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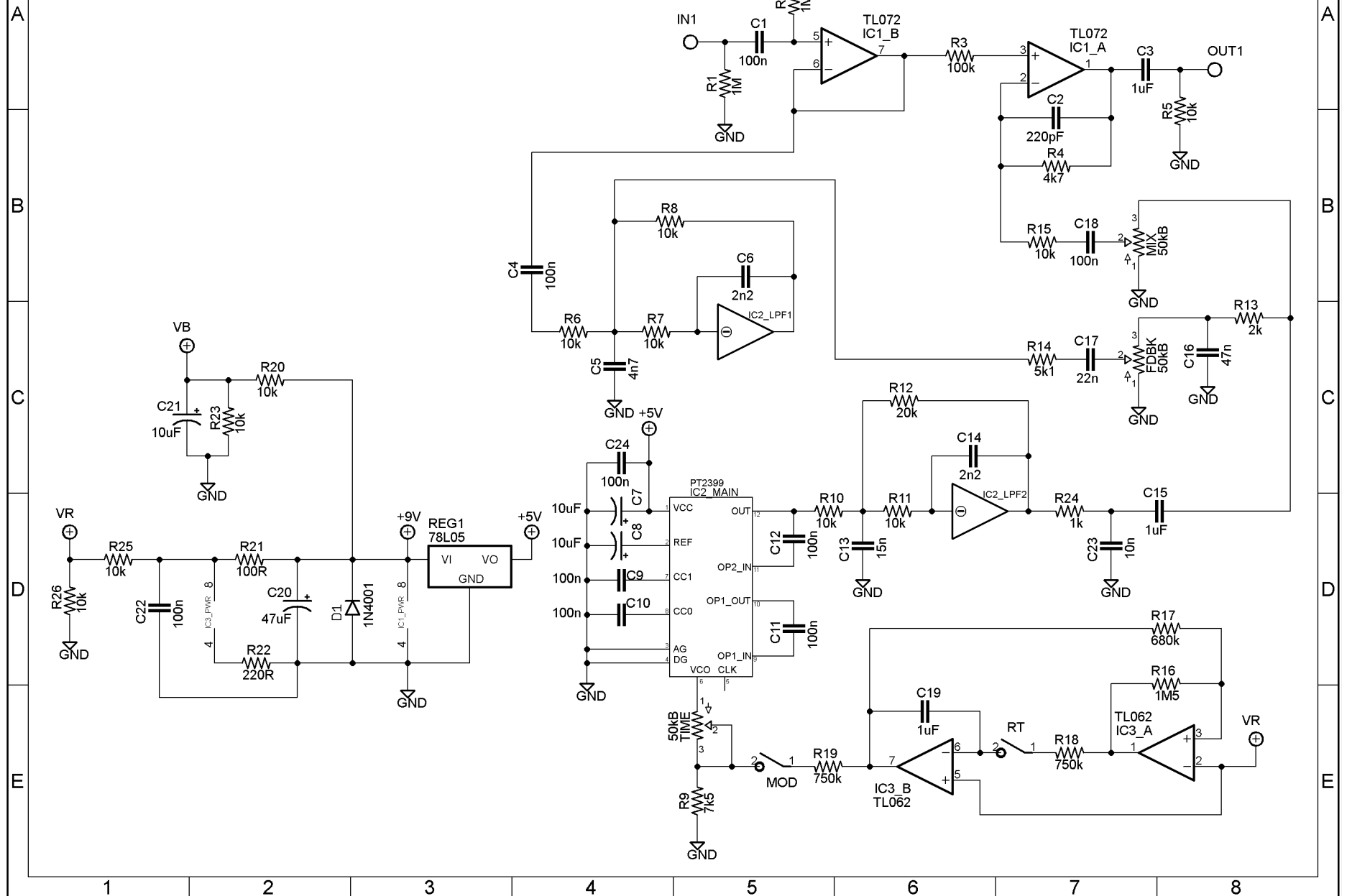


RT: This mod allows you to insert a Rate control instead of the MOD switch.

