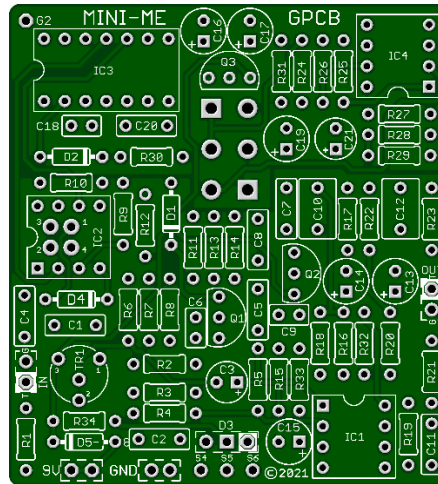


Mini-Me Chorus 2021

Compare to the Small Clone chorus, but includes many additional HQ modifications. The addition of a Depth knob provides more flexibility. The result is a beautiful, warm analog chorus tone unlike any other.

This Build Document is for the 2021 version of Mini-Me Chorus only!



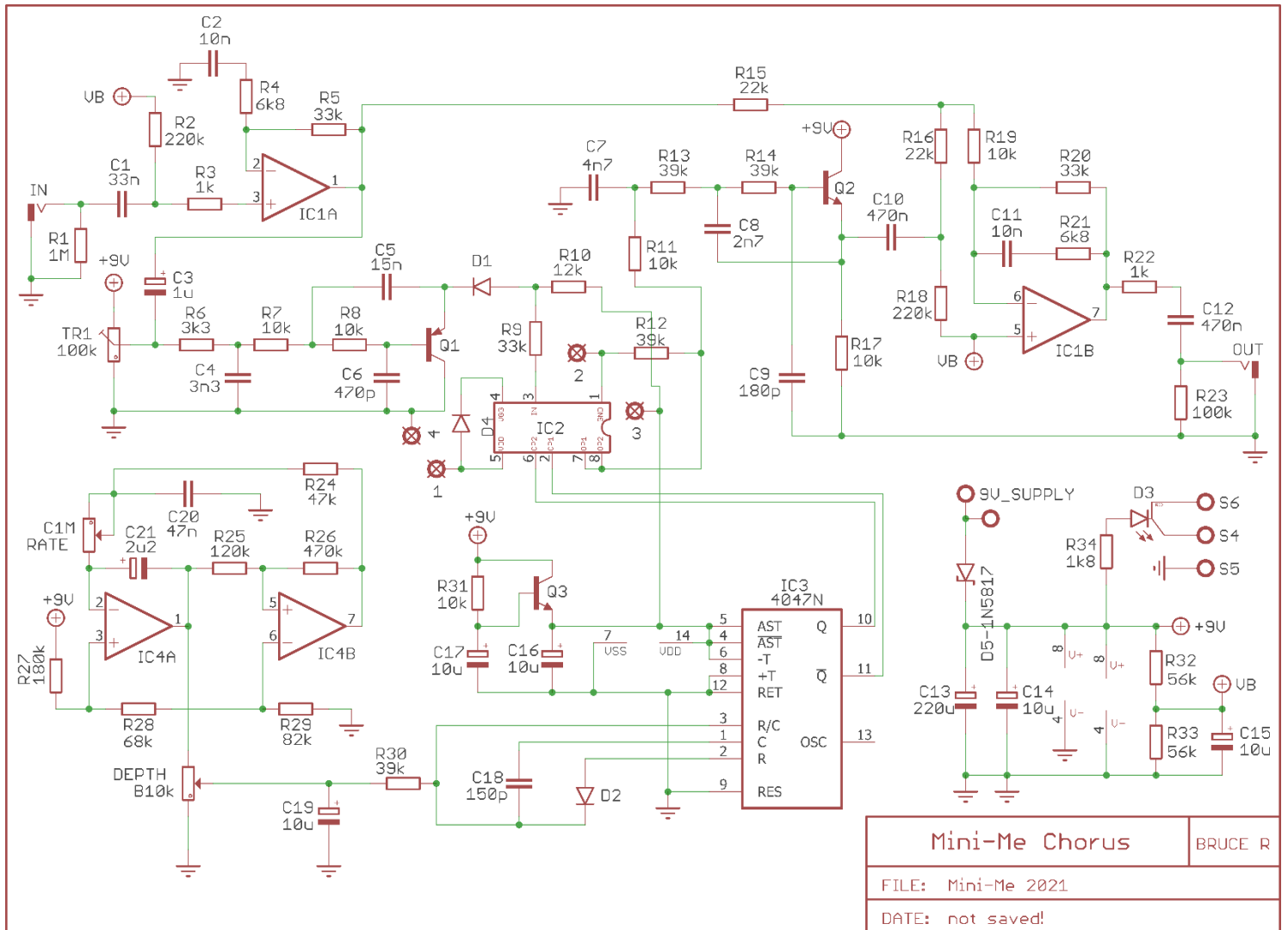
Board Dimensions (W x H) 2.12 x 2.32 inches.

