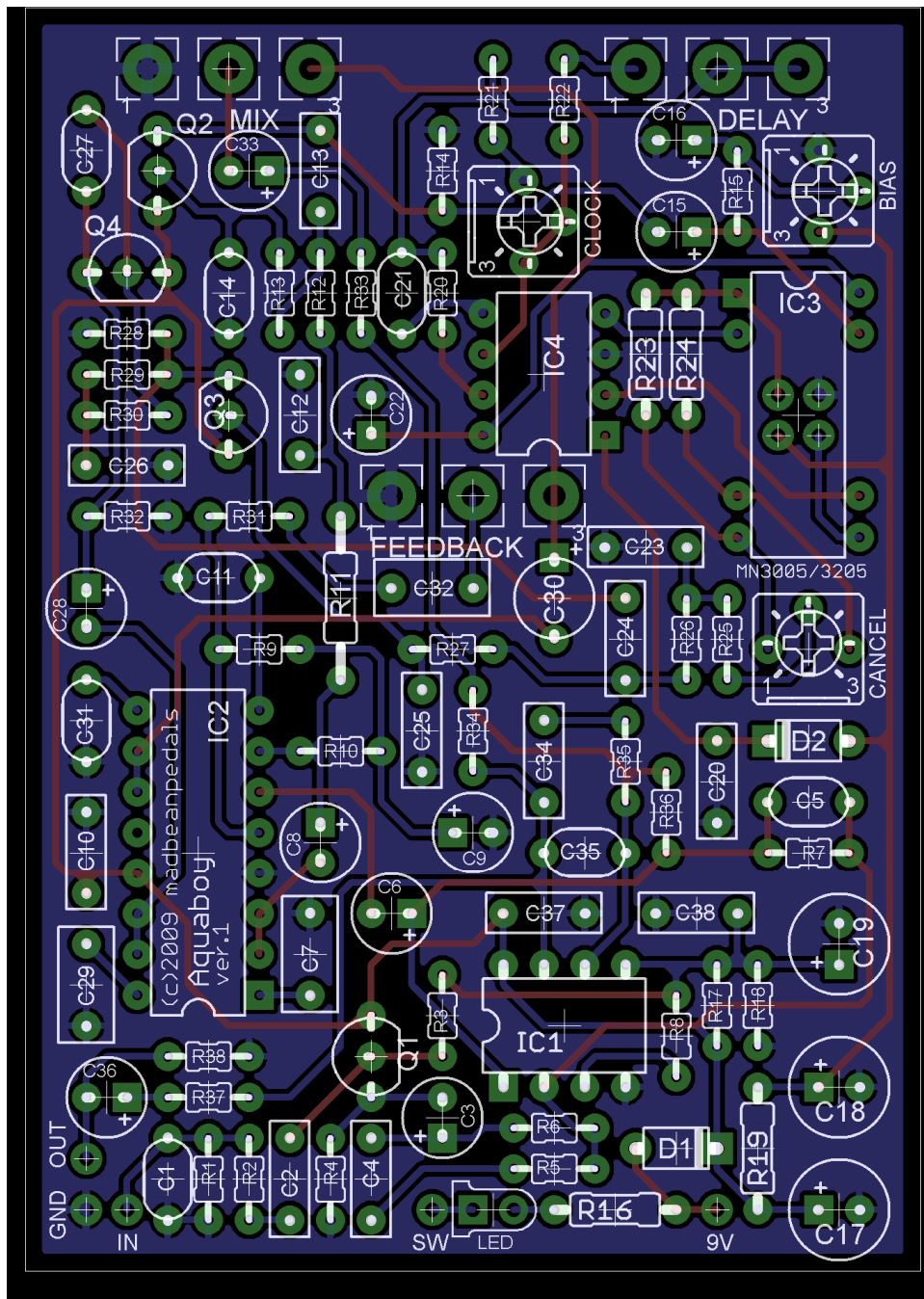