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ZERO POINT MICRO

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Resistors (1/8W)		Caps		Type	Diodes	
R1	1M	C1	100n	MLCC	D1	1N4001
R2	1M	C2	220pF	Ceramic	Regulators	
R3	100k	C3	1uF	MLCC	REG1	78L05
R4	4k7	C4	100n	MLCC	Integrated Circuits	
R5	10k	C5	4n7	MLCC	IC1	TL072
R6	10k	C6	2n2	MLCC	IC2	PT2399
R7	10k	C7	10uF	Electrolytic	IC3	TL062
R8	10k	C8	10uF	Electrolytic	Switches	
R9	7k5	C9	100n	MLCC	MOD	SPST
R10	10k	C10	100n	MLCC	Pots (9mm Alpha)	
R11	10k	C11	100n	MLCC	FDBK	50kB
R12	20k	C12	100n	MLCC	MIX	50kB
R13	2k	C13	15n	MLCC	TIME	50kB
R14	5k1	C14	2n2	MLCC		
R15	10k	C15	1uF	MLCC		
R16	1M5	C16	47n	MLCC		
R17	680k	C17	22n	MLCC		
R18	750k	C18	100n	MLCC		
R19	750k	C19	1uF	MLCC		
R20	10k	C20	47uF	Electrolytic		
R21	100R	C21	10uF	Electrolytic		
R22	220R	C22	100n	MLCC		
R23	10k	C23	10n	MLCC		
R24	1k	C24	100n	MLCC		
R25	10k					
R26	10k					

For information in what types of components to use for the Zero Point Micro, please download the "Baby Board Build Guide":

<http://www.madbeanpedals.com/downloads/BabyBoardGuide.pdf>

You must use multi-layer ceramic capacitors for at least C6, C11, C12 and C14. These are 2.5mm spaced leads on the PCB layout.

Revision – 02.01.13

While I was doing by final tweaking before boxing up, I realized that the straight through signal on the delay has too much of a boost to it. The input/output stages of the Micro are different than the other Zero Points (and most PT2399 delays). It's non-inverted, with an input buffer and an output mixer. I did it this way because it saved three parts on the PCB which was critical to fitting everything in.

It's not terribly noticeable at low volumes, but when you start cranking up your amp, there's too much of a jump...probably 5 or 6 db. So, these modified values will bring the input signal much closer to the bypass.

Change R3 to 100k and R4 to 4k7.

Two other notes: an external type DC jack will make this build much easier. I used one and fitting everything in was actually very easy. Remember to use enough length on your wired pots so that you can install them before fitting the PCB into the enclosure.

DC Jack w/ external nut: <http://www.smallbearelec.com/servlet/Detail?no=666>

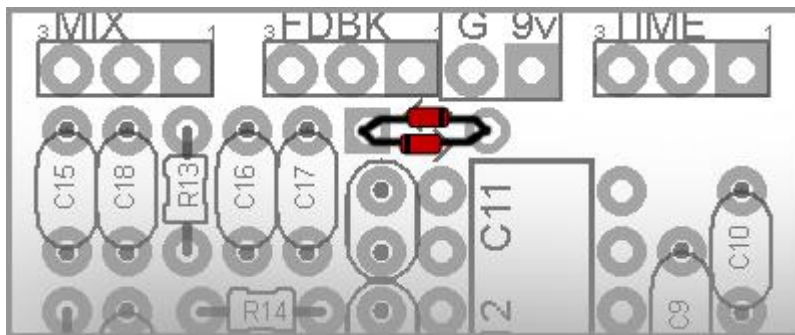
Lastly, I set mine up with always on modulation and a Rate pot. I used 68k for R18 and 220k for R19. As I mention in the build doc, these two resistors should be experimented with and you will likely pick different values according to how you set up the modulation (fixed depth and/or rate, variable rate or depth, etc). Those are the values I though worked well when using a Rate pot.

