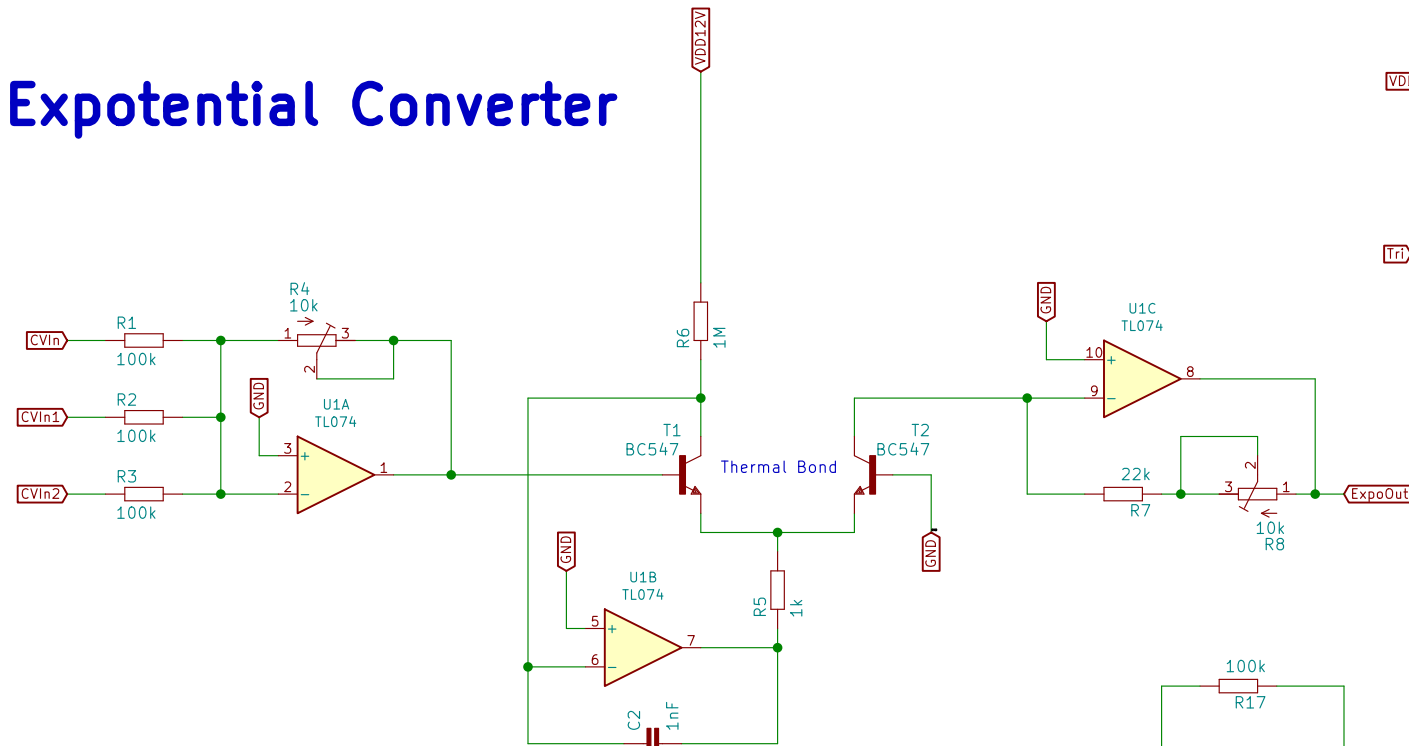


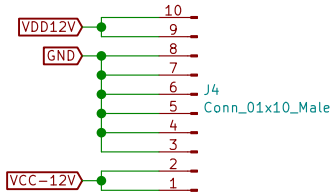
CV Inputs



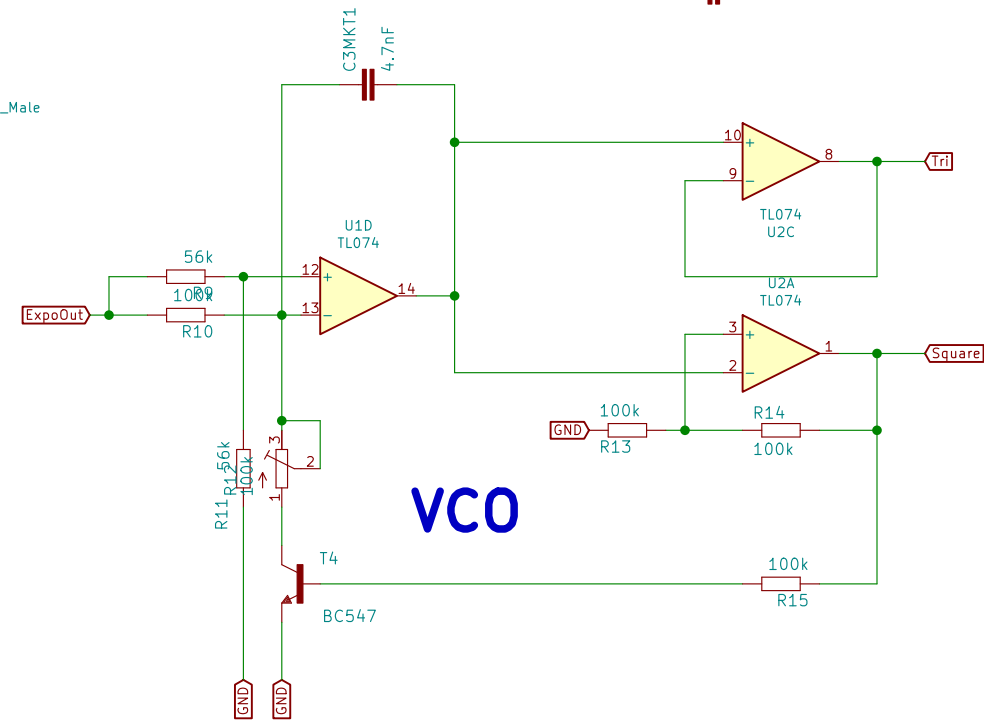
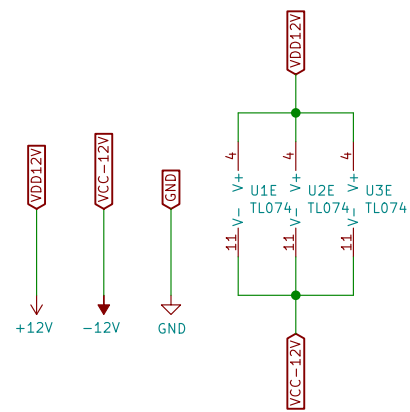
Exponential Converter



