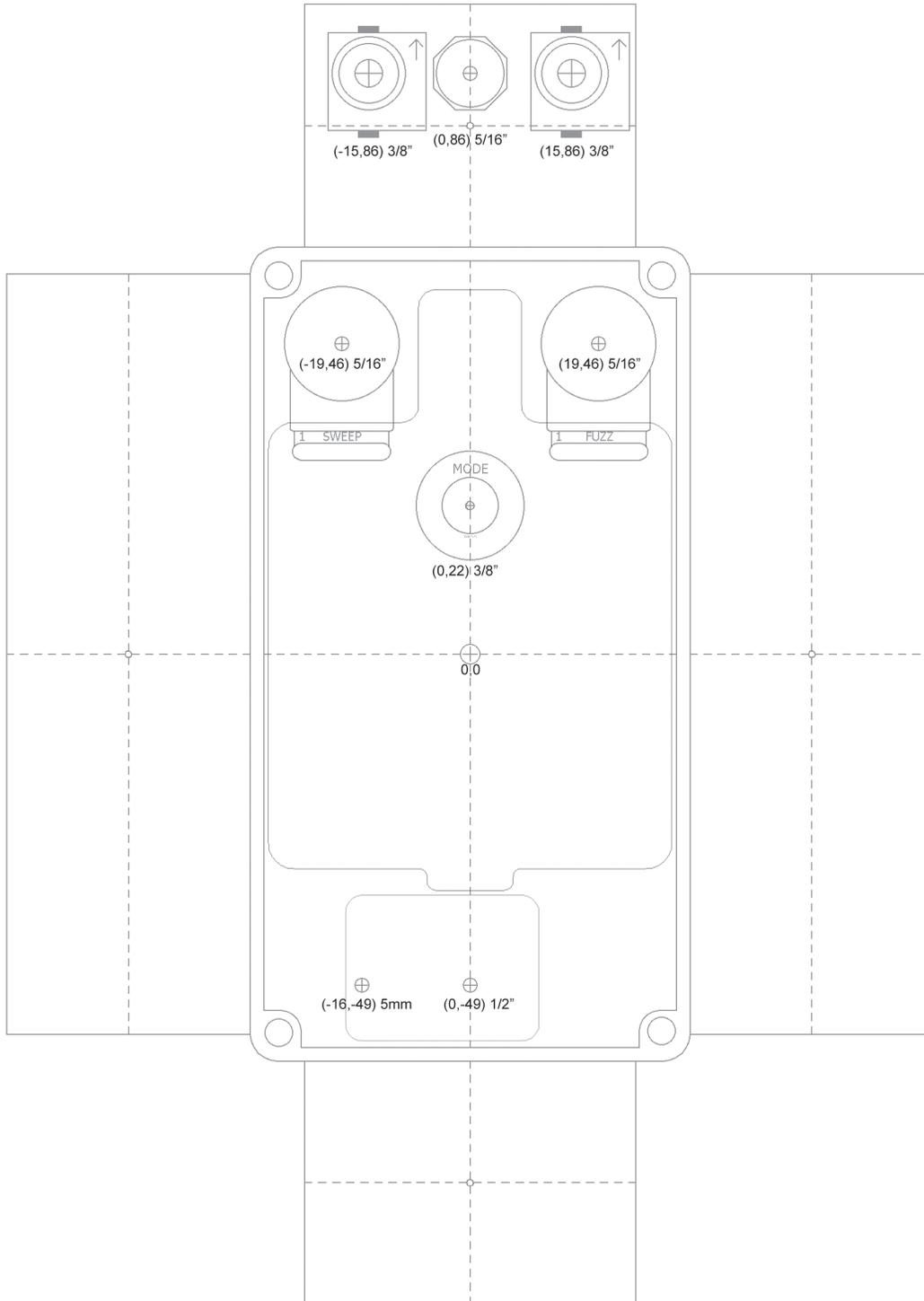
9.42vDC One Spot

- Current Draw: 35mA (same for both OTA types).
- Testing Conditions: Pots @ 50%, switch in the 1st position.
- Some voltage on IC5 will vary with switch position, so use the first one (CCW) to compare to the list above.

