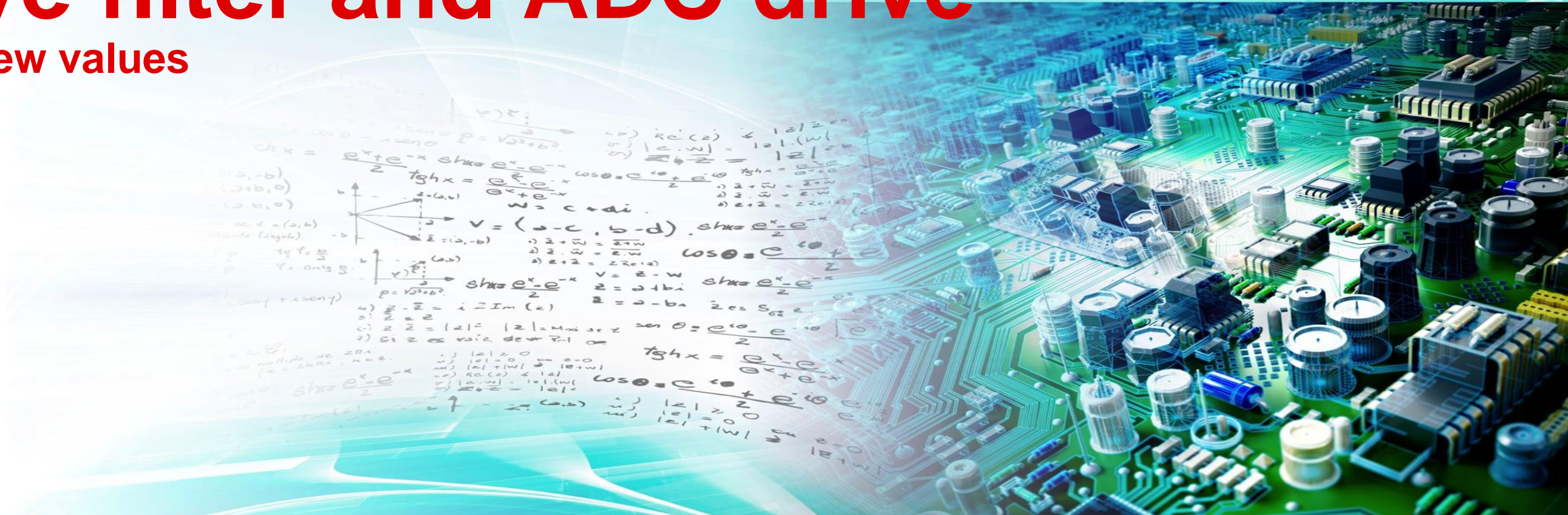


# Active filter and ADC drive

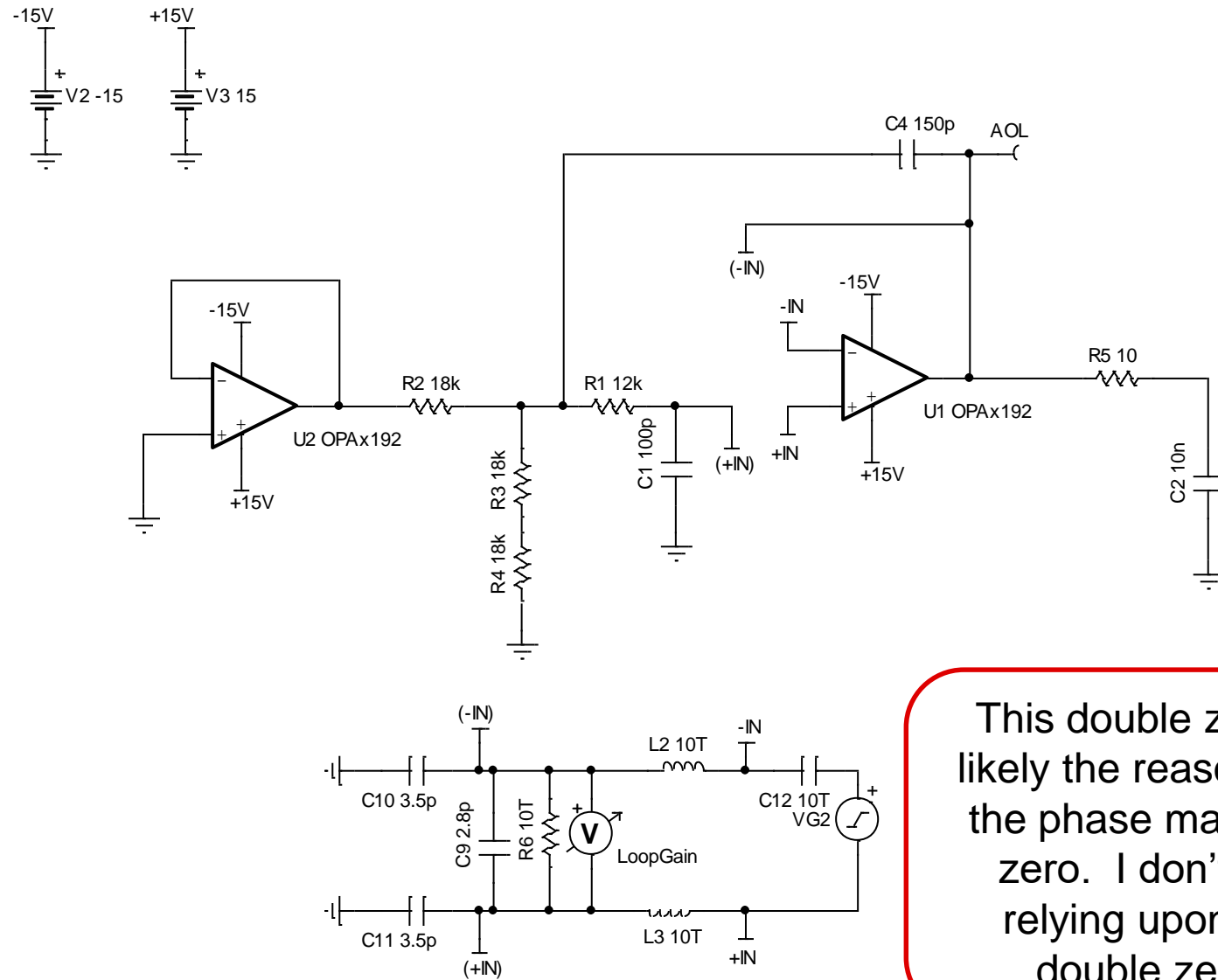
