

nonlinearcircuits

Timbre & Timbre build & BOM

This is based on the Buchla Timbre circuit, except there are 2 of them and it is all smd ☺

The only changes to the original version are to fit the signal levels to Eurorack standard. The circuit will deliver some noise when there is no input signal so it is best to patch it directly to a VCO or patch a VCA downstream. The original Buchla Timbre was the waveshaping section of a VCO so there was **always** an input signal.

BOM

VALUE	QUANTITY	DETAILS
47pF	2	0805 25V rating or higher
10nF	2	0805 25V rating or higher
100nF	4	0805 25V rating or higher
10µF	5	0805 25V rating or higher Mouser No: 81-GRM21BR61E106KA3L (or similar)
1k	4	0805
2k2	2	0805
3k3	2	0805
4k7	2	0805
6k8	2	0805
10k	4	0805
18k	2	0805
22k	2	0805
30k	2	0805
33k	6	0805
39k	2	0805
47k	2	0805
51k	6	0805
68k	4	0805
75k	2	0805
91k	2	0805
100k	6	0805
120k	2	0805
150k	12	0805
240k	2	0805
470k	4	0805
680k	2	0805
1M5	2	0805
TL072 or TL082	6	SOIC Tayda: A-1136
TL074 or TL084	2	SOIC Tayda: A-1137
J112, J308 or J309 (get J112 as 1st choice)	2	SOT-23 Mouser #s: 512-MMBFJ112 or 863-MMBFJ309LT1G or 771-PMBFJ309215 or 512-MMBFJ309 (marked J108 on PCB – DO NOT USE J108)
BC857	2	PNP SOT-23 Tayda: A-1345 (marked bc557 on PCB)
10 Pin 2.54mm Single Row Pin Header Strip	2	Tayda: A-197 (cut to size)
10 Pin 2.54mm Single Row Female Pin Header	2	Tayda: A-1306
Eurorack 10 pin power connector	1	Tayda: A-198
S1JL or similar, optional - for reverse voltage protection	2	SMD, standard power diode 200-600V 1A, dot on PCB indicates CATHODE (stripe) SEE NOTES #3
LL4148	4	SOD-80 Mouser Part No: 512-LL4148
100k POT	6	Tayda: A-1848
100k trimpot	2	Tayda: A-2506

3.5MM SOCKET Kobiconn style	6	Tayda: A-865 or preferably get Thonkiconn Jacks (PJ301M-12) from Thonk or Modular Addict
10-11mm stand-off and screws to suit	1	

Additional shopping notes:

1. The prices for these capacitors drops to approx. 10c each when buying more than 10....and you should always get plenty of spares, it is easy to drop and lose smd parts.
2. S1JL Power diode for Reverse voltage protection - Mouser Part No: 821-S1JL. Any similar rectifier with at least 1A rating should be okay.

Some errors on the PCB silkscreen (noted in the BOM):

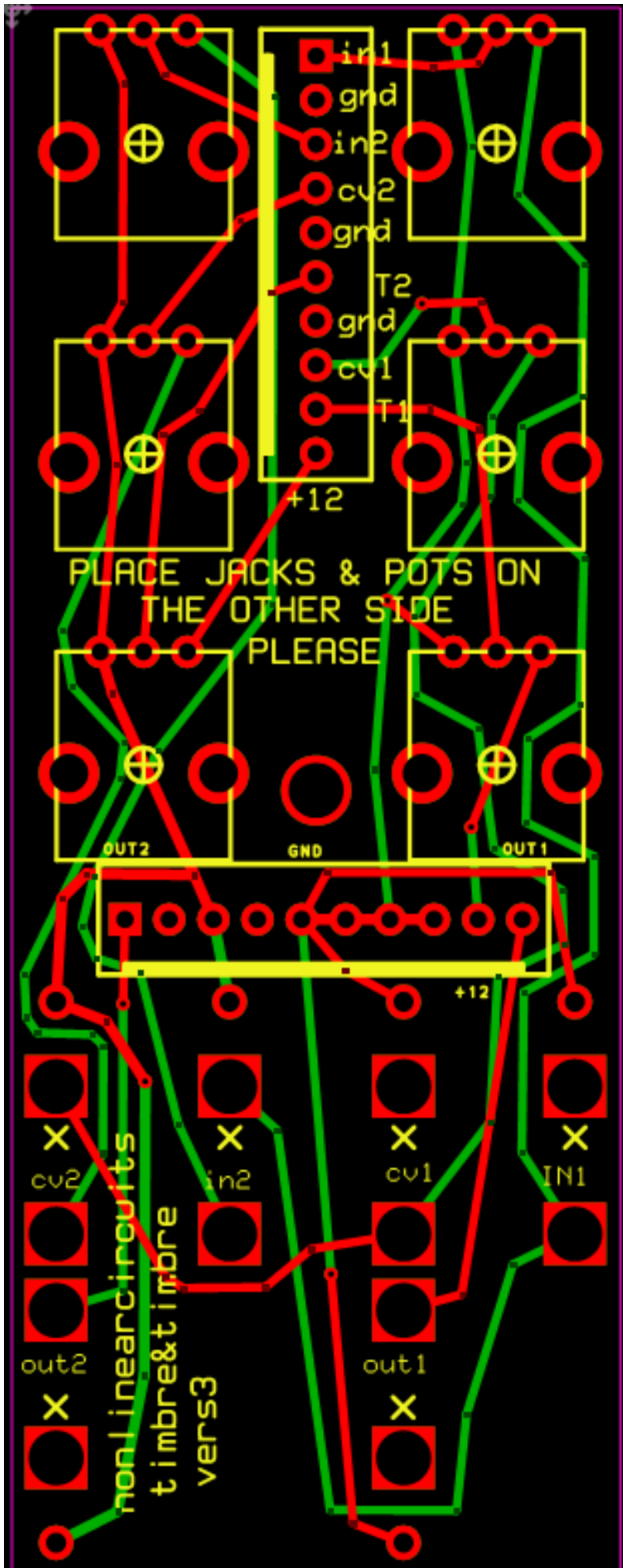
The 'bc557' printed on the PCB should be BC857, which is the SOT-23 version.

