

nonlinearcircuits

Stooges build & BOM

This module contains three individual jerk chaos circuits. They can be built to run at different frequencies and are quite responsive to incoming gates and CVs, not necessarily in terms of frequency, more making the outputs sync or change in response to the incoming signal.

Jerk chaos is, as the name implies, somewhat more violent than the smooth behaviour of the Sloth circuits, it can be used as a bouncing ball simulator, with a large spike/bounce to start then gradually smaller bounces after that.

The caps marked C1, C2 and C3 determine the approx. operating frequencies. You can use any values from 10nF (very fast) up to 10uF (very slow). The main point is all C1 capacitors must be the same value, C2 can be different to C1 but must be all the same and so on for C3. I would suggest using 100nF for C1, 470nF for C2 and 1uF for C3, but feel free to build it as you wish.

The resistors marked R? are generally not required and can be left empty. If installing 10uF caps for C1-3, you may find regions of periodicity or no oscillation at some pot settings, in which case you can experiment with a resistor on R? to limit the range of the Twitch pot, maybe 100k to start.

The LEDs should be clear lens super-bright or ultra-bright as they need to shine thru the panel and do not get to full brightness anyway. Any colour is okay, you can even experiment with bi-polar (probably too dim and may need to tweak the circuit a bit) or putting the LEDs in backwards for different behaviour (Lilt will stay mainly negative).



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

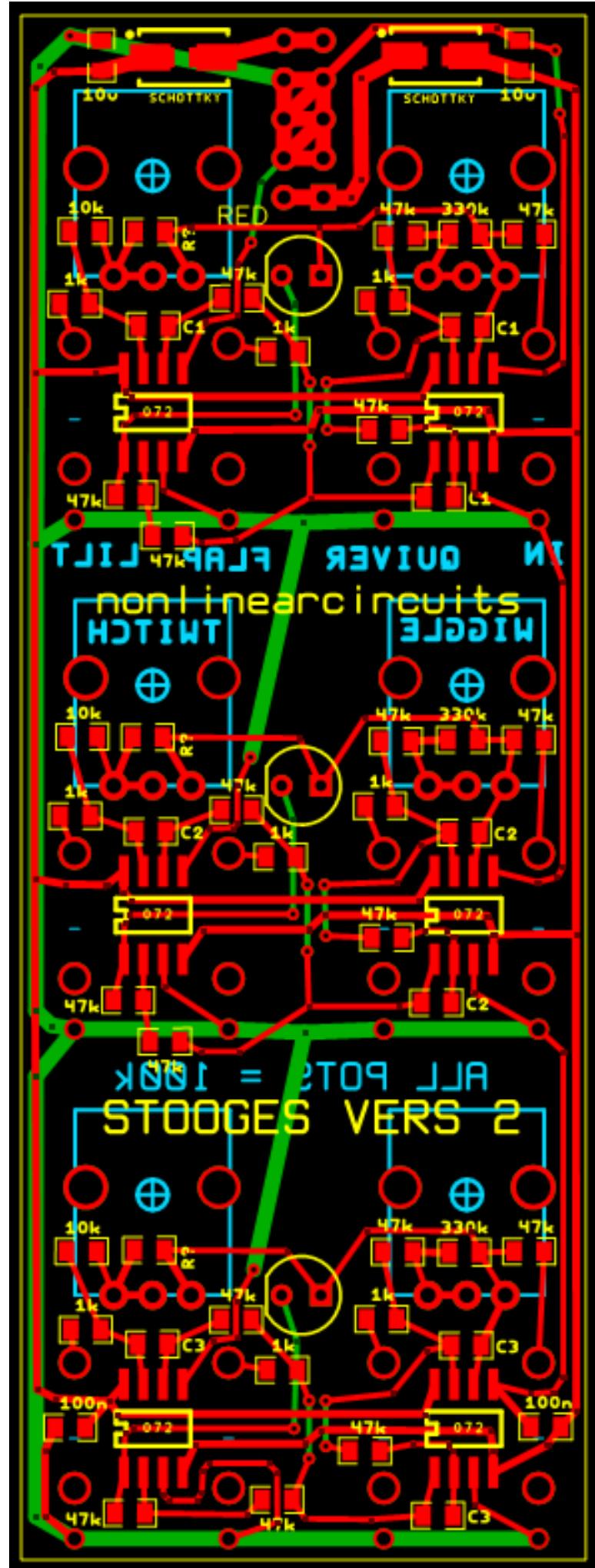
VALUE	QUANTITY	DETAILS
C1	3	0805 suggest 100nF
C2	3	0805 suggest 220nF-470nF (all three the same)
C3	3	0805 suggest 1uF
100nF	2	0805 Tayda: A-3511
10uF	2	0805 25V or higher voltage rating Mouser: 963-TMK212BBJ106MG-T or similar
R?	3	Usually not required, see intro above.
1k	9	0805
10k	3	0805
47k	18	0805
330k	3	0805
TL072 or TL082	6	Soic Tayda: A-1139
LED	3	3mm or 5mm super- or ultra-bright
Eurorack 10 pin power connector	1	Tayda: A-198 cut to size
S1JL, Schottky, power rectifier or 10R	2	SMD SEE NOTES #1. dot on PCB indicates CATHODE (stripe on component).
3.5MM SOCKET Kobiconn style	12	Tayda: A-865 or Thonkiconn Jacks (PJ301M-12) from Thonk, Synthcube or Modular Addict
100k pot	6	Tayda: A-1848 or similar

