



Dome Filter

for music synthesizers.

The dome filter is a 90° phase difference network, as used in frequency shifters. It is not a project in itself, and will be of no use to most people. I designed this board simply because I needed some dome filters for my own experimentation. The boards I am selling are simply left over from this run.

The circuit is based on the work of, and Copyright by Bernie Hutchins. It was presented in *Electronotes* 83, in Nov 1977. The implementation is very similar to that of [Jürgen Haible](#) for his frequency shifter. Do not expect either of these people to help you with the construction of this PCB.

Component values are selected using the formula printed on the PCB itself.

I will be giving no more details on this project at this stage, and suggest you purchase [Electronotes](#) if you need more information.

Construction

Before you start assembly, check the board for etching faults. Look for any shorts between tracks, or open circuits due to over etching. Take this opportunity to sand the edges of the board if needed, removing any splinters or rough edges.

When you are happy with the printed circuit board, construction can proceed as normal, starting with the resistors first, followed by the IC socket if used, then moving onto the taller components.

Take particular care with the orientation of the polarized components such as electrolytics, diodes, transistors and ICs.

When inserting ICs into sockets, take care not to accidentally bend any of the pins under the chip. Also, make sure the notch on the chip is aligned with the notch marked on the PCB overlay.

Two resistors are placed in series in each network, to allow for the creation of the odd value resistors required. Alternately, the resistors can be left out, and a small trim-pot substituted. There are suitable holes on the PCB for one common trim-pot footprint.

Corrections

There is an error on this board at the output buffer op-amp (TL071). A trace goes to pin 5. This should be cut and jumpered to pin 3.

Notes:

- While untested, the module should work on +/-12 volts.
- **PCB info:** 6" x 2" with 3mm mounting holes 0.15" in from the edges.
- Please [email me](#) if you find any errors.

Parts list

This is a guide only. Parts needed will vary with individual constructor's needs.

If anyone is interested in buying these boards, please check the [PCBs for Sale](#) page to see if I have any in stock.

Can't find the parts? See the [parts FAQ](#) to see if I've already answered the question. Also see the [CGS Synth discussion group](#).

Part	Quantity
Capacitors	
100n	12
1uF (MKS)	3
10uF	2
C1-C12	See text
Resistors	
R1-R24	See text
10k	25
100k	1
Semi's	
TL071	1
TL072	6
Misc.	
Ferrite Bead (or 10R resistor)	2
0.156 4 pin connector	1
CGS45 PCB	1

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