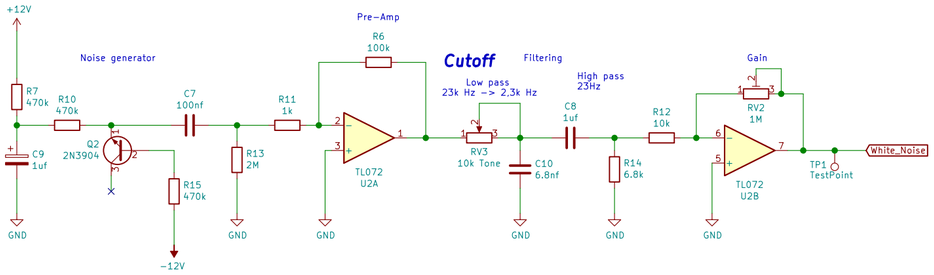
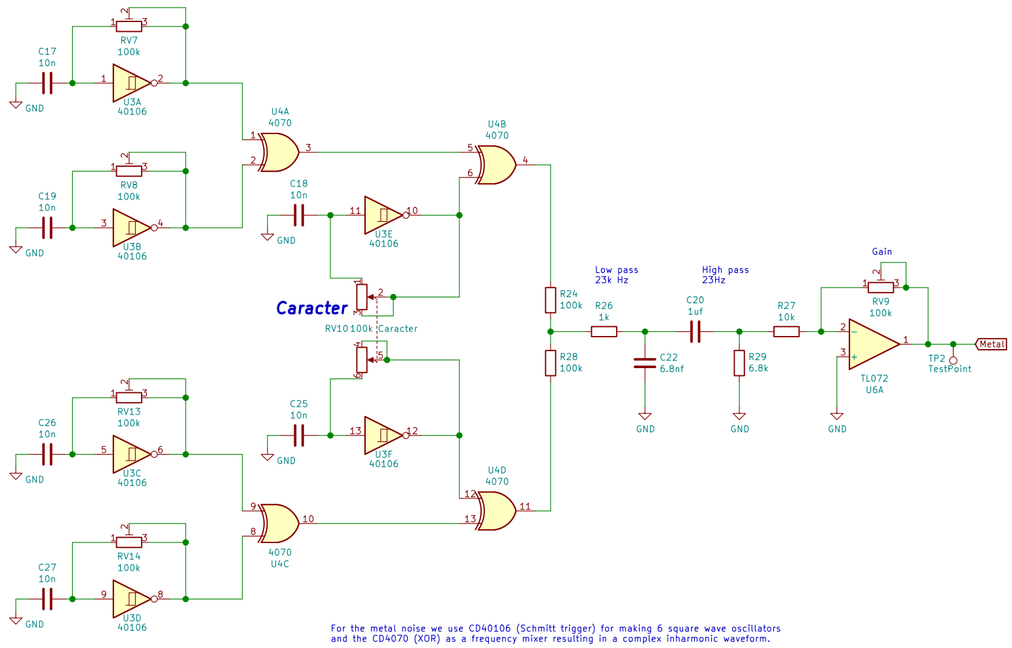
WHITE NOISE



Noise generator from MFOS, fitered to be between 20Hz and 20kHz with adjustable gain and adjustable low pass, thank you JaggedNZ
The noise source is the reverse−biased emitter−base junction of the transistor.
Cut off the collector of the transistor so that it doesn't act like an antenna picking up unwanted noise or EMI.
The BVEBO (Emitter−Base Breakdown Voltage) is exceeeded thus the transistor is operating in avalanche mode.