Power Connector

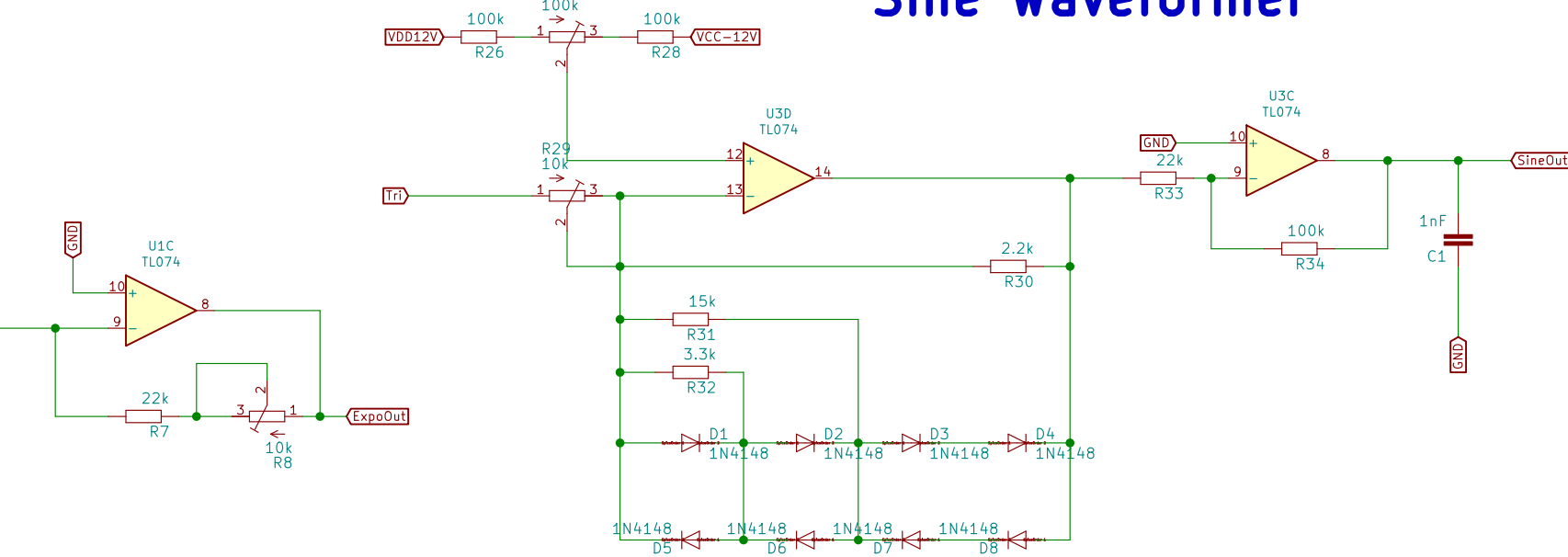


Power

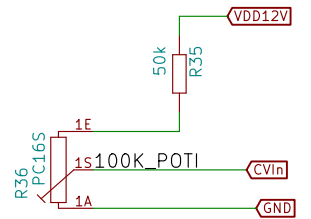


