nonlinearcircuits

COLLUDE: envelope follower and hi-gain amp

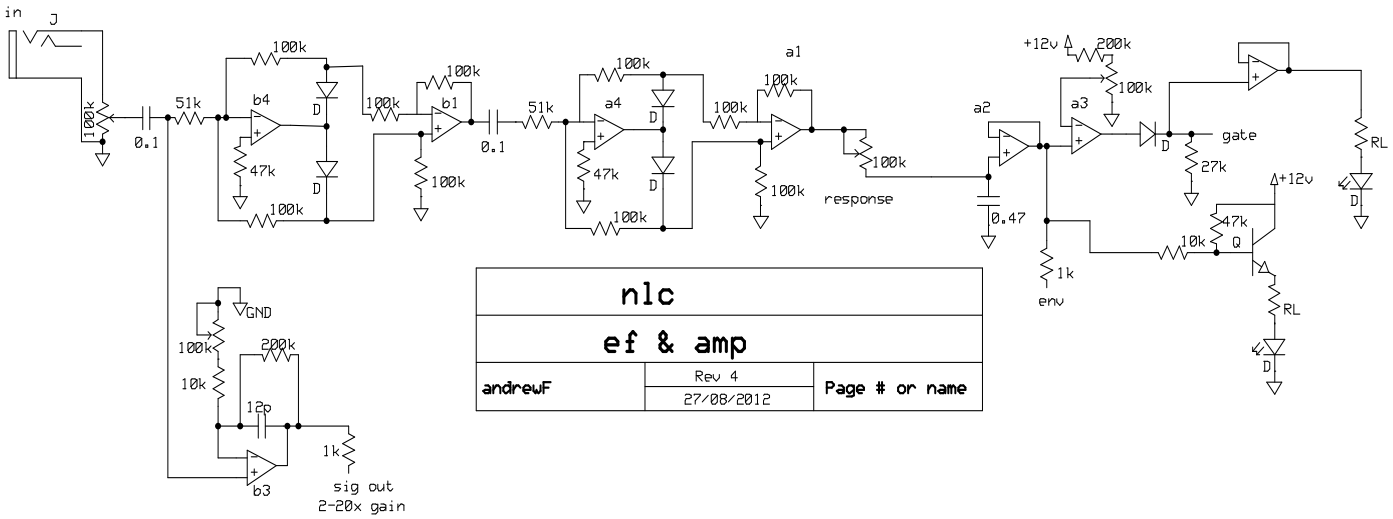
Build info & BOM vers.1 (31/3/2015)

This module is a fairly straightforward envelope generator (based on the Electronotes design) and gain stage. The gain stage can be set to increase a signal's amplitude from 2X up to 20X. This allows signals from guitars or microphones to be ramped up to levels suitable for processing in a modular synth. The envelope follower has been designed to have a somewhat ridiculous amount of gain so that very low level signals can be used to form much larger envelopes than they should, there is a trade-off when using this function as the envelope is quite jittery and dirty (over-sensitive), this is not necessarily a bad thing. For normal use, say with a guitar, the *respond* pot would be kept quite low.

The *gate* pot controls the comparator threshold level; use this to get gates as wide or narrow as you wish in response to the incoming signals.

The 100k resistors can be 1206 or 0805 smd. All other resistors can be thru-hole but you can easily fit 0805 smd across the holes if you prefer.

Version 1 PCB is the same as V2, except change two 100k 0805 (or 1206) resistors to 200k and change two 51k thru-hole resistors (or 0805) to 22k. See image on pg3



part	quantity	notes
TL074	2	quad op amp
BC547	1	npn
1N4148	5	any general purpose diode ok
LED	2	5mm
100k pot	4	like these: 100k pot at Tayda
3.5mm jacks	4	Kobiconn type
10 pin connector	1	Eurorack 10 pin power connection
100k	8	1206 or 0805 smd
10R	2	thru-hole or 0805 smd
1k	2	thru-hole or 0805 smd
10k	2	thru-hole or 0805 smd
22k	2	thru-hole or 0805 smd
27k	1	thru-hole or 0805 smd
47k	3	thru-hole or 0805 smd
200k	4	thru-hole or 0805 smd (on version 1 PCB must be 0805or 1206)
RL	2	choose values to suit LEDs (ie: reg = 470R, hi-brite = 4k7) thru-hole or 0805 smd
10uF	2	lead spacing 2mm
100nF (104)	2	for decoupling, lead spacing 2.5mm
12pF (12)	1	lead spacing 2.5mm
100nF (104)	2	lead spacing 4.5mm
470nF (474)	1	lead spacing 4.5mm