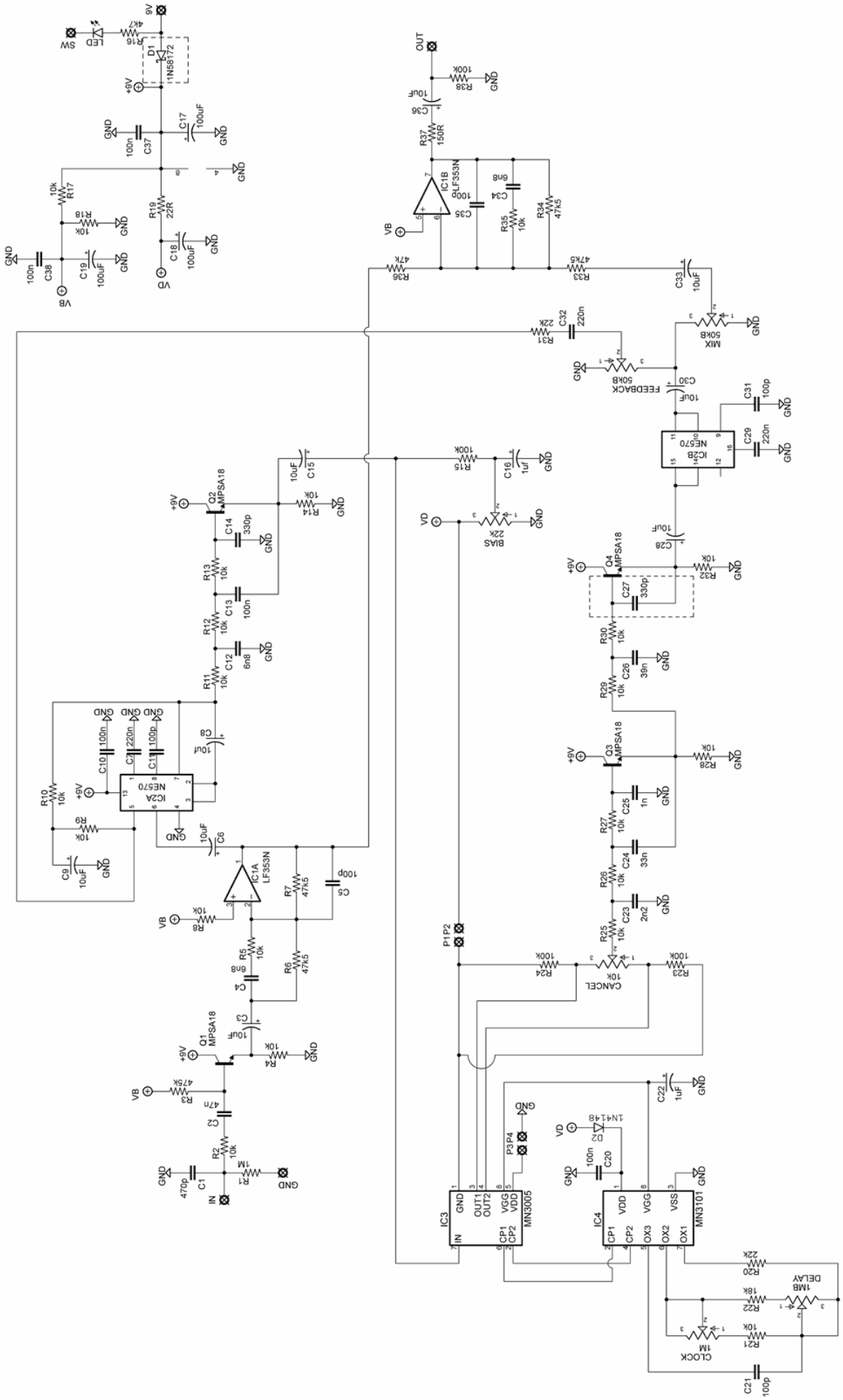