VCO

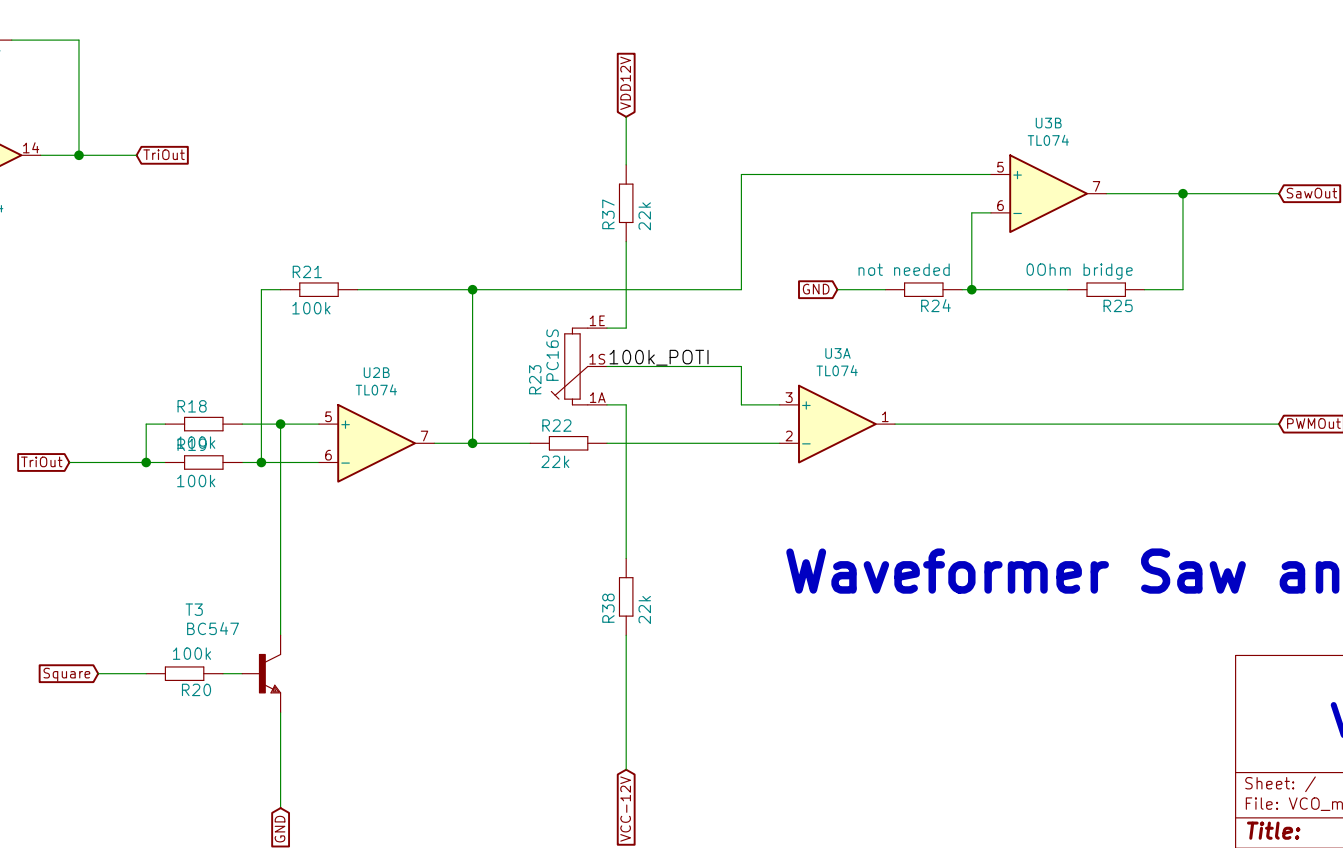
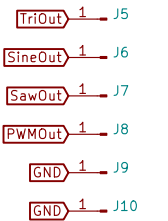
Sine Waveformer