http://musicfromouterspace.com/analogsynth_new/NOISECORNREV01/NOISECORNREV01.php

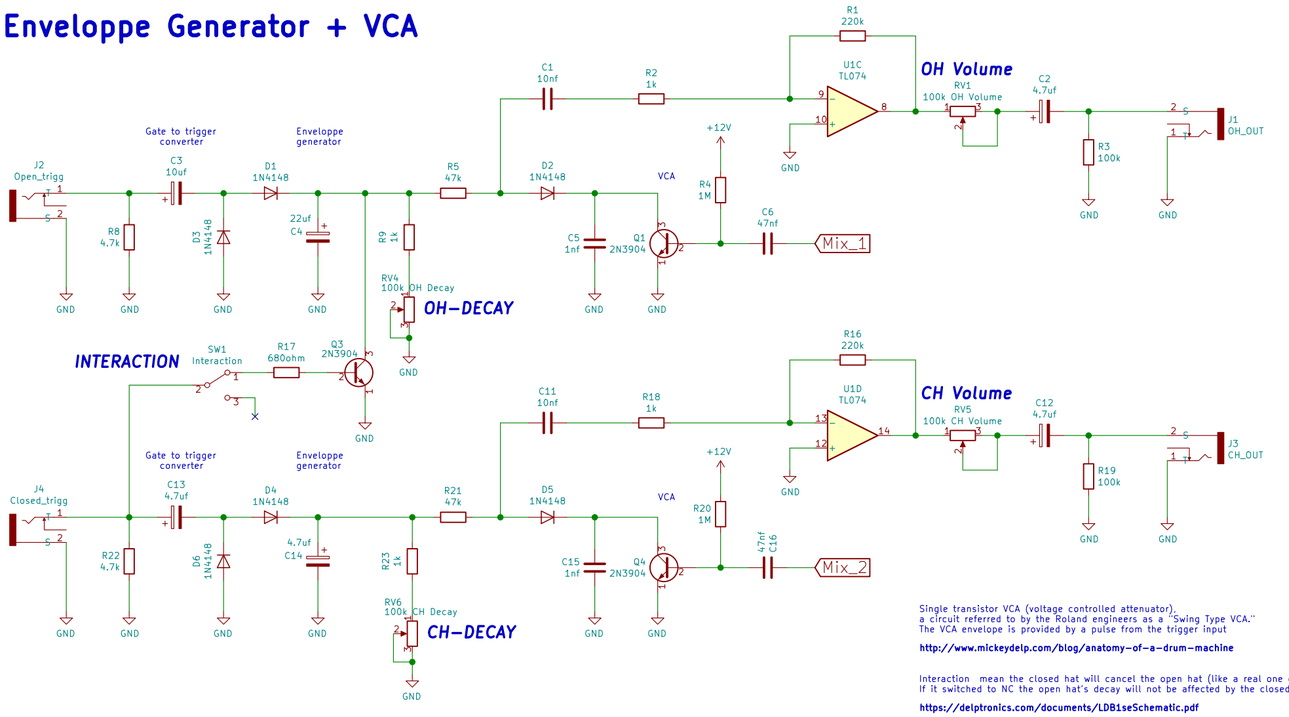
METAL NOISE



For the metal noise we use CD40106 (Schmitt trigger) for making 6 square wave oscillators
and the CD4070 (XOR) as a frequency mixer resulting in a complex inharmonic waveform.

https://hackaday.com/2015/04/10/logic−noise−more−cmos−cowbell/

Enveloppe Generator + VCA



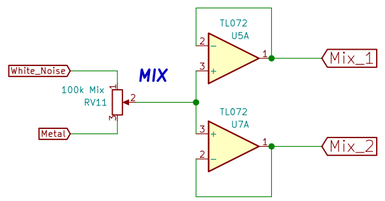
Single transistor VCA (voltage controlled attenuator),
a circuit referred to by the Roland engineers as a "Swing Type VCA."
The VCA envelope is provided by a pulse from the trigger input

http://www.mickeydelp.com/blog/anatomy−of−a−drum−machine

Interaction mean the closed hat will cancel the open hat (like a real one does)
If it switched to NC the open hat's decay will not be affected by the closed hat

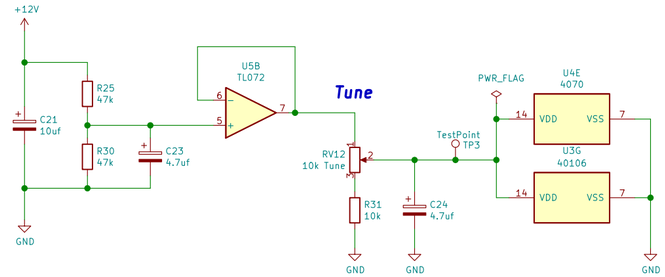
https://delptronics.com/documents/LDB1seSchematic.pdf

MIX WHITE/METAL NOISE



Here is just a single pot mixing metal and white noise together
then 2 buffers (one for OH the and one for CH) I try without but the sound become noisier (in a bad way)
Thank you Lazare =)

METAL TUNING



Tuning is accomplished by varying he supplt voltage with a voltage divider to CD40106 & CD4070 (from 3v to 6v).
This alter the time taken for the oscillators to reach their respective thresholds and therefore changes their frequencies.

http://experimentalistsanonymous.com/diy/Schematics/Full%20Synths%20Drum%20Synths%20and%20Misc%20Synth/Synbal.pdf

Controls :

- OH decay
- CH decay
- OH volume
- CH volume
- Interaction
- Metal caracter
- Metal tune
- Noise mix
- Noise cutoff

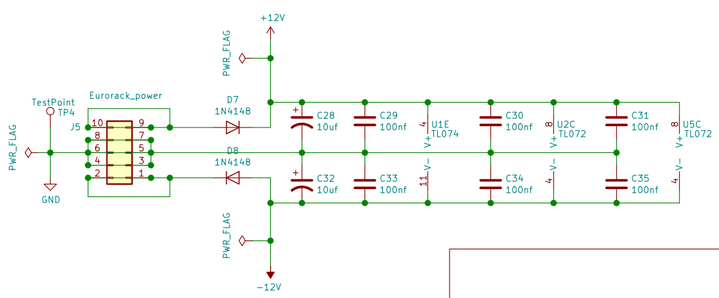
There is a topic about this circuit here :

https://lookmumnocomputer.discourse.group/t/hi−hat−design−what−do−you−think/3569/10

Other useful and inspiring links :

http://www.skullandcircuits.com/percussion−metal−o−tron/
https://www.youtube.com/watch?v=abUMAo_ODv0
https://library.vcvrack.com/Hora−treasureFree/HiHat

POWER



The decoupling capacitors should be as close as possible from the power pins of ICs

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