50Hz notch with the Fliege topology and LMP7702 and OPA1678

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The thing to keep in mind is these notch filters are very sensitive to RC tolerances

I put 0.5% R tolerance and 1% C tolerance and ran 200 monte carlo – yes it moves around a lot, which will show up as different 50Hz ripple levels at the output,



I also ran a nominal 200kHz square wave through this, yes there is that 2MHz peaking in this result, needs some work, or maybe a faster part with more phase margin, like an audio dual,



Yes, dropping in an OPA1678 moves the peaking out – definitely a unity gain crossover issue where this 7.5dB peaking is 25deg phase margin – better, maybe just a post RC will be enough here?



If I add a 2MHz post RC filter, the step response looks like this, pretty nice actually, without that is has a sharp overshoot with quicker settling.



Re-running the AC with tolerances and the faster OPA1678, this looks a little better in terms of attenuation at 50Hz across tolerancing – again 0.5% R’s and 1% C’s. If you just pulled normal tolerance RC out of the drawer – not much chance of success,

I see one curve in here that is only –16.7dB at 49.99Hz – there you go, RC tolerances – might need to spend more on better C and R.