OPA192 new values

Art Kay

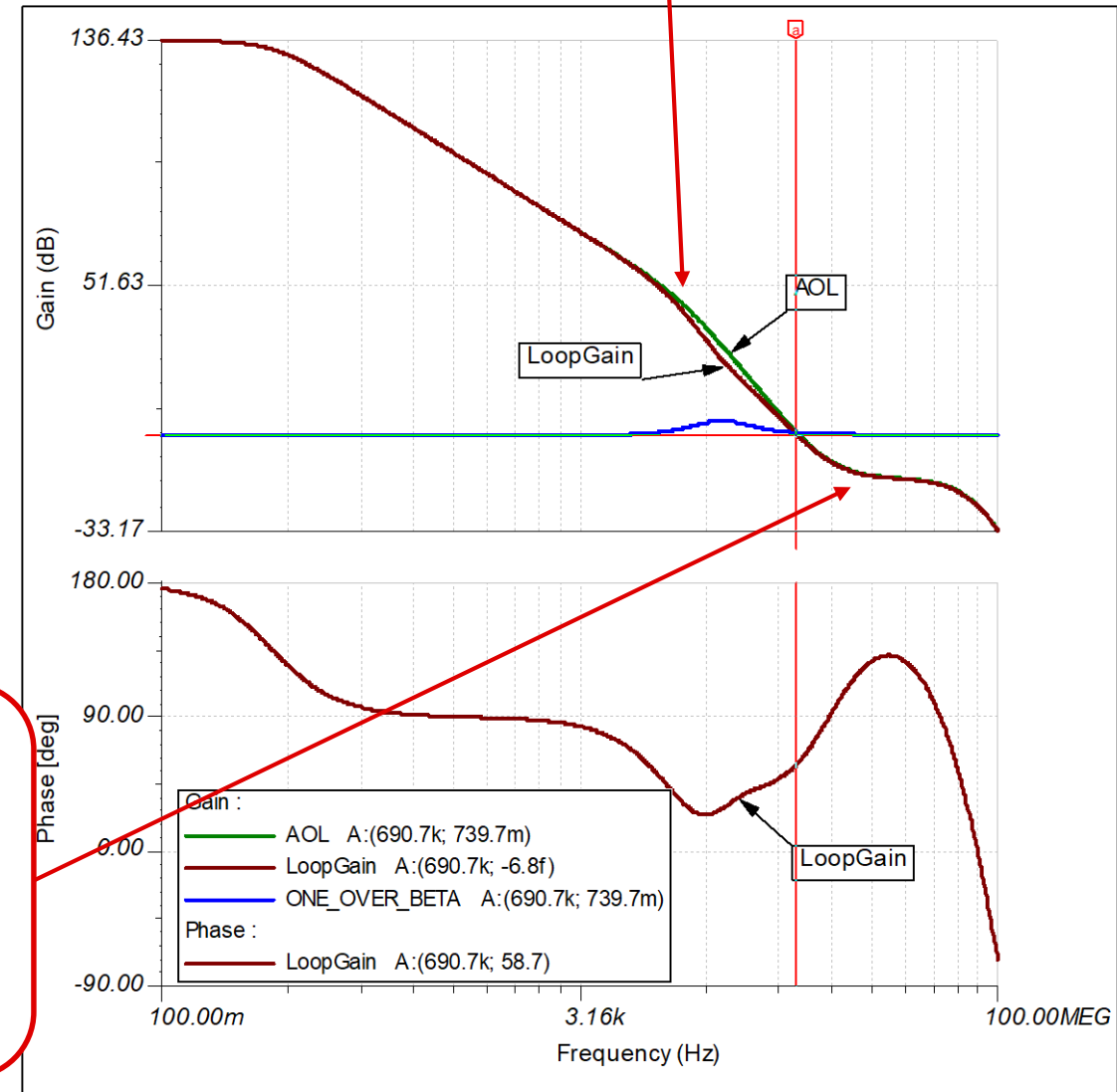
2-20-2024



