

# **nonlinearcircuits**

## **Doof Build Guide & BOM vers 5 PCB**

Doof is a drum module. The design is typical of early 80s drum modules, best to look at the schematic to grok it. In this design, the VCO is a trimmed down version from the NLC dual OTA VCO and the VCA is the same as the ones in the NLC Matrix Mixer.

This version has lost the LED but gained CV control over decay, it also has reverse voltage protection.

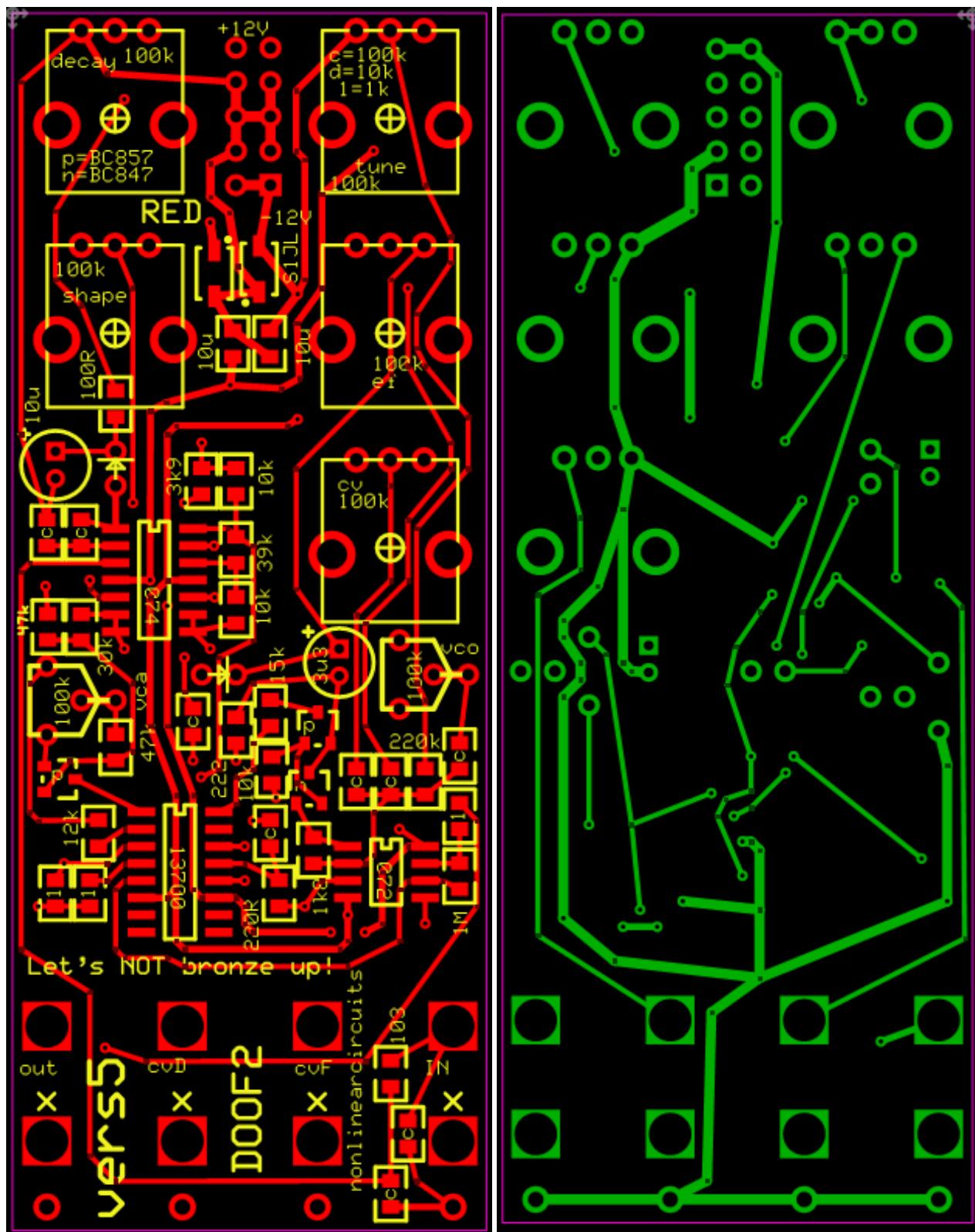
It can be identified by the 'vers 5' and 'let's NOT bronze up' printed on the PCB. The panel will have the decay CV input (CVD) and printed on the back is 'for vers 5 PCB'.

One suggested mod is to replace the 10nF capacitor on the input with a link to create 808 style extended drum hits with gates rather than triggers.

Setup - Once built, tweak the VCO trimpot to get a good range from the panel pot, you should expect approx. 14Hz up to 11kHz.

with nothing patched to the inputs, adjust the VCA trimpot so there is no output signal heard.