Aquaboy

Prototype 12/09

brian@madbeanpedals.com

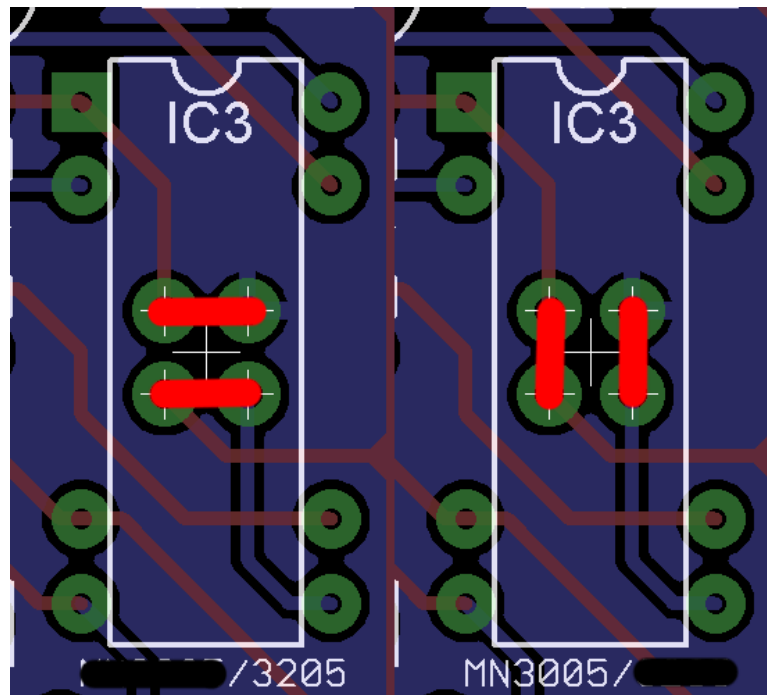




Part	Value	Part	Part
R1	1M	C1	470p
R2	10k	C2	47n
R3	475k	C3	10uF
R4	10k	C4	6n8
R5	10k	C5	100p
R6	47k5	C6	10uF
R7	47k5	C7	220n
R8	10k	C8	10uf
R9	10k	C9	10uF
R10	10k	C10	100n
R11	10k	C11	100p
R12	10k	C12	6n8
R13	10k	C13	100n
R14	10k	C14	330p
R15	100k	C15	10uF
R16	4k7	C16	1uf
R17	10k	C17	100uF
R18	10k	C18	100uF
R19	22R	C19	100uF
R20	22k	C20	100n
R21	10k	C21	100p
R22	18k	C22	1uF
R23	100k	C23	2n2
R24	100k	C24	33n
R25	10k	C25	1n
R26	10k	C26	39n
R27	10k	C27	330p
R28	10k	C28	10uF
R29	10k	C29	220n
R30	10k	C30	10uF
R31	22k	C31	100p
R32	10k	C32	220n
R33	47k5	C33	10uF
R34	47k5	C34	6n8
R35	10k	C35	100p
R36	47k5	C36	10uF
R37	150R	C37	100n
R38	100k	C38	100n
IC1	LF353N	BIAS	22k
IC2	NE570	CANCEL	10k
IC3	MN3005	CLOCK	1M
IC4	MN3101	DELAY	1MB
Q1 - Q4	MPSA18	FDBK	50kB
D1	1N5817	MIX	50kB
D2	1N4148		

(i) How to hook up the MN3005 or MN3205/CoolAudio V3205

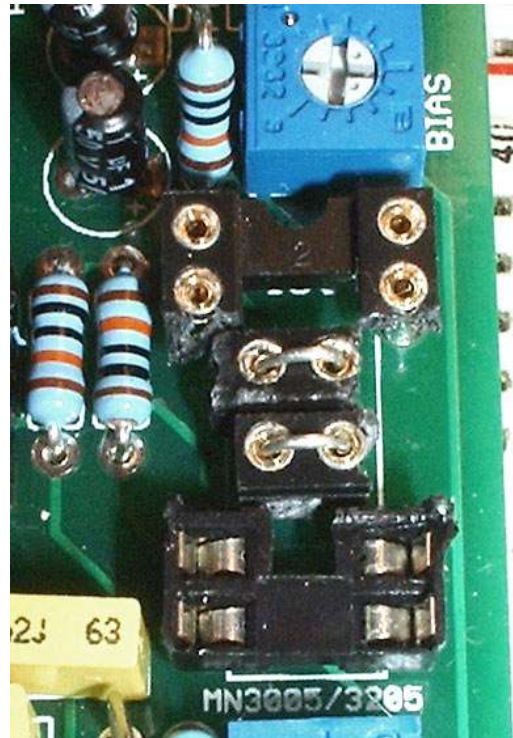
Switching between the two different types of BBD's requires changing two jumpers underneath the IC3 placement on the board.



BBD	Clock	Compander
MN3005	MN3101	SA571N
MN3205	MN3101	SA571N
V3205	V3102D	V571D

You can use the LF353 op-amp for any version, or sub another quality dual op amp in its place. So far I have verified the MN3005 on my prototype. I've got the V3205 combo hooked up, but no delay yet. I need to spend some time trying to dial it in. AFAIK, you should be able to use the MN3101 and SA571N with the V3205, if you do not have the Cool Audio version of the clock and compander. One other prototyper has built a working V3205 version, some I am confident the design is working as it should.