# Original circuit

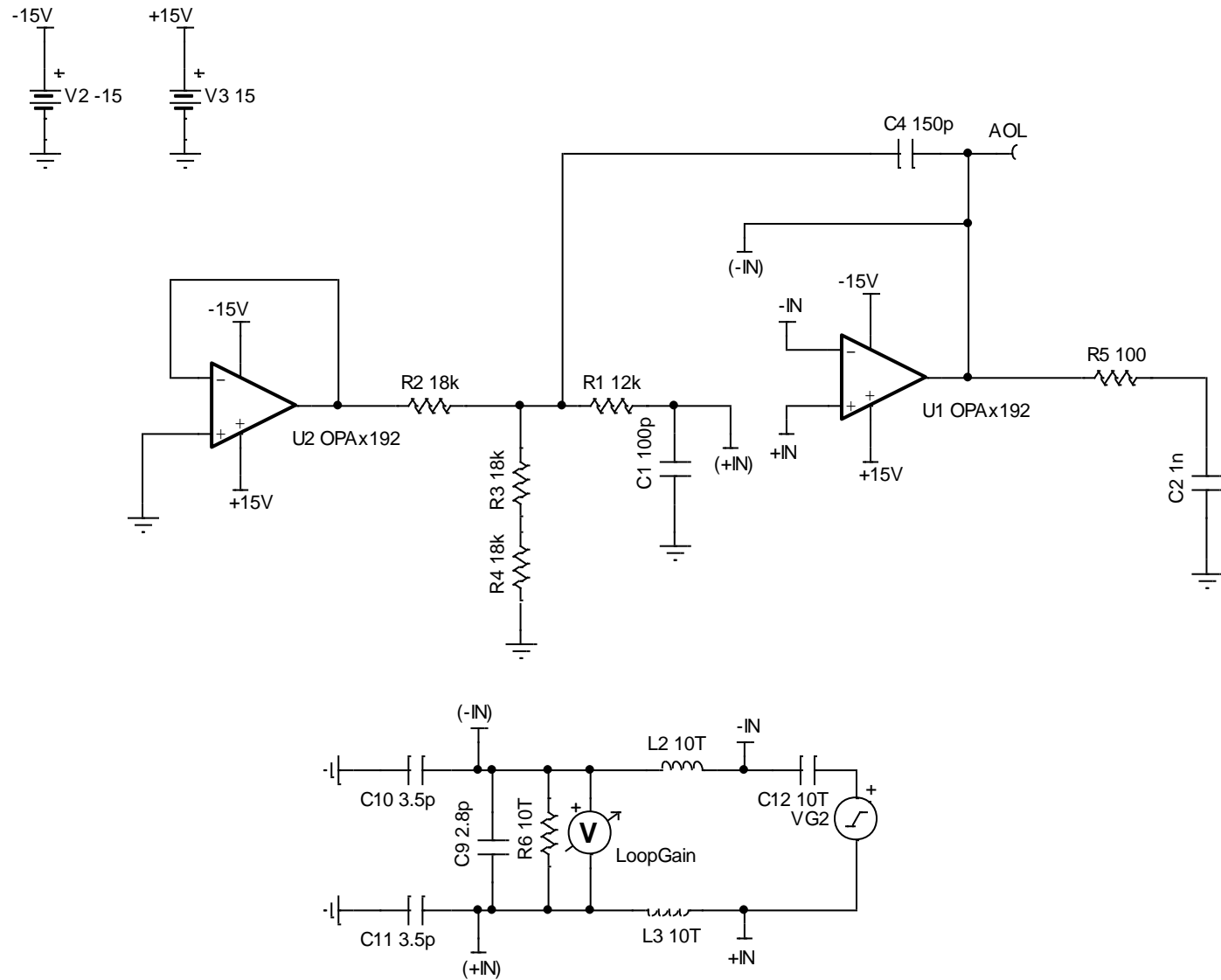


The phase margin is 58.7deg. However, this second pole in AOL makes the rate of closure 40dB/dec. This condition normally makes the circuit unstable.