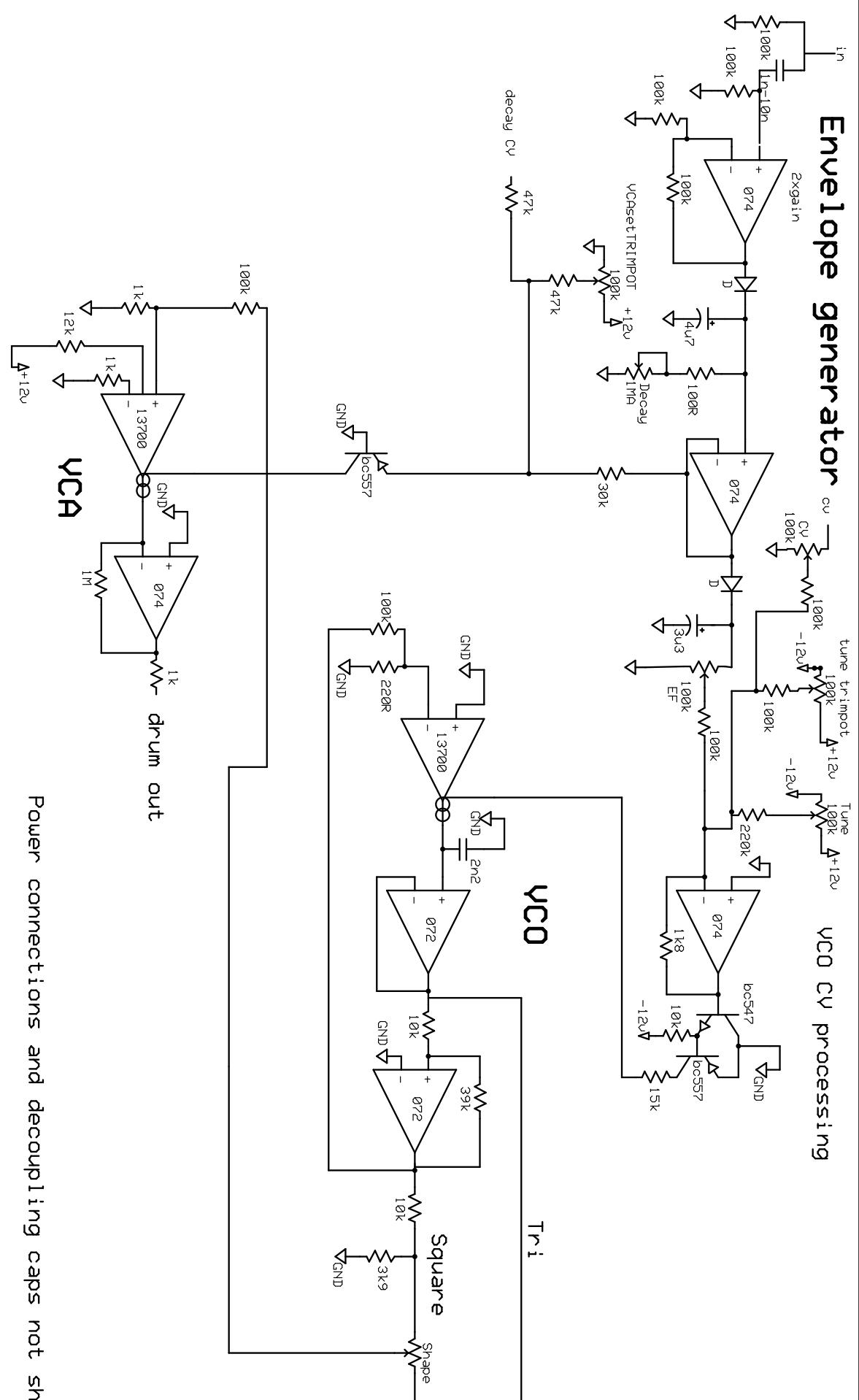
Done!



**BOM (get spares, you might drop something)**

(...) indicates label on PCB

<b>Component</b>	<b>quantity</b>	<b>notes</b>
100k pot	5	Alpha style 
socket	4	Kobiconn style 
10 pin power connector	1	
100k trimpot	2	
LM13700	1	SMT SOIC - 0.050 pitch
TL074	1	SMT SOIC - 0.050 pitch
TL072	1	SMT SOIC - 0.050 pitch
BC847 (n)	1	SMT - SOT-23
BC857 (p)	2	SMT - SOT-23
10uF electro	1	Thru-hole 25V
1N4148 diode	2	thru-hole
2.2μF electro (3u3)	1	2mm lead spacing, minimum 25V voltage rating
10μF 25V	2	0805, minimum 25V voltage rating
2.2nF (222)	1	0805
10nF (103)	1	0805
S1JL or similar	2	rectifier diodes SOD123
100Ω	1	0805
220Ω	1	0805
1k (1)	3	0805
1k8	1	0805
3k9	1	0805
10k (d)	3	0805
12k	1	0805
15k	1	0805
30k	1	0805
39k	1	0805
47k	2	0805
100k (c)	9	0805
220k	1	0805
1M	1	0805



Power connections and decoupling caps not shown

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### Doof

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