nonlinearcircuits

THIS 2 SHALL PASS build & BOM

This module grew from one of those throwaway circuits in a 70s electronics magazine for a 2 input passive analogue XOR. Of course it is great and production of CMOS XOR 4030 and 4070 chips was immediately halted………no.

Does it do interesting things to your signal tho? YES!

So this module is a dual version, with three inputs (it was just an extra resistor and transistor). It works in very different ways depending how it is patched. If you want to get close to XOR behaviour, use the top and bottom inputs, leave the middle one empty. Then again if you want a voltage controlled "XOR" (using " " because it isn't really XOR but wants to be), feed your signals to the top and bottom inputs and a CV signal to the middle input.

Try switching around the signals on different inputs, to get different results. Feed it anything: CV, audio rate, gates, mix them up. Generally with audio signals it sounds like a Ring Modulator, adding CV to the middle input (but feel free to experiment) it sounds like a VC Ring Modulator.

Anyway, this is probably the easiest NLC module to build and a nice, gentle introduction to soldering smd.

One thing to watch when assembling – the jacks are very closely spaced so be careful the ground pin is not touching the jack above it. This happened on one of my proto-types and grounded that input. If it does happen just insert a fine screwdriver or tool and bend the ground pin back out of the way.

BOM – The Tayda & Mouser part numbers are given as examples

VALUE	QUANTITY	DETAILS
1k	2	0805
4k7	6	aka 4.7k 0805
22k	2	0805
BC847	6	sot23-3
3.5MM SOCKET	8	Tayda: A-2563
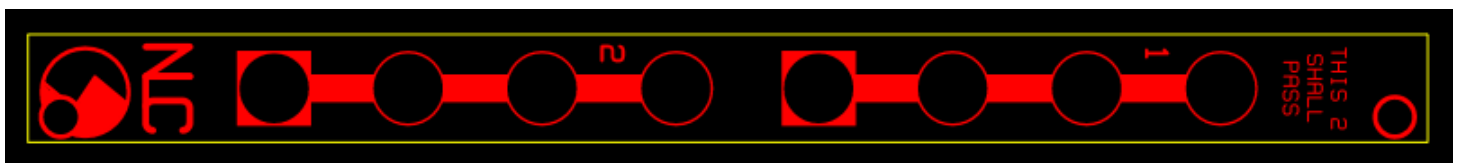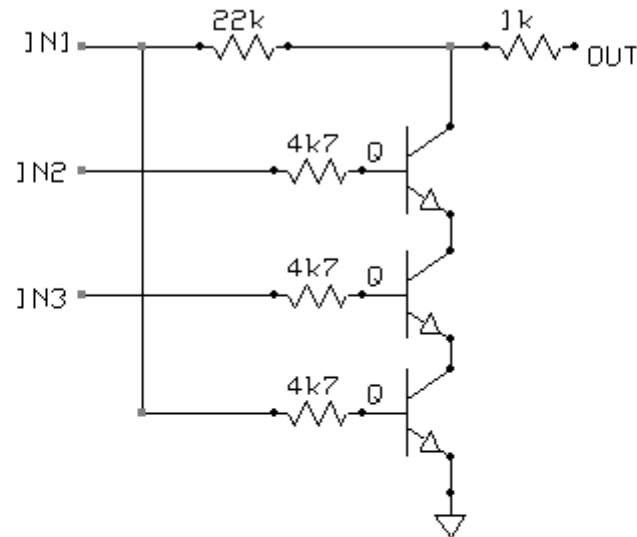
same circuit twice on PCB

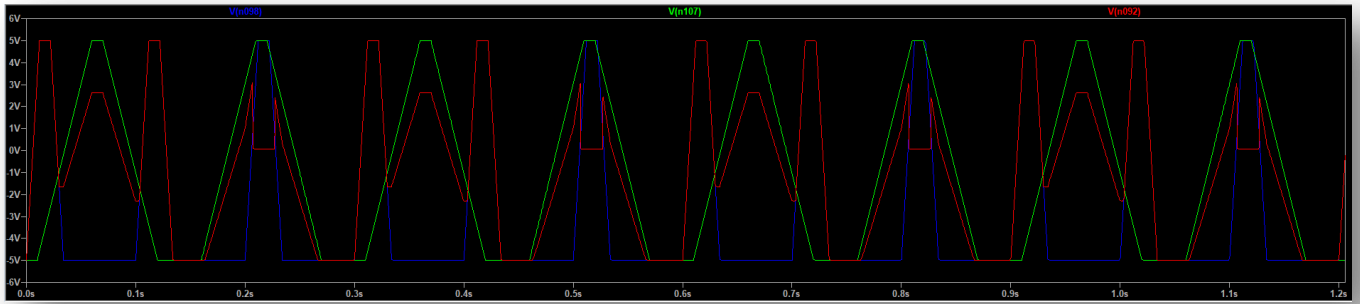| nonlinearcircuits		
this 2 shall pass		
andrewF	Rev 1.0	Page # or name
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LTSpice examples

Blue & green are inputs, red is output

Lt blue, dark blue & green are inputs, red is output