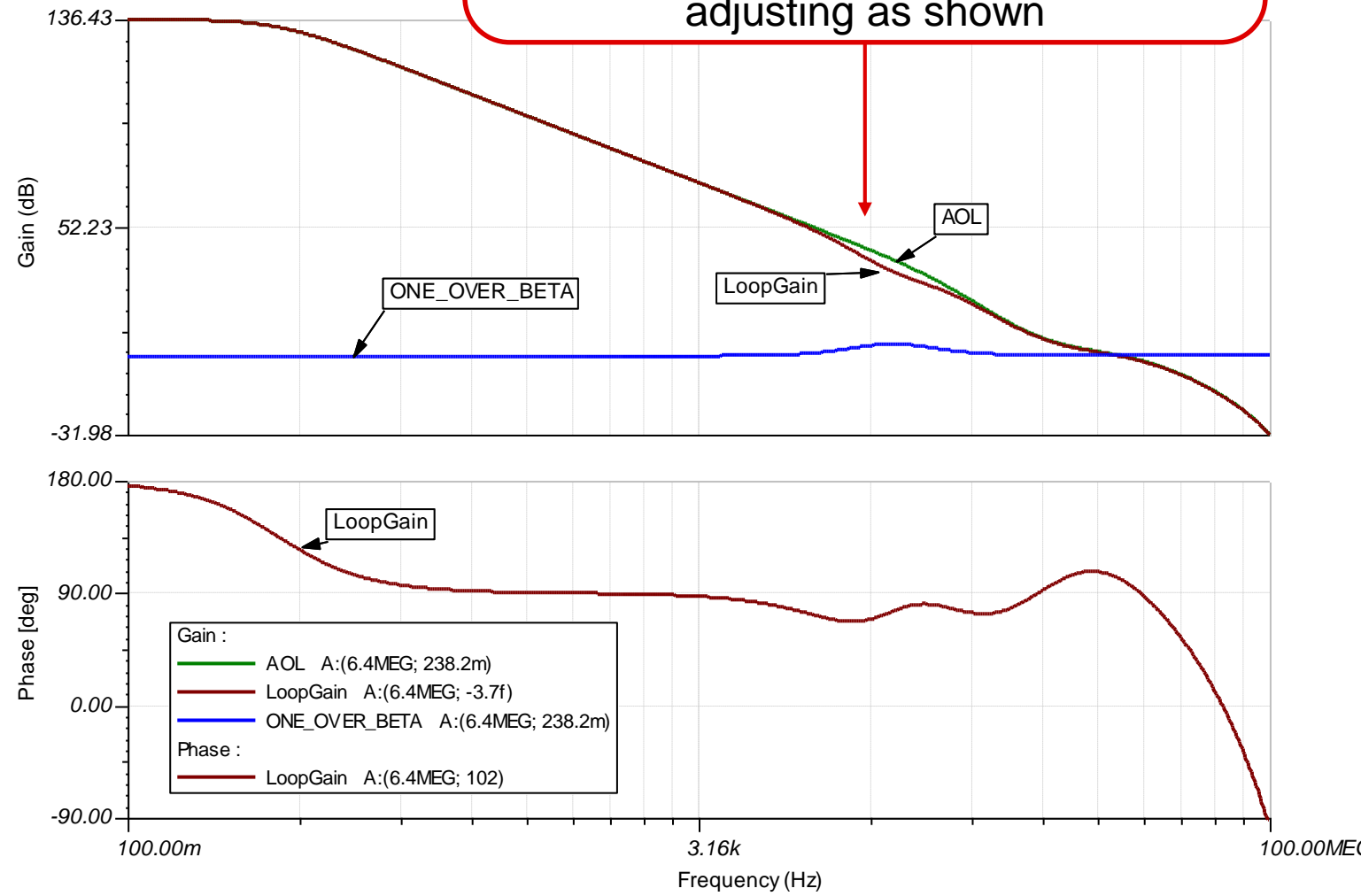


This double zero is likely the reason why the phase margin is zero. I don't like relying upon the double zero.

