

# nonlinearcircuits

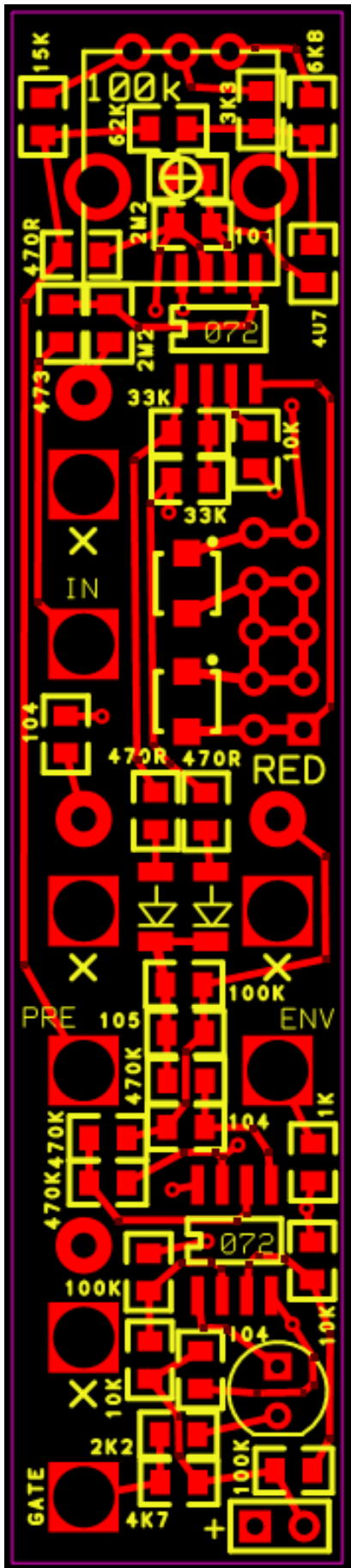
## Envelope Follower Build & BOM

This module is based on the EF found in the Buchla Easel. The main differences being a gain pot rather than a hi/lo switch and a comparator stage to give a gate output. The 1/4" jack is connected to the switch of the 3.5mm input jack. Otherwise this is an easy module to use, plug in a microphone or guitar or whatever, adjust the gain pot so the LED comes on when you speak or play. Patch the outputs to wherever you want.