Part	Value	Part	Value	Part	Value	Part	Value	Part	Value
R1	1M	R16	22k	R31	10k	C11	10n	DEPTH	B10k
R2	220k	R17	10k	R32	56k	C12	470n	RATE	C1M
R3	1k	R18	220k	R33	56k	C13	220u		
R4	6k8	R19	10k	R34	1k8	C14	10u	IC1	4558
R5	33k	R20	33k			C15	10u	IC2	*MN3207
R6	3k3	R21	6k8	C1	33n	C16	10u	IC3	4047N
R7	10k	R22	1k	C2	10n	C17	10u	IC4	LM358N
R8	10k	R23	100k	C3	1u	C18	150p		
R9	33k	R24	47k	C4	3n3	C19	10u	TR1	100k
R10	12k	R25	120k	C5	15n	C20	47n		
R11	10k	R26	470k	C6	470p	C21	2u2	D1	1n914
R12	39k	R27	180k	C7	4n7			D2	1n914
R13	39k	R28	68k	C8	2n7	Q1	2N5087	D3	Status Led
R14	39k	R29	82k	C9	180p	Q2	2N5088	D4	1n4148
R15	22k	R30	39k	C10	470n	Q3	2N5088	D5	1n5817

STATUS LED

D3 is a Status LED that can be either a Bi-Color Common Anode or a Standard On/Off LED. (See Tip Sheet)

