

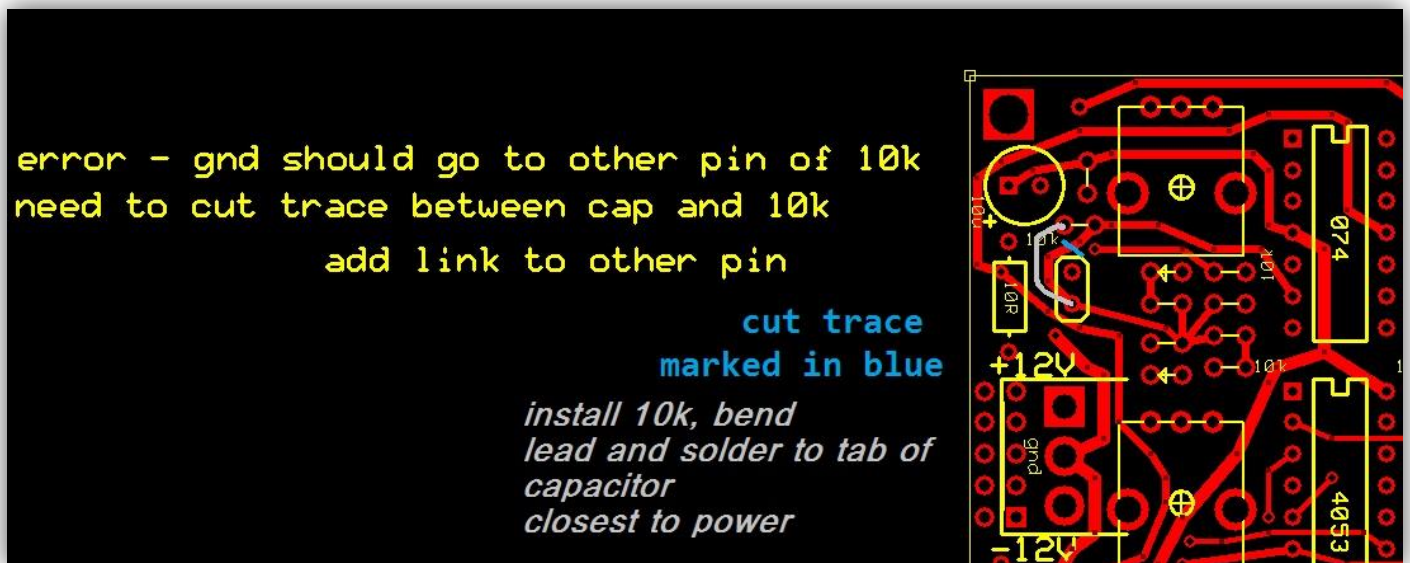
# nonlinearcircuits

## CMOSC

build notes [version 1](#)

25 Oct 2014

Please note a track must be cut on the PCB and a link added. It is best to cut the track before installing components and the link can be the lead of the 10k resistor involved. See below:



## BOM

Please note, the PCB is designed for thru-hole resistors standing upright, but it is very easy to solder on 0805 SMD resistors instead, if you prefer. 1206 are possible too, but a bit of a squeeze.

If you think you will need to experiment with some resistor values, it is much easier to use 0805 resistors. These can be removed and replaced very easily with no need of solder suckers or solder wick, just heat them up and flick them off.

component	quantity	
100k pot	12	<i>see notes</i>
TL074	2	DIP
40106	1	DIP
4053		DIP
BC547	2	any general NPN okay, pinout suits BC547
1uF electro (or regular)	6	2.5mm pin spacing
100nF caps	7	2.5mm pin spacing, for decoupling, <b>marked on PCB with a rectangle</b>
10uF (35v or higher rating)	2	2.5mm pin spacing, for decoupling
150nF caps	6	4.5mm pin spacing <i>Can use other values from 100nF (faster) to 470nF (slower)</i>

sockets	16	
upright 20pin IDC	1	<i>see note</i>
right angle 20pin IDC	1	<i>see notes</i>
20 pin connectors	2	<i>see notes</i>
20 strand ribbon cable	1	~10-15cm
10 pin power connector	1	or 3 pin Molex
1N4148	8	any regular signal diodes ok
<b><u>thru-hole resistors</u></b>		
10R	2	
1k	10	
10k	10	
100k	24	value not shown on PCB

**NOTES**

**Building**

**pots**

These ones from Tayda will do, though be careful none of the metal flaps/tabs are sitting on PCB traces, trim them back if so. You can find many brands of this type of pot, Alpha make nice ones too.

<http://www.taydaelectronics.com/potentiometer-variable-resistors/rotary-potentiometer/linear/100k-ohm-linear-taper-potentiometer-round-shaft-pcb-9mm.html>



**Breakout board connections**

1	osc 1A in	2	osc 1A out
3	osc 2A in	4	osc 2A out
5	osc 3A in	6	osc 3A out
7	sync in A	8	sync out A
9	sync in B	10	sync out B
11	osc 1B in	12	osc 1B out
13	osc 2B in	14	osc 2B out
15	osc 3B in	16	osc 3B out

## 20 pin connectors

These unshrouded ones are fine, Futurlec have them.