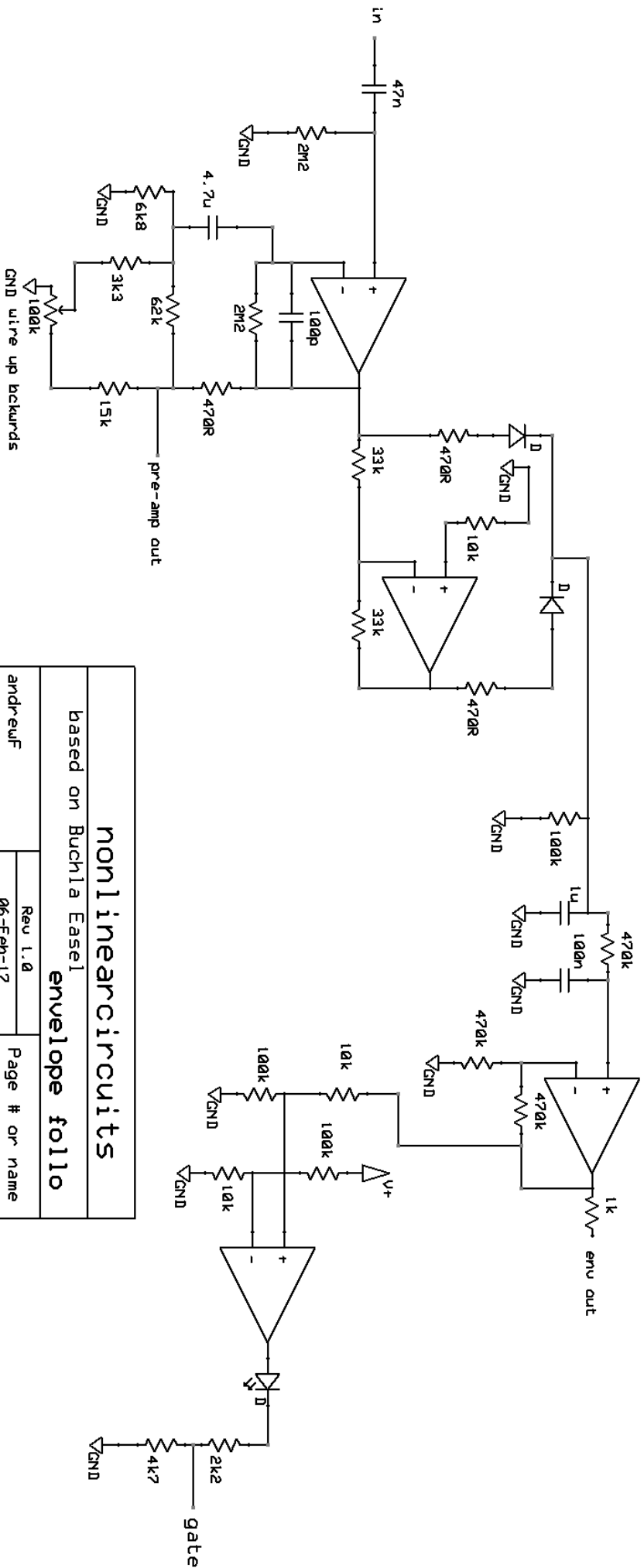
### BOM

component	quantity	notes
470R	3	0805
1k	1	0805
2k2	1	0805
3k3	1	0805
4k7	1	0805
6k8	1	0805
10k	3	0805
15k	1	0805
33k	2	0805
62k	1	0805
100k	3	0805
470k	3	0805
2M2	2	0805
101 (100pF)	1	0805 at least 25V rated
473 (47nF)	1	0805 at least 25V rated
104 (100nF)	3	0805 at least 25V rated
105 (1uF)	1	0805 at least 25V rated
4u7 (4.7uF)	1	0805 at least 25V rated
LL4148	2	general purpose diodes SOD-80
TL072	2	SOIC Tayda: A-1136
S1JL or similar, optional - for reverse voltage protection	2	SMD, standard power diode 600V 1A, dot on PCB indicates cathode (stripe) <i>OPTIONAL</i>
100k pot	1	Tayda: A-1848
LED	1	5mm
3.5mm jacks	4	Kobiconn style, Tayda: A-865
6.35mm / 1/4" mono jack	1	
eurorack 10 pin power connector	1	Tayda: A-198

- The passives are all 0805 and ICs are SOIC.
- Make sure your capacitors are rated for at least 25V; usually 0805 caps are 50V rated but always check.
- The combination of the LED, 2k2 and 4k7 determines the brightness of the LED and the voltage of the gate output. I used 2k2 and 4k7 as the LED requires a 6k8 resistor ( $2k2 + 4k7 = 6k9$ ...near enough). If your LED is too bright, you need to change BOTH resistors and keep their ratios about the same, it is just LED brightness so we can safely round off values.
- If we said  $2k2 = R$ , then  $4k7 = 2R$  So if your LED requires a 10k resistor, you could change the 2k2 to 3k3 and change the 4k7 to 6k8 ( $3k3 + 6k8 = 10k1$ ). This would give a gate output of approx. 6V.
- The 6.35mm / 1/4" jack should fit to the panel without touching the case rails. You should be able to position the jack so it can be wired to the PCB with a couple of short wire clippings, maybe the ones from the LED will suit. Connect the active or live tab to the hole marked '+', the hole nearest the corner of the PCB is for the ground connector.
- One other point, it was hard to label the 101 (100pF) and 2M2 components at the top of the PCB, next to the TL072. The 101 (100pF) goes next to the TL072, the 2M2 goes above it. If you mix them up it does not matter as they are in parallel anyway.



panel is not to scale



<h3>nonlinearcircuits</h3>	
based on Buchla Easel	
<h3>envelope follo</h3>	
Rev 1.0	Page # or name
andreuF	
06-Feb-17	