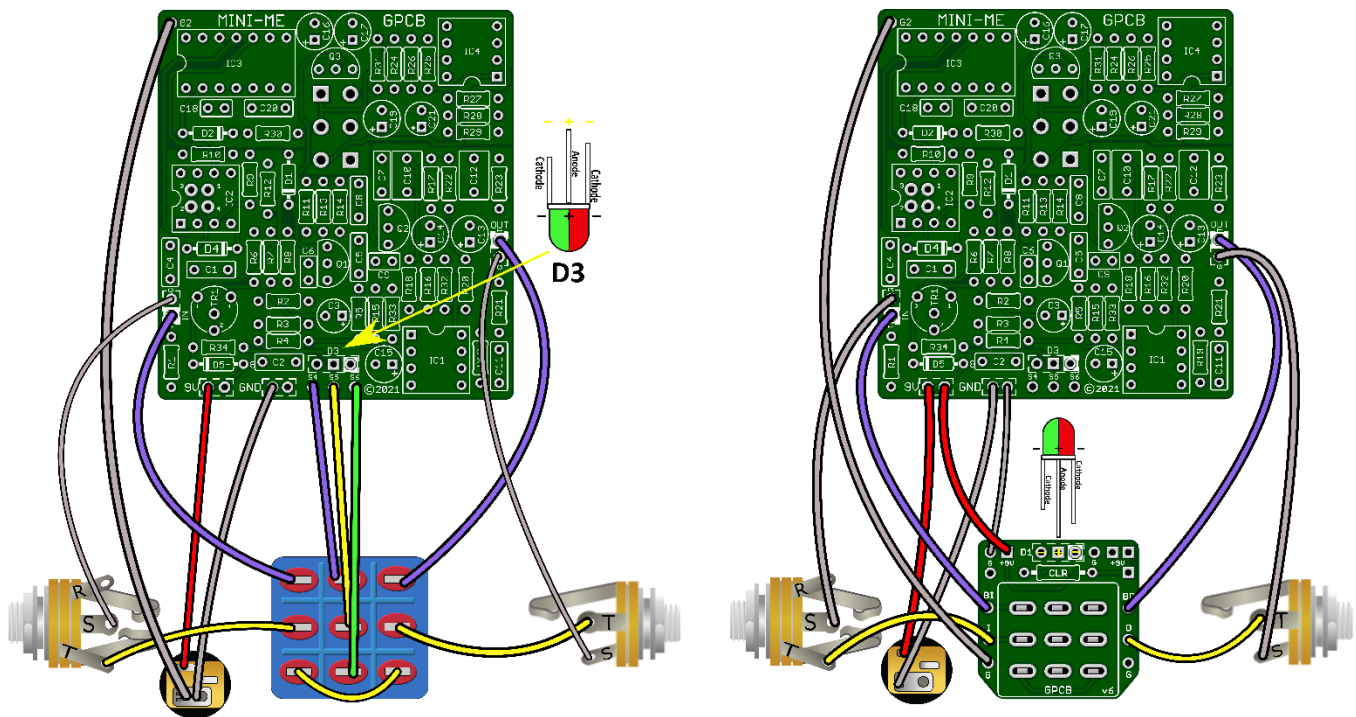
Schematic



IMPORTANT NOTES

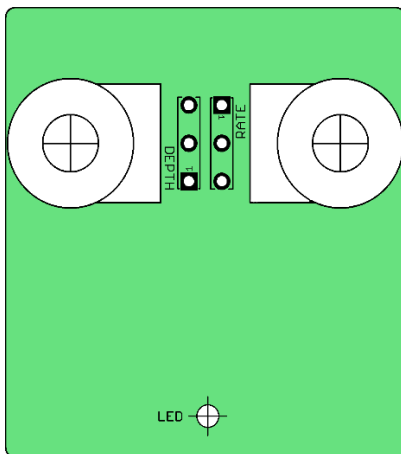
- You may use MN3207, MN3007 or v3207 from Cool Audio. Notice the different Jumper arrangement for MN3007.
- This board has **2 ground planes** to prevent any audible clock noise. Make sure that pads **GND** and **G2** are both grounded.
- ***TR1** - The trimmer potentiometer is for biasing the output of IC1A and should be adjusted by ear until the chorus effect is most pronounced. This is a fine setting and is usually close to the center position.

WIRING DIAGRAM



Note: If you are using our 3PDT board, you should omit wires and parts from S4, S5 & S6, D3 and R34 (CLR). The CLR and LED will be populated on the 3PDT board instead.

Drill Template



When printed, the border of the board should measure 2.12 x 2.32 inches. This drawing shows the spacing between centers of the pots, and the distance of the LED pads from the center of the pots. Hole diameters are not exact in this image, so please measure your components before selecting a drill bit. We recommend drilling the pot holes, mounting the pots in the enclosure, and then soldering the pots to the board. This approach should resolve the issue of the pots not fitting through the holes after soldering. We also recommend you make the holes for the pots a little larger than the threads in case you decide to remove the board and put it back in during the build, to avoid problems. Use this guide at your own risk. Be sure to make sure page scaling is turned off when you print this PDF, or the image above may be smaller than expected.

