

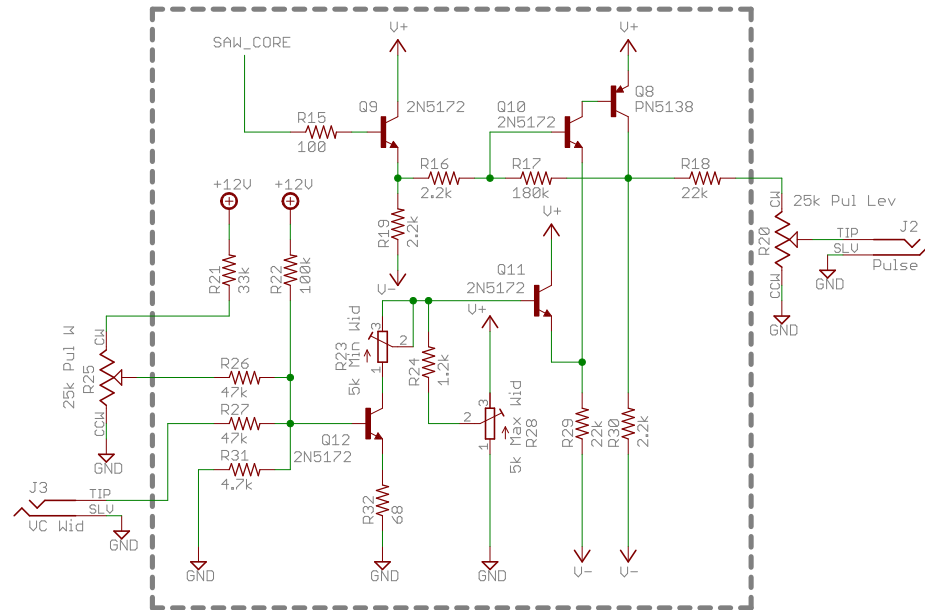
NOTES:

- Use either the PNP in the THAT340 or matched NPNs for Q6 and a 2N5138 PNP for Q3. DO NOT INSTALL Q3 IF A THAT340 IS USED!
- R8, R14 - 8.2K; R3 - 3.9K; R1 - 22K use RN55E, 0.1% if desired.
- R13 and Q6 (the NPN matched pairs) and Q3 should be in thermal contact.
- If a discrete matched NPN pair is used, be sure the pair is in physical and thermal contact with Q3 and R13.
- If a THAT340 is used, Q3 is not installed and mount R13 over the top of the THAT340 with thermal grease.
- Q7 can be a monolithic pair like SSM2210 or matched/unmatched NPNs

The VCO uses all the power connections. Use 150u electrolytics and 22 ohm resistors on the Power PCB as noted.