Building

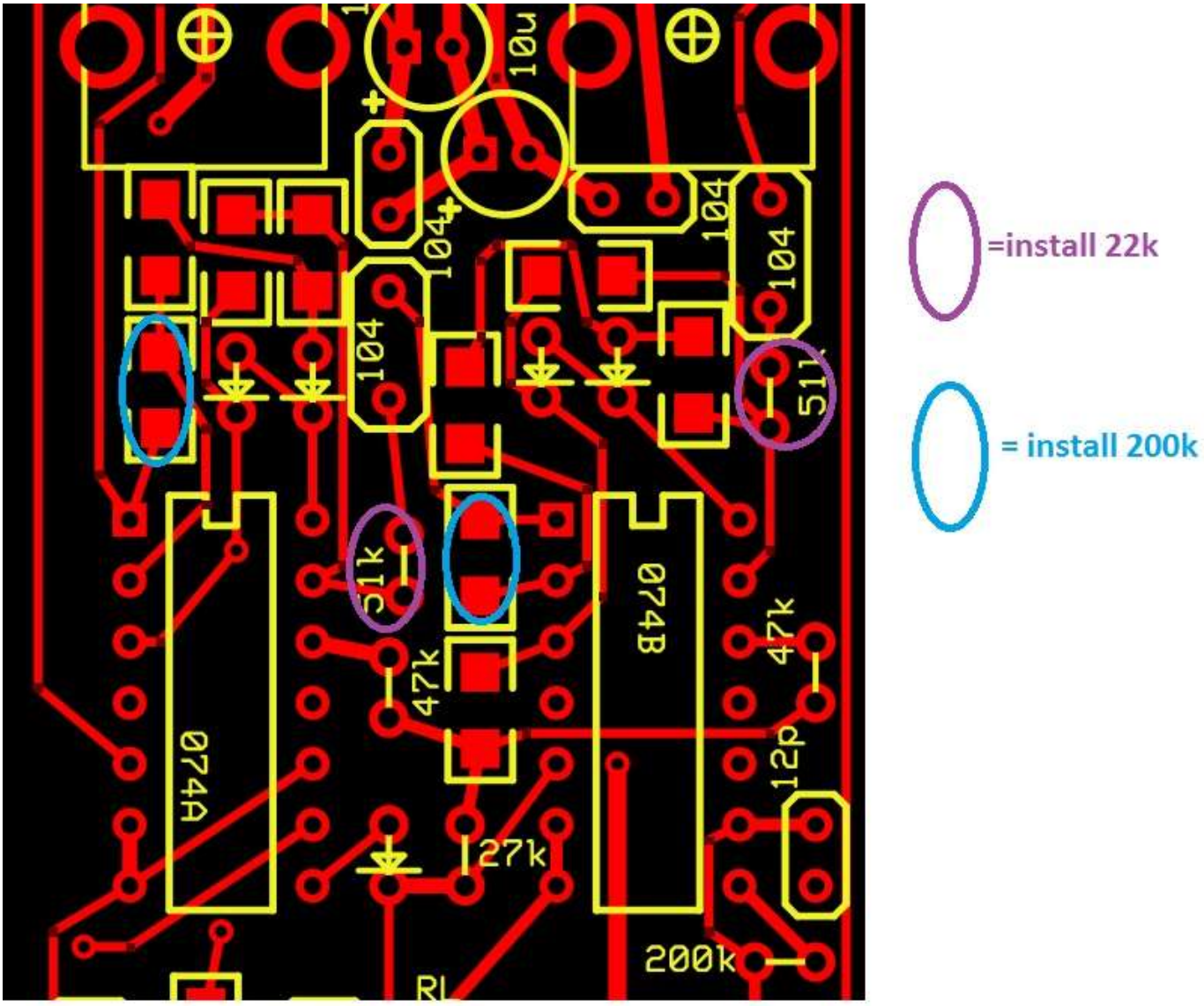
Start with the lowest profile components (the 1206 sized 100k resistors) and work your way up.

Once the PCB is sorted, clip the pots into place on the back of the PCB but **do not solder them yet.** Also put the LEDs thru their holes (short lead = sqr hole) but do not solder.

Attach the jacks to the panel with the negative tabs facing downwards.

Mate the PCB to the panel, ensure everything lines up nicely and push the LEDs into their panel holes. Once it is all looking good solder on the pots, LEDs and jacks.

IMPORTANT Use some trimmed resistor leads to connect the jacks' ground tabs to the PCB.



MODS FOR VERS.1 PCB