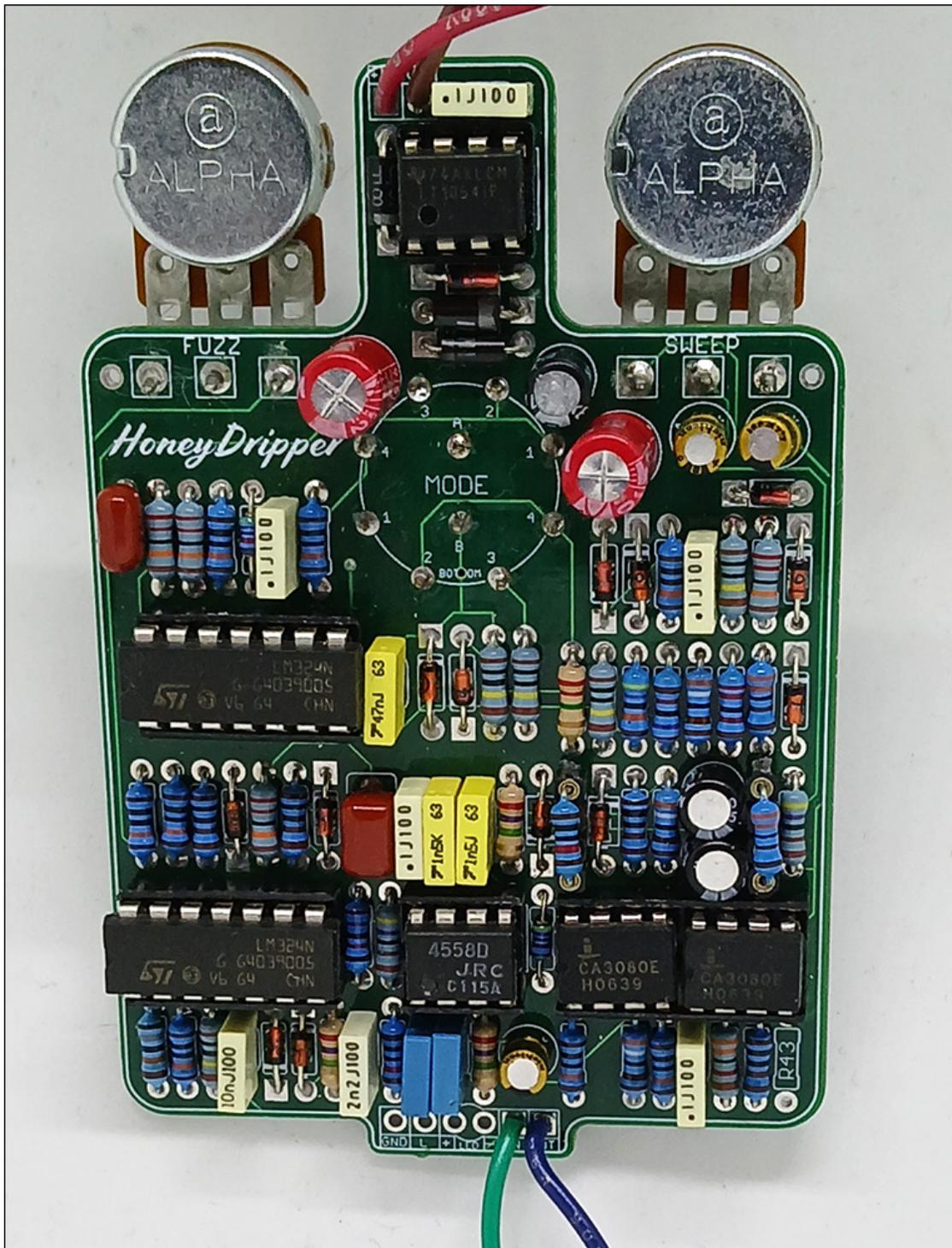
Drill Template

Coordinates are denoted in (X,Y), drill size format starting from the center (0,0) location of the enclosure.

Tayda drill link: https://drill.taydakits.com/box-designs/new?public_key=ck1rR0YzQzJpOGhHUW82bHpZVWQ3dz09Cg==



Build Pic



Prototype build. The production model is slightly changed.