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SPVCO_A_1.6	
TITLE: Voltage Controlled Oscillator	
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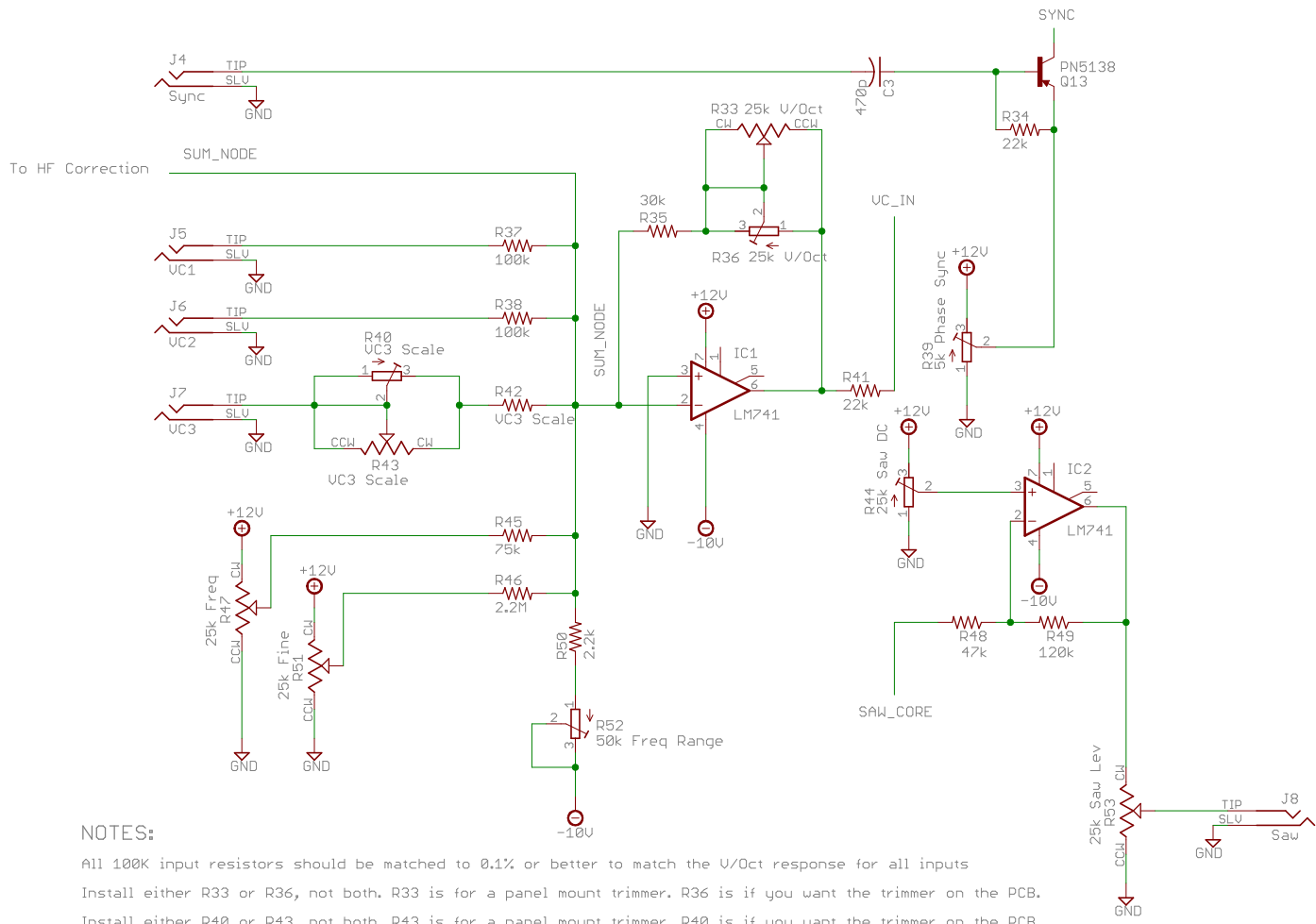
Set min/max uid:

1. Turn PW full CCW. (Make sure Q12 is off. Short base to emitter if you want to be sure).
2. Adjust R28 towards the positive supply (CW) until a minimum pulse width is achieved
3. PW knob full CW, (unshort Q12 if needed). Adjust R23 for minimum width

Changed R21 from 68k to 33k to put 5 Volts on wiper when full CW.

