State Variable Filter Exponential Convertor Improvements (example)

Lower this value to increase the top frequency that can be achieved when cutoff control is set to max.

If your circuit's range is good with a 2K resistor then going to a 2K temperature compensator will improve the filter's temp related stability.

475 ohm can be reduced to as low as 100 ohms if V/Oct range is too high with 2K feedback. 100 ohm trimmer can be increased to 200 ohms to widen the adjustment range too.

Add high frequency compensation adjust.

Remove fixed value resistor and replace with a kludged 100K trimmer and 10K resistor.

Use 1% or better tolerance resistors for the CV summing resistors.

Use metal film resistors throughout for least temperature related drift.

Matched pair of PNP transistors is another tracking improvement.

Matched pair is crucial for good tracking.

Unused transistors are in the LM13700

Reduce the value of these current limiting resistors to 7.5K to raise the top end of the filter's cutoff frequency. This does not help with V/Oct tracking but improves the high end of the range of the filter.

NOTE!!

Although not shown on this schematic use good quality capacitors for the filter's main integrator caps. Both silver-mica and polystyrene offer excellent temperature stability.