Additional notes:

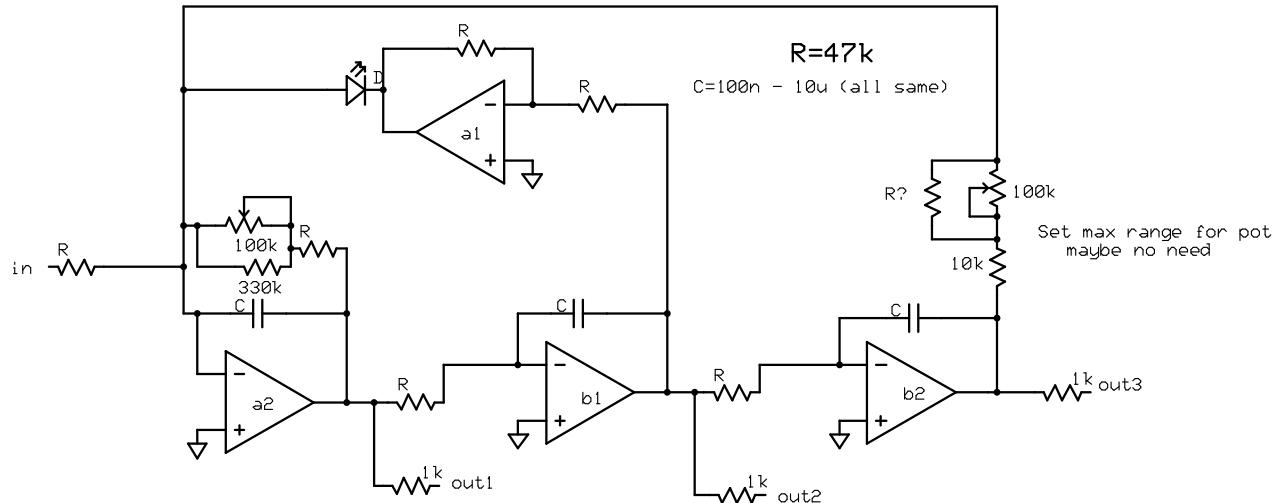
1. Schottky (best option) or standard power rectifier diode 50-600v 1A or more, or use a resettable fuse or just a 10R. Examples: BAT54GWX, PMEG2005EGWX, AEC-Q101, 20v, SOD-123, PMEG2005EH DIODE, SCHOTTKY, 0.5A, 20V, 1N400x or S1JL or similar.

2. The chips, resistors, caps are cheapest from Tayda. Schottky diodes, CMOS & 1uF, 10uF 25V 0805 caps from Mouser/E14/Farnell/etc.

3. Join the Nonlinearcircuits Builders Guild on FB:
<https://www.facebook.com/groups/174583056349286/> and ask questions there if you have any. If you prefer not to FB then email is fine.



Same circuit x 3 on PCB



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