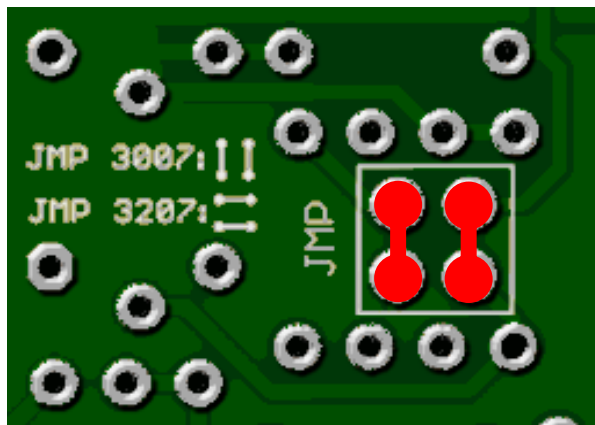
MN3007 vs 3207 and use of the Jumpers.

Please use the corresponding section below depending on the IC you are using in your build.

A big thanks to Dimitris Diamantidis for his help.

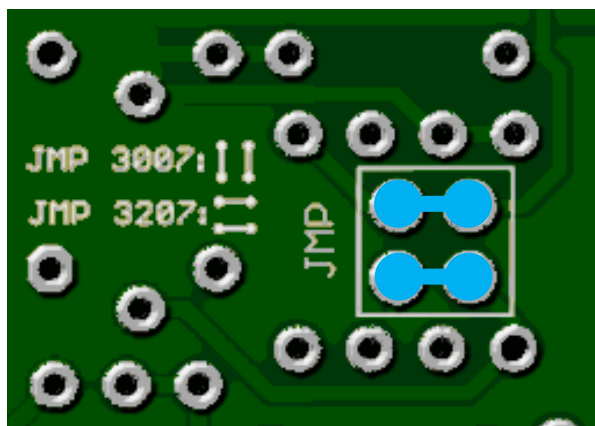
If using an MN3007:

Jumpers are just short wires (you can use the cut-off leads from a resistor or diode, etc.). For the MN3007, you need to populate the location on the circuit board for D4 with a jumper. If you populated with a Diode it is still fine but we prefer the Jumper. Additionally, you will need to put jumpers in the holes in the middle of the IC2 chip location. On the back of the circuit board, you will see the orientation of the jumpers indicated right next to the JMP box. We have added red lines for emphasis to show the correct orientation for the MN3007:



If using a V3207:

For the V3207, there is a requirement that the voltage be slightly lower on pin 4, so the diode is used to adjust the voltage (the diode's forward voltage drop or V_f is about .7 volts). So as listed in the parts list above, you need to populate the location on the circuit board for D4 with a 1n4148. Additionally, you will need to put jumpers in the holes in the middle of the IC2 chip location. On the back of the circuit board, you will see the orientation of the jumpers indicated right next to the JMP box. We have added blue lines for emphasis to show the correct orientation for the V3207:



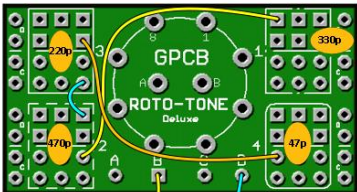
Wilkie1 Flangery Cap Mod – The values we used are 47p, 220p, 330p & 470p.

MINI-ME CAP MOD

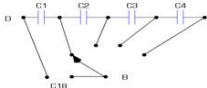
This popular mod replaces C18 150p with a selection of 4 different cap values.

The jumpers on the ROTO-TONE board may be installed on the opposite side from the switch since all pads are plated through.

You may use ceramic, MLCC or film capacitors.



Be sure to place the capacitors correctly as shown!