Frequency Adj



Outputs



Waveformer Saw and PWM

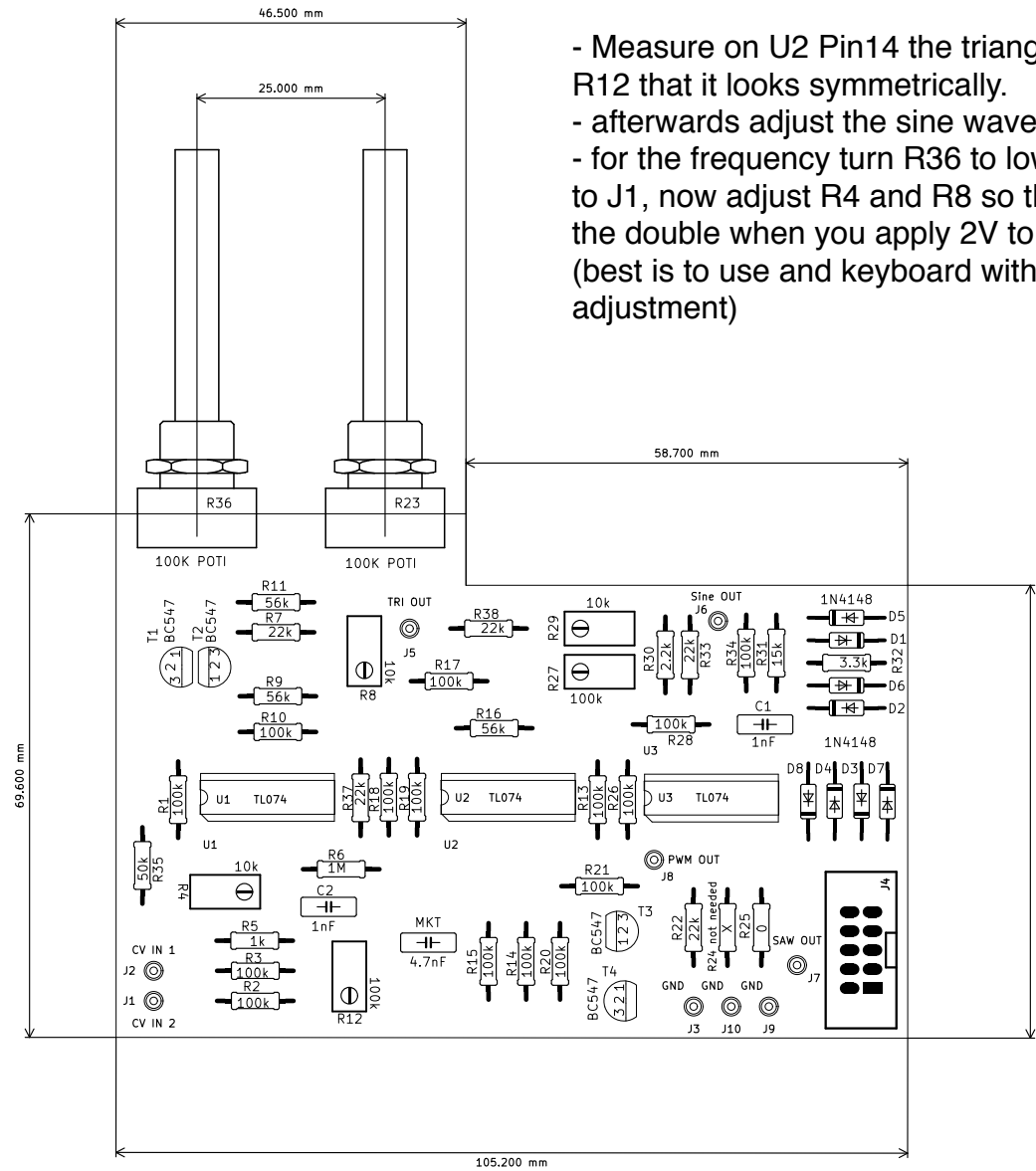
VCO by Minart 2019 / Rev010

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Component Scheme

Adjustment:

- Measure on U2 Pin14 the triangle signal and adjust it with R12 that it looks symmetrically.
- afterwards adjust the sine wave with R27 and R28
- for the frequency turn R36 to lowest value and apply 1V to J1, now adjust R4 and R8 so that the frequency will be the double when you apply 2V to J1 (best is to use and keyboard with pitch out to make the fine adjustment)

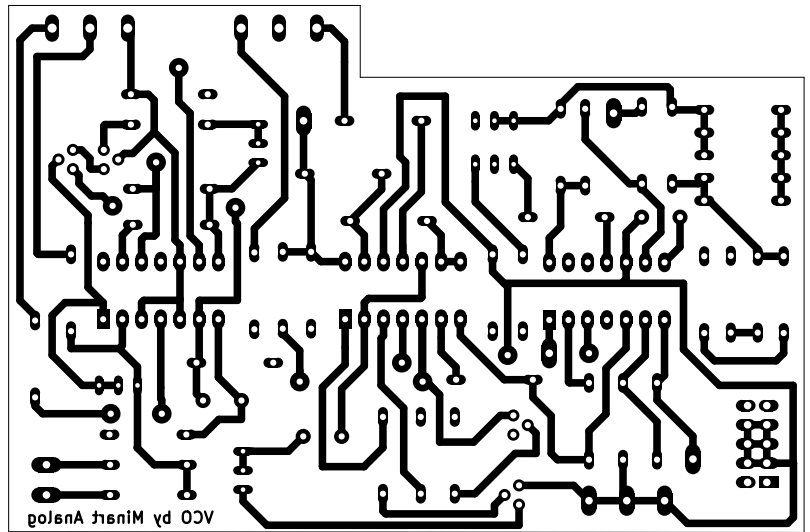


component	value
C3	4.7nF
T4	BC547
C2	1nF
T1	BC547
T2	BC547
R19	100k
R18	100k
R21	100k
R22	22k
R26	100k
R28	100k
T3	BC547
R30	2.2k
R31	15k
R32	3.3k
D1	1N4148
D5	1N4148
D2	1N4148
D3	1N4148
D4	1N4148
D6	1N4148
D7	1N4148
D8	1N4148
R24	not needed
R25	00hm bridge
R15	100k
R10	100k
R9	56k
R11	56k

component	value
R13	100k
R14	100k
R6	1M
R3	100k
R5	1k
R7	22k
R4	10k
R8	10k
R27	100k
R34	100k
R33	22k
R20	100k
R2	100k
R1	100k
J4	Conn_01x10_Male
R36	PC16S
R35	50k
R29	10k
R12	100k
R23	PC16S
U1	TL074
U2	TL074
U3	TL074
R17	100k
R16	56k
C1	1nF
R37	22k
R38	22k

Needed Components

Bottom Layer



Top Layer

