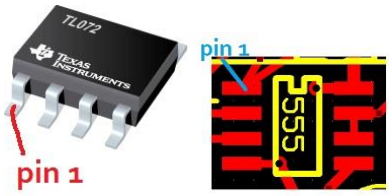
This module was developed for the cellF project where we needed an EG that would work off a trigger. It will, of course, work with gates as well; once the attack stage is over the envelope will stay high until the gate finishes and then it begins the release stage. A trigger or gate on input #1 will trigger all three envelopes; this function is disabled if you patch a signal into the other inputs.

Using 22µF capacitors, you can get envelopes lasting approx. 25 seconds. Use larger caps if you want longer envelopes.

The LEDs are an integral part of the circuit, use ultra- or super- bright LEDs. Depending upon the V_{ON} of you LEDs, you may need to adjust the 1k or 4k7 resistors to get envelopes hitting the desired voltage. As is, you should get 5-7V envelopes for most LEDs.

Instructions – Solder paste is stencilled onto the PCB for the surface mount components. Place these on the PCB with tweezers, no need to solder them on; this is done in the reflow oven. It doesn't matter if you smear the solder paste a bit or components are not placed perfectly, near enough is good enough. Though it is important to place the chips correctly:



BOM – ***brackets indicate labelling on PCB***, ie – (104) = 100nF

component	quantity	notes
10R	2	thru-hole
1k	3	0805
4k7	3	0805
10k	6	0805
100k	3	0805
1N4148 diode	6	thru-hole
LED	3	
BC847	3	NPN SOT-23
10 pin Eurorack power connector	1	

100nF (104)	7	0805
10uF	2	thru-hole, 2mm lead spacing
22uF	3	thru-hole, 2mm lead spacing
TL072	2	SOIC 0.050 pitch
555	3	SOIC 0.050 pitch
100k pot	6	
kobiconn style socket	6	

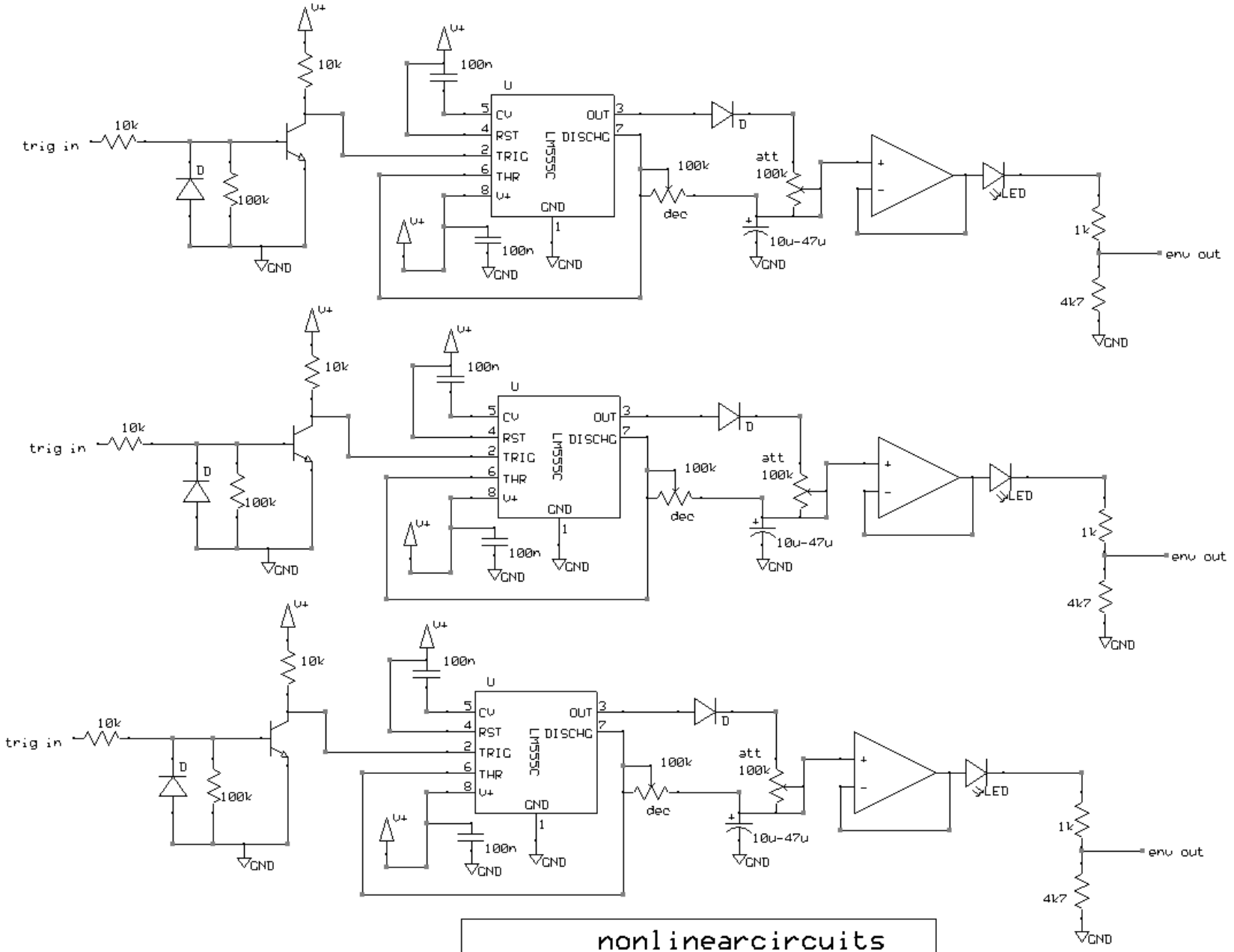
When you have finished placing the surface mount components on the PCB, **carefully** bring it over to the oven for cooking. After it has cooked and cooled (10-15 minutes) you can install the thru-hole components as usual.

Place the sockets on the panel, make sure the ground tabs aline up with the holes on the PCB. Place the pots on the PCB, **do not solder them yet.** Install the LEDs, long lead into square hole.

Mount the PCB onto the panel, place the 2 nuts on the top two pots. Check everything fits together nicely.

It is good to lift the PCB a little at the socket end, so it is not sitting hard against them. This way the PCB is at a 10-15 degree angle to the panel.

Once it all looks nice & snug, solder up the pots and sockets. Push the LEDs into place and solder them too. After clipping off the LED leads, use them as ground connections from the sockets to the PCB.



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