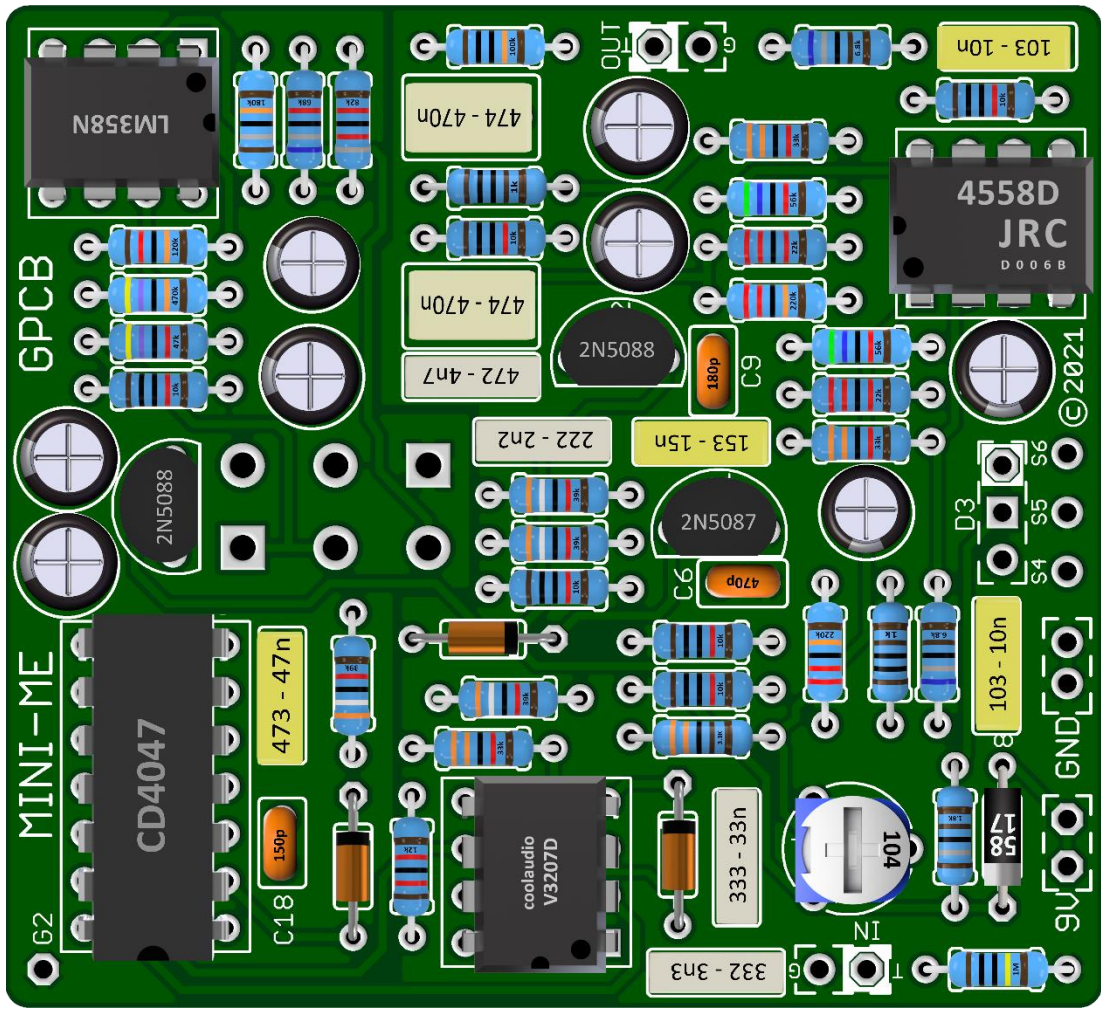


Since the capacitors are wired in series, the ROTO-TONE DELUXE decreases the capacitor total value as the switch is advanced. The resulting values are:

position 1: 330pf position 2: 194pf position 3: 103 pf
position 4: 32pf

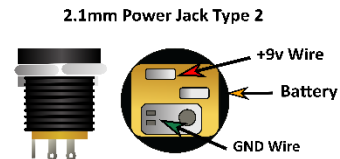
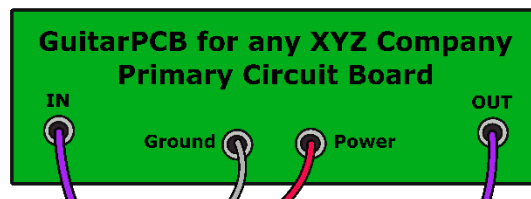
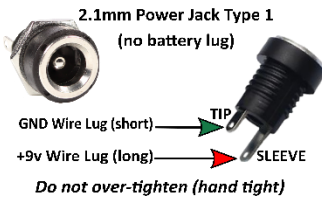
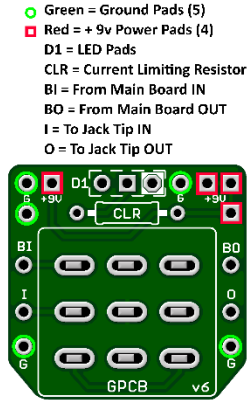
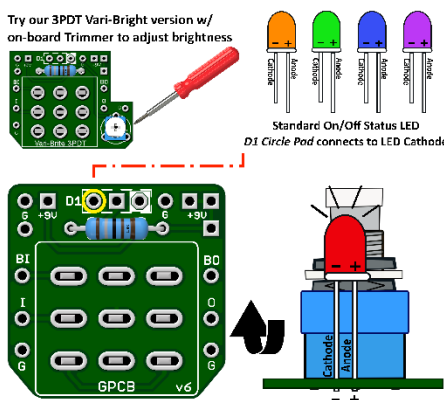
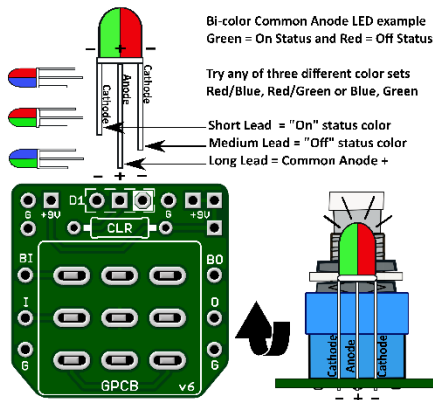
These values are calculated by:

$$C_T = \frac{1}{\frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3} + \dots + \text{etc.}}$$

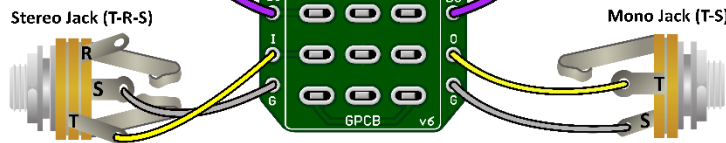




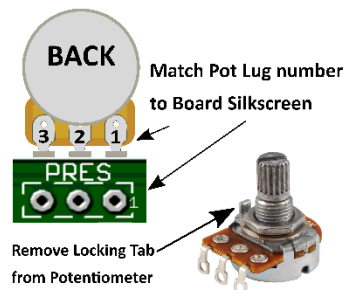
GuitarPCB Tip Sheet



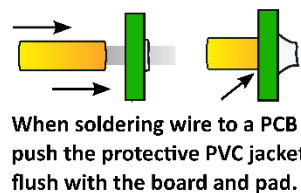
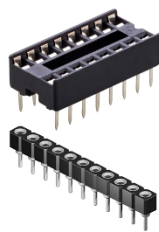
T = Tip
R = Ring
S = Sleeve



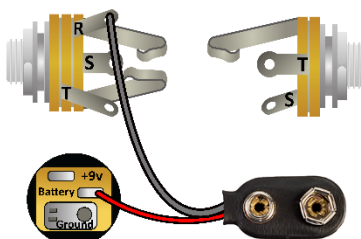
Multiple +9v and Ground Pads are convenient hookup points for additional circuits within the same enclosure. This also allows for diverse wiring schemes to suit individual needs.



Sockets make troubleshooting easier



Main Board IN/OUT Pads



Input/Output Jack Wiring

T = Tip | R = Ring | S = Sleeve

A Stereo Jack is only needed if using a Battery. Otherwise use a Mono Jack
Battery Strap RED wire is connected to Power Jack
Battery Strap Black wire is connected to RING (stereo jack)
If wiring an LED to our 3PDT Wiring Board then S4, S5 & S6 are not needed



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