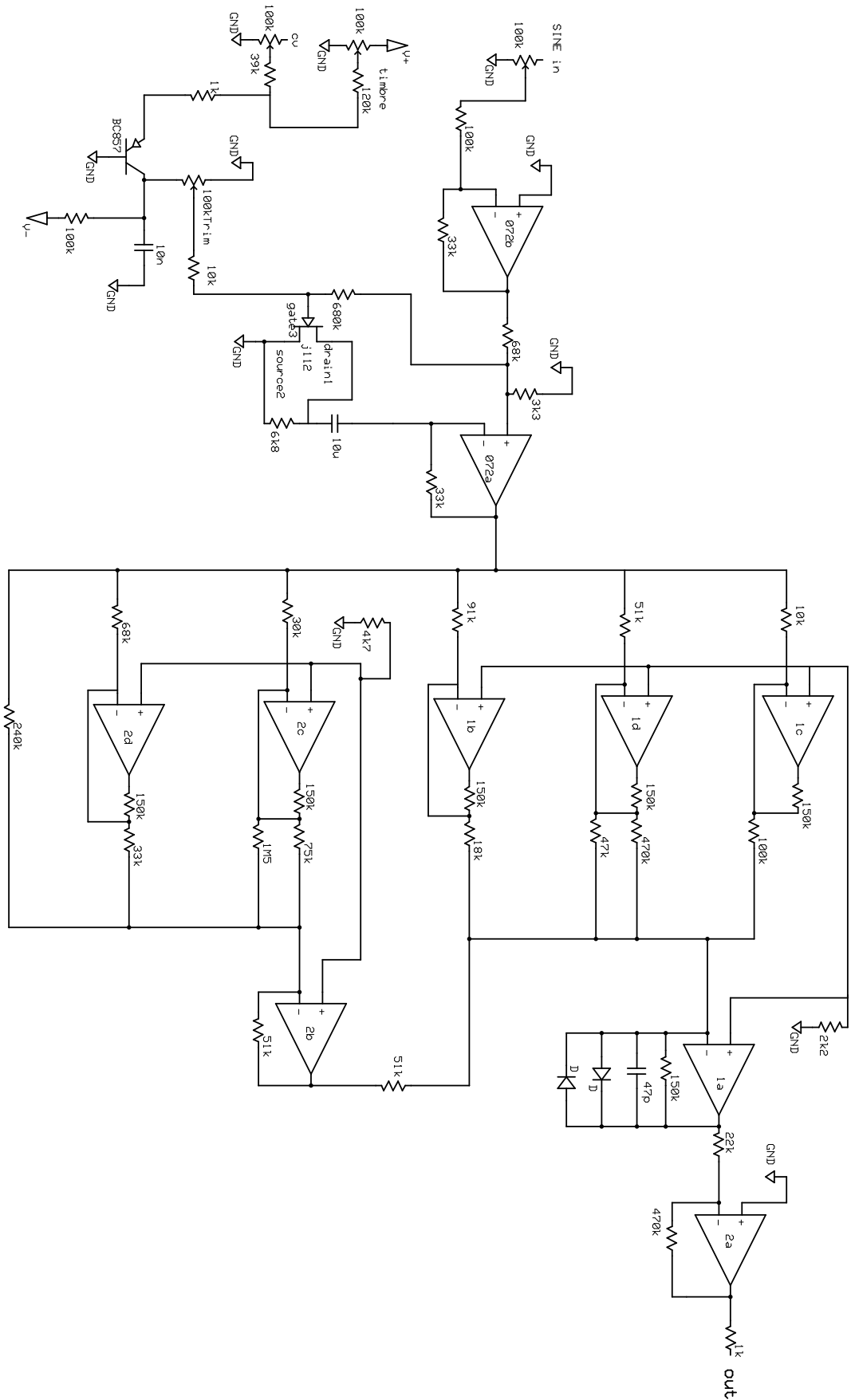
The 'j108' for the 2 FETs should be 'j112', for whatever reason the thru-hole version of J108 works on the thru-hole single Timbre, but the SOT-23 version does not work properly, so just use J112.

SETUP

Patch in a sinewave, monitor the output with an oscilloscope or just listen to it if you don't have a 'scope. Turn the CV and Timbre pots to zero and adjust the trim-pot to the point JUST BEFORE the sinewave starts to distort.

If listening to it, adjust the trim-pot so you can hear a clean sinewave, turn it up a little bit until you hear the sinewave start to change, then wind it back to just before this point.





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buchla timbre	
drum : andreauf	Rev 1.0

One Timbre shown, two circuits on the PCB.