(ii) A note about hooking up the jumpers: this is how I did mine so I could switch them out easily.



You could also put those sockets for the jumpers underneath the board, but if you are using PCB mounted pots it might be a tight fit (or not fit). This was an oversight on my part when placing them in the layout. Actually, I kind of prefer this method, though, because you can't change the jumpers without first removing the BBD, so there is less of a chance of hooking it up incorrectly. Of course, if you know you only want to build a particular version, you can just solder the jumpers directly to the board without the sockets. I'm hoping you guys will try both versions, though, since we are prototyping here. ☺

(iii) Trimpots

For the trim pots, the standard one from **smallbear** will be a little too big (although you may be able to squeeze them in or put them on the bottom of the board).

I used the following trimpots:

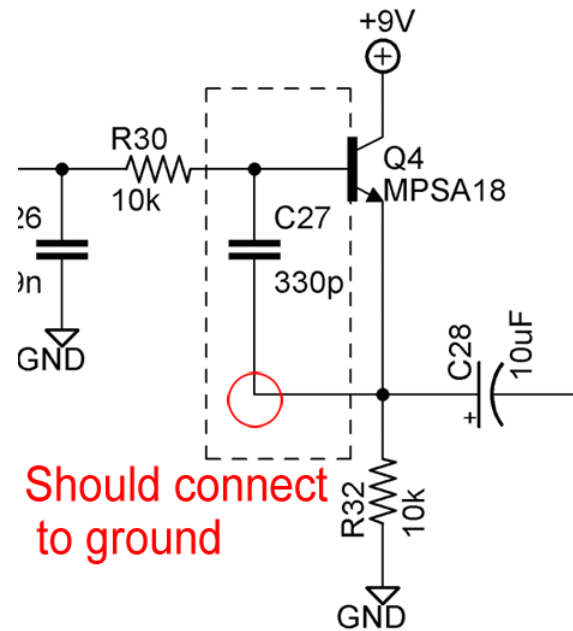
<http://www.mouser.com/Search/ProductDetail.aspx?R=3362P-1-105LFvirtualkey65210000virtualkey652-3362P-1-105LF>
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(iv) D1

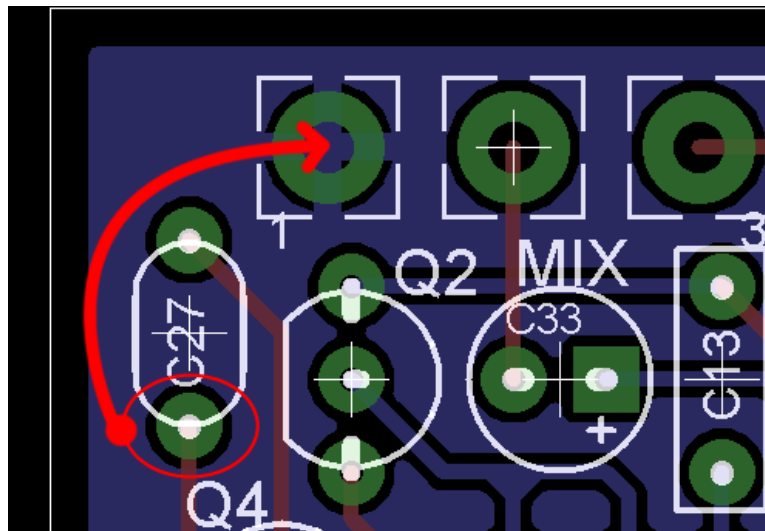
The reverse diode protection will probably be changed to the more standard 1N400x to ground for the final version. If you don't have a 1N5817 you can sub a 1N4007, 11v or 12v Zener.

(iv) Errata

There is one mistake I have found so far. C27 should actually connect to ground, not the emitter of Q4.



Fortunately, it's an easy fix. You just need to move the lead over to the grounded pin of the feedback control.



You can see how I did it on my completed build.



That's it so far. What I'm hoping for is your feedback on the builds, how well they are working, what problems you encounter or mistakes you find. I want to get this right the first time, so I hope you guys know I appreciate your participation greatly. When you are ready, please forward your comments to me at brian@madbeanpedals.com

THANK YOU! ~ Brian