

3340 Mini VCO V1.1

The 3340 Mini VCO Eurorack PCB and Front Panel Kit is a compact, feature-rich voltage-controlled oscillator designed around the legendary CEM3340 / AS3340 core. Offering classic analog waveforms in a space-saving 6HP format, this mini VCO delivers stable tuning and unmistakable vintage character while remaining affordable and approachable for experienced DIY builders.

Designed as a streamlined alternative to full-featured 3340 oscillators, the Mini VCO focuses on essential functionality without sacrificing sound quality or modulation flexibility.



Timing Capacitor

To ensure precise stability, select a capacitor with low tolerance, such as a silver mica or polystyrene capacitor for C9

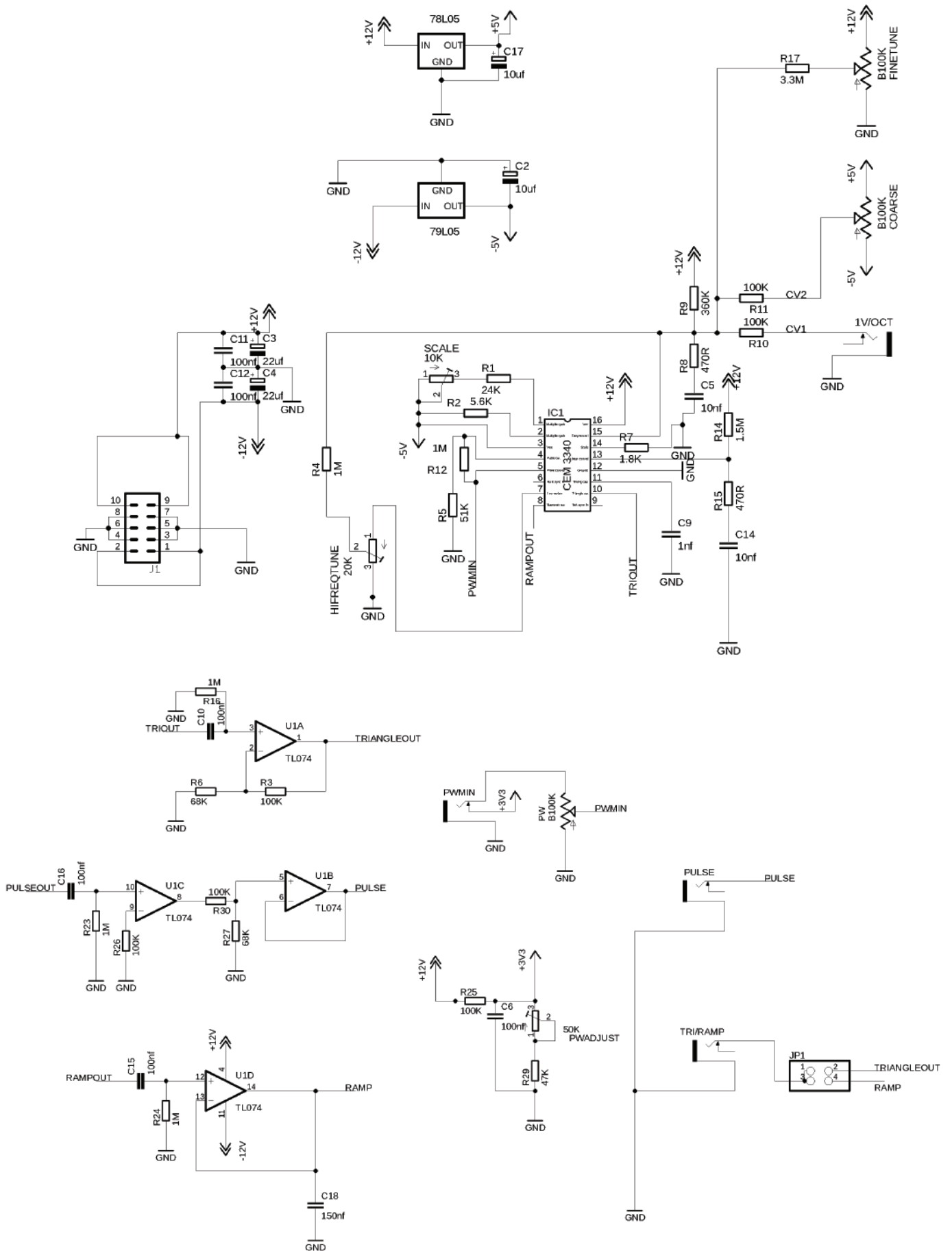


Bom

Qty	Value	Part Number
1		78L05
1		79L05
1	16 Pin IDC Socket	Eurorack Power Connector
1	2x2 Jumper	JP1 - Output Selector
1	1.5M	R14
1	1.8K	R7
6	100K	R3, R10, R11, R25, R26, R30
6	100nf	C6, C10, C11, C12, C15, C16
1	10K - Multi Turn Trimmer	SCALE
2	10nf	C5, C14
2	10uf	C17, C2
1	150nf	C18
5	1M	R4, R12, R16, R23, R24
1	1nf - <i>Timing Capacitor</i>	C9 (<i>Use Polystyrene or Silver Mica</i>)
1	20K - <i>Multi Turn Trimmer</i>	HIFREQTUNE
2	22uf	C3, C4
1	24K	R1
1	3.3M	R17
1	360K	R9
2	470R	R8, R15
1	47K	R29
1	5.6K	R2
1	50K - <i>Multi Turn Trimmer</i>	PWADJUST
1	51K	R5
2	68K	R6, R27
3	B100K - <i>9mm Potentiometer</i>	COARSE, FINETUNE, PW
1	CEM3340 or AS3340	IC1
4	PJM398SM / Jack Socket	1V/OCT, PWMIN, PULSE, TRI/RAMP
1	TL074	U1
1	Tri Out	

Use capacitors rated 25V or higher.

Schematic



Calibration

Scale and High Frequency Trimmer Calibration

- 1 - Connect a voltage-generator (VC) source, such as a keyboard, to the 1V/octave input of the VCO.
- 2 - Play note C1 (1 volts) on the key- board. Use the Tune and Fine Tune knobs on the VCO to tune it to C1.
- 3 - Press C2 (2 volts) on the key- board. Adjust the scale trimmer on the VCO to tune it to C2.
- 4 - Return to C1 and ensure it is still accurately tuned using the Tune and Fine Tune knobs.
- 5 - Press C2 again and fine-tune it using the scale trimmer on the back.
- 6 - Repeat the process with C1 and C3, ensuring accurate tuning with coarse and fine adjustments.
- 7 - Check the upper octaves for fine-tuning using the scale trimmer.
- 8 - Press C9 (9 volts) on the key- board and adjust the Hi Frequency trimmer to tune the VCO to C9.

Pulse Width Calibration

The PW adjust trimmer sets the endpoint of the square wave cycle. It should be adjusted to a point just before the wave disappears when the PW pot is turned all the way up.



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