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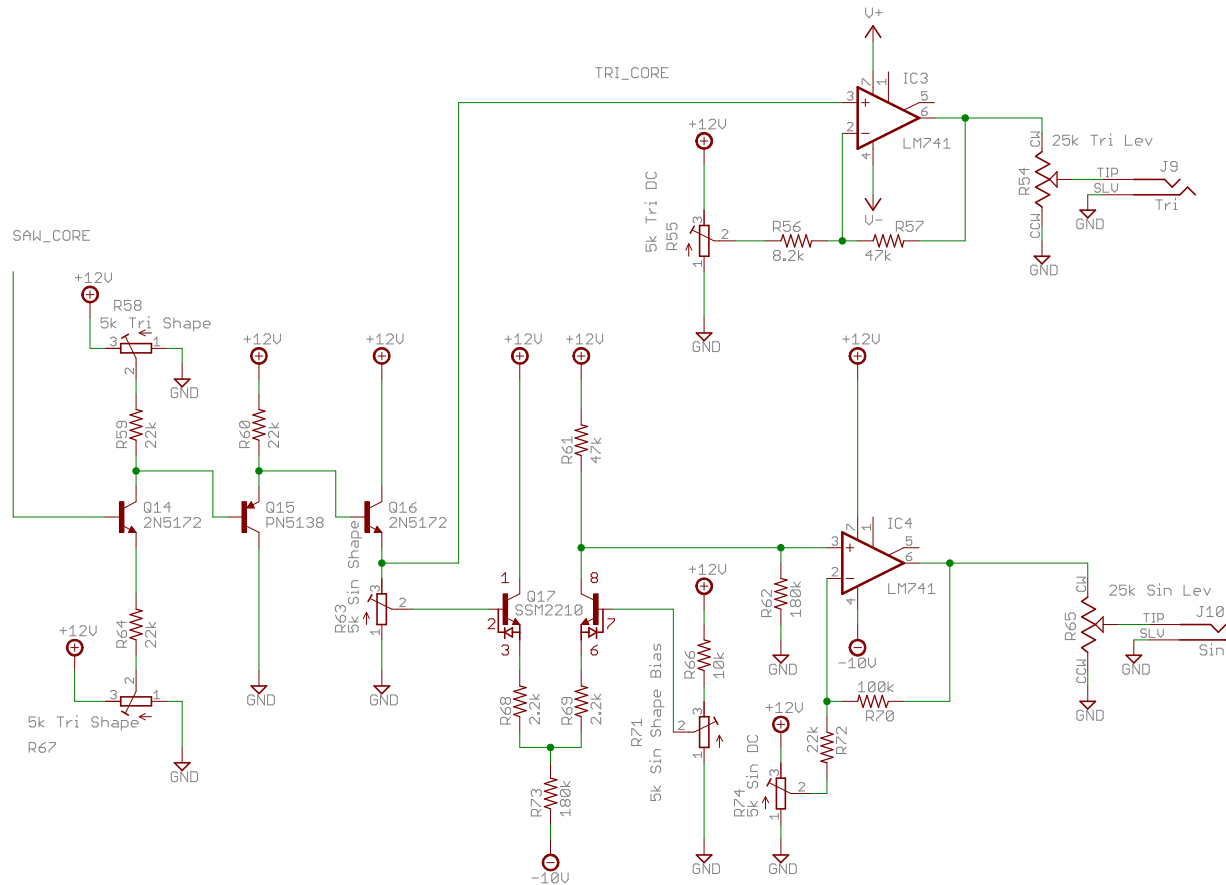
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NOTES:

All 100K input resistors should be matched to 0.1% or better to match the U/Oct response for all inputs
 Install either R33 or R36, not both. R33 is for a panel mount trimmer. R36 is if you want the trimmer on the PCB.
 Install either R40 or R43, not both. R43 is for a panel mount trimmer. R40 is if you want the trimmer on the PCB.
 R40 or R43, are selected as wanted. R42=22k and R40 or R43 = 200k are a starting point. Choose these values to allow this input to tune to the desired scale with respect to the other two inputs.
 If you don't want a variable scale on UC3, install a matched 100k resistor in R42 and jumper either R40 or R43.

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For normal building, install R58 and do not install R67 (trimmers). Install a jumper between pins 1 and 2 on R67's footprint.

That is, R64 should connect to ground in a normal build.

If triangle shape can't be adjusted with R58, uninstall R58 and install a jumper between pins 2 and 3.

That is, R59 should connect to +12V

Uninstall the jumper at R67 and install R67 instead. Adjust the triangle shape with R67.

Q17 can be a monolithic pair like SSM2210 or matched/unmatched NPNs

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