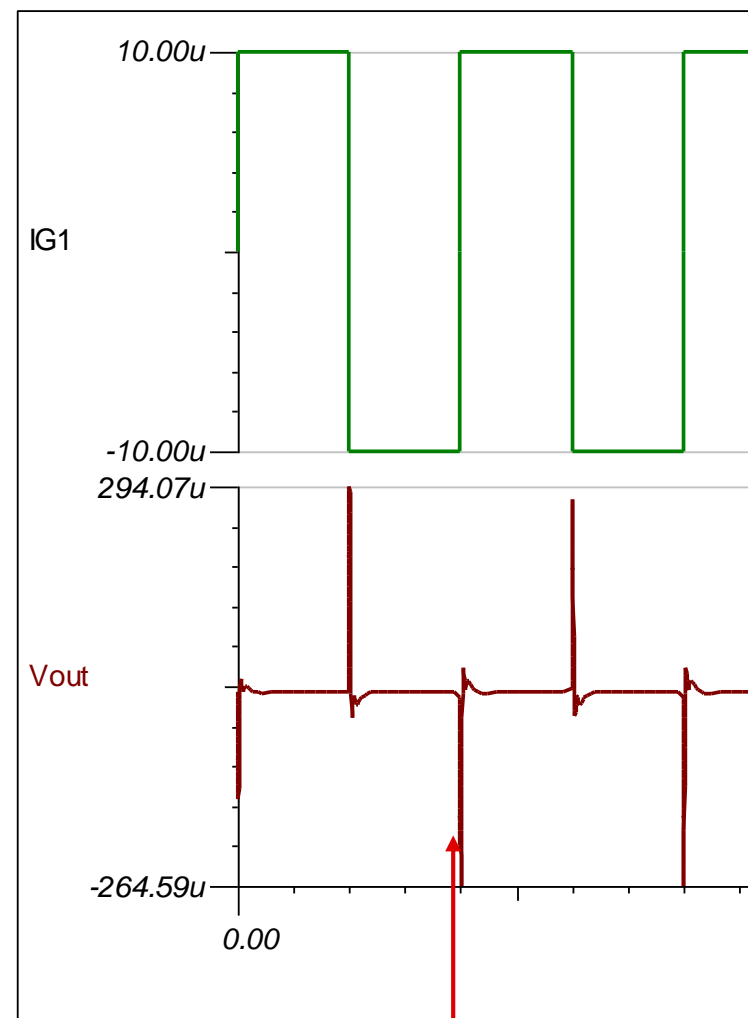
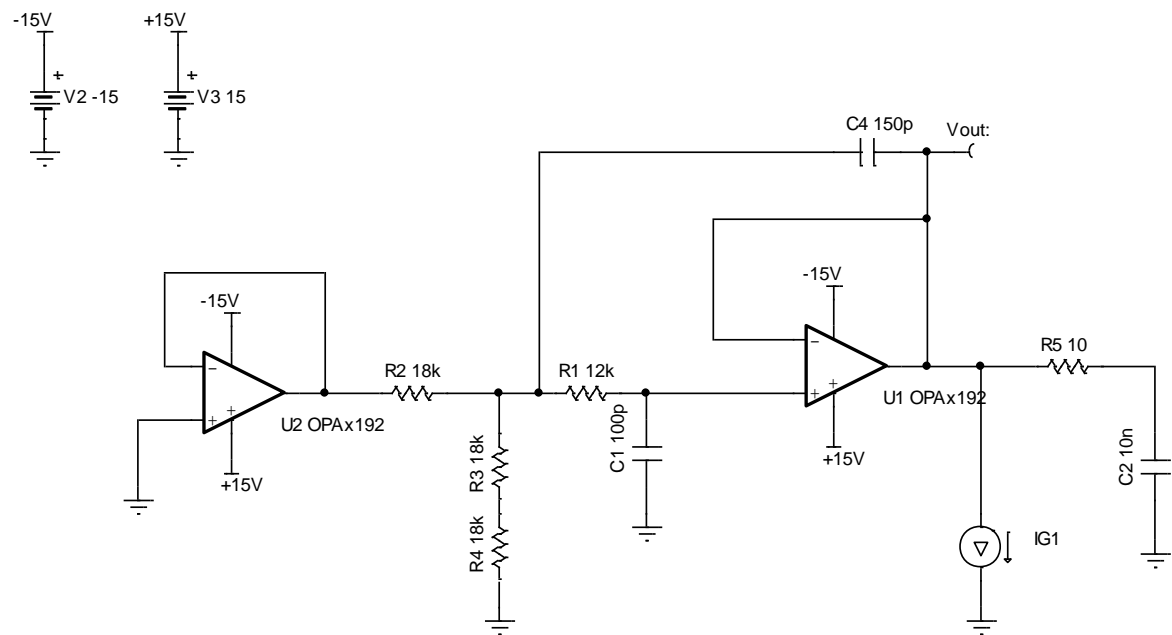
# New output filter