There are three ways to hook up the modulation:

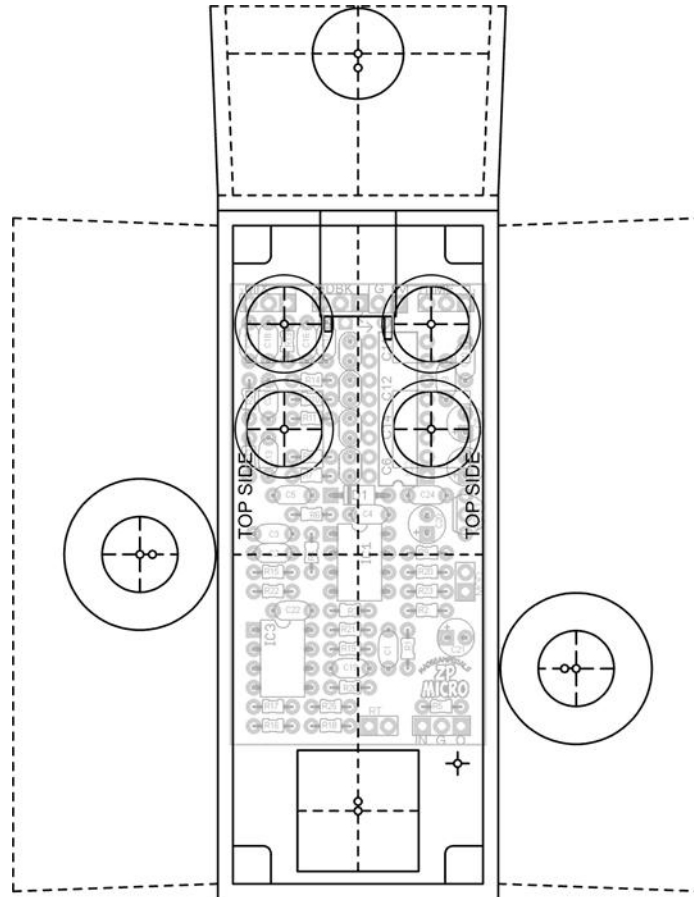
- 1) **Mod toggle:** Use a SPST/SPDT switch wired to the MOD pads on the PCB and jumper the two RT pads. This gives you a fixed rate and depth setting on the modulation which you turn off and on with the switch. **If using this option, you may want to socket R18 and R19.** I picked 750k for these two values because it is a very musical, although subtle, chorus effect. Lowering either value will increase the speed and depth accordingly, so experiment.
 - 2) **Variable mod speed:** Jumper the two MOD pads and use a 1MB (or C) pot wired as a variable resistor (connect one wire to lug 3 and the other wire to lug 2) to the two RT pads. This means the modulation will always be on while allowing you to change the speed. If using this option, R18 will set the minimum speed, so you should use a lower value suc as 47k-100k. Adjust to taste.
 - 3) **Variable mod depth:** Jumper the RT pads, and use a 1MB pot wired as a variable resistor (connect one wire to lug 3 and the other wire to lug 2) to the two MOD pads. This option means the modulation will always be on and you can vary the depth, but not the speed. In this case, leave R18 stock. R19 will set the maximum depth, so you should use a lower value such as 47k-100k.
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- You can use 6k8 or 8k2 for R9 if you do not have the 7k5.
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Clamp mod: There are two extra pads below the FDBK pot. These allow you to insert two 1n914 diodes to ground on the feedback path of the repeats. The diodes will help limit the volume of the feedback when the FDBK pot is at maximum. This will prevent the repeats from getting too loud when the feedback goes into oscillation. If using the clamp mod, put the 1n914 diodes back to back. The pads are big enough to fit the leads for both diodes at each end.



1590 A
3.6" W x 4.6" H



Be VERY careful in working out your drills for the 1590A enclosure. This is a large PCB and will extend over the 9mm pots. You should drill your DC jack so that it will fit under the PCB but clear the pots. The template above is a suggestion but not exact. Please fit carefully before drilling.

If you want to make things a bit easier for yourself, use one of the external nut type DC jacks like this:

<http://www.smallbearelec.com/servlet/Detail?no=666>

It may make the difference between having a nice easy build and wanting to break something ☺