

nonlinearcircuits

RAZORS build & BOM

This is a dual voltage controlled version of Razor on the Tinkle module. I have always enjoyed the Razor, especially when used with fast drum patterns, so it was inevitable this module would happen.

OUT 1 is normalled to IN 2 which gives a greater amount of harmonics. The same for CV 1 to CV 2.

The Razor circuit is designed to work with Sine and Triangle waves. It is a very rough frequency tripler, turning a sine wave into 3 spikes of differing shapes and amplitudes. These are further altered by the settings of the pots and the incoming CV. If the pots are turned to 0 or 10, then the effect is turned off, but can be turned on by CV. If turned to 0, then the CV should be positive going, if turned to 10, then the CV should be negative.



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

VALUE	QUANTITY	DETAILS
10uF	2	0805 25V or higher voltage rating
1k	6	0805
10k	18	0805
22k	2	0805
47k	2	0805
TL074 / TL084 / LF347	1	soic Tayda: A-1140
TL072 / TL082	1	soic Tayda: A-1139
LL4148 diodes	4	Tayda: A-1213
5V1 zener diodes	4	do not mix with LL4148. Tayda have 5V6 zeners, which will be ok: Tayda: A-6014
Eurorack 10 pin power connector	1	Tayda: A-198 cut to size
Schottky diodes	2	I use MBR0540 in a sod-123 package. Any with 30V+ and 0.25A+ ratings will do. dot on PCB indicates CATHODE (stripe on component).
3.5MM SOCKET Kobiconn style	6	Tayda: A-2563 or Thonkiconn Jacks (PJ301M-12) from Thonk, Synthcube or Modular Addict
100k pots	4	Best to use T18 (or similar) splined/knurled shaft pots as the spacing is tight. Tayda: A-4729
40 Pin 2.54mm Single Row Pin Header Strip	1	Tayda: A-197 snap into three 3 and two 4 pin sections, get spares

Solder the top PCB onto the header pins of the bottom PCB; position it as high as possible in case some extra soldering is required.

Additional notes:

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

2. 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.

3. For some reason pots are somewhat scarce these days. It makes no sense to me, I order 1500 at a time from my regular supplier and get them in 3 weeks. If you want to order a minimum 500 pots @ \$0.30 each contact Rita at sales1hongyuan@163.com. Shipping is a bit pricey, but should still work out cheaper than buying from Tayda or elsewhere.

For knurled shaft you want

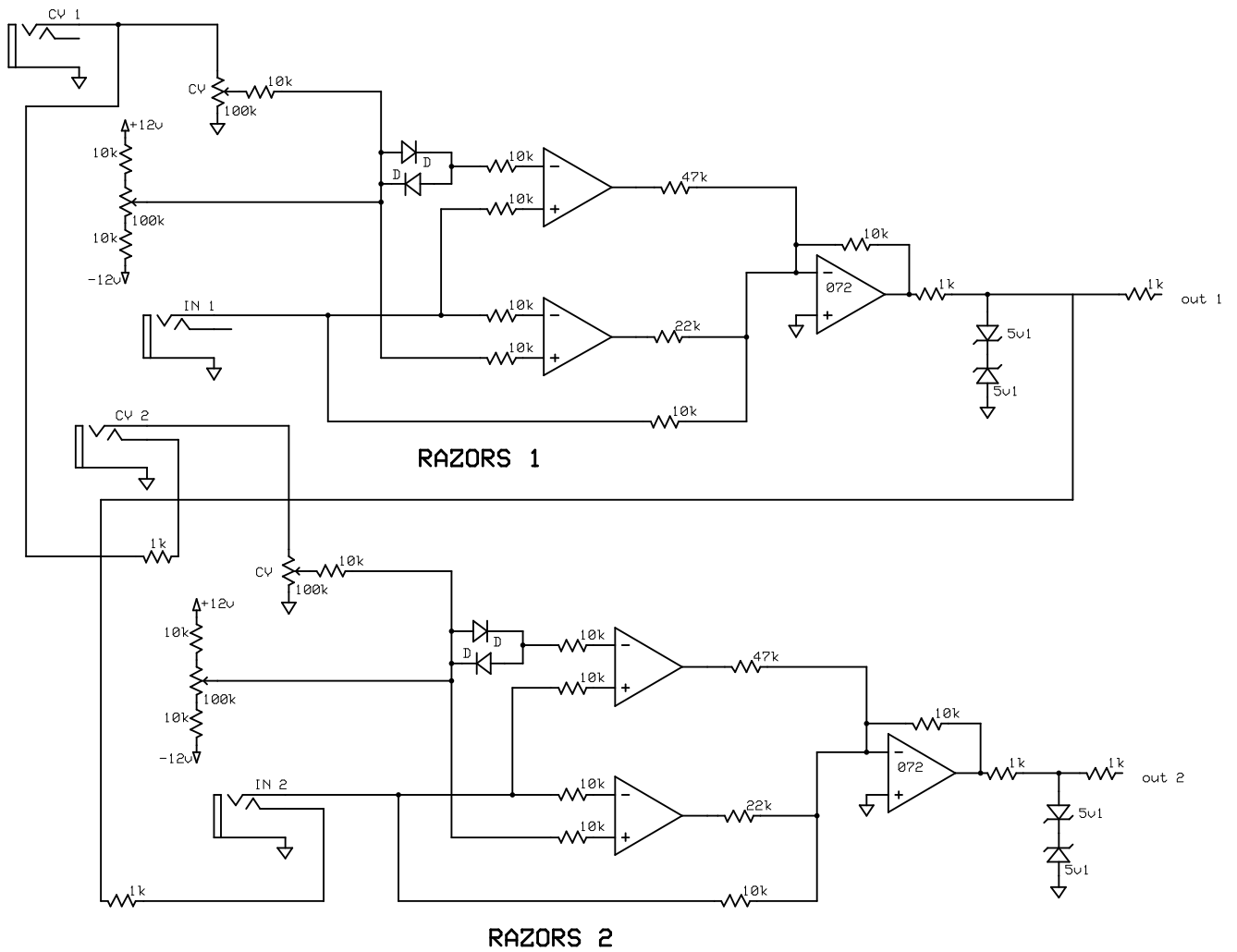
H09312NA B100K L15KQ-006

9mm single gang knurled shaft B100K rotary potentiometer ,no tab.
hardware (nuts+washer) .shaft dia 6.0mm

For regular shaft (note these are 6mm, ask if you want 6.5mm), you want

RV9312NO-SB15A1.5-B104-060 no tab

9mm single gang B100K rotary potentiometer,no tab. hardware
(nuts+washer) .shaft dia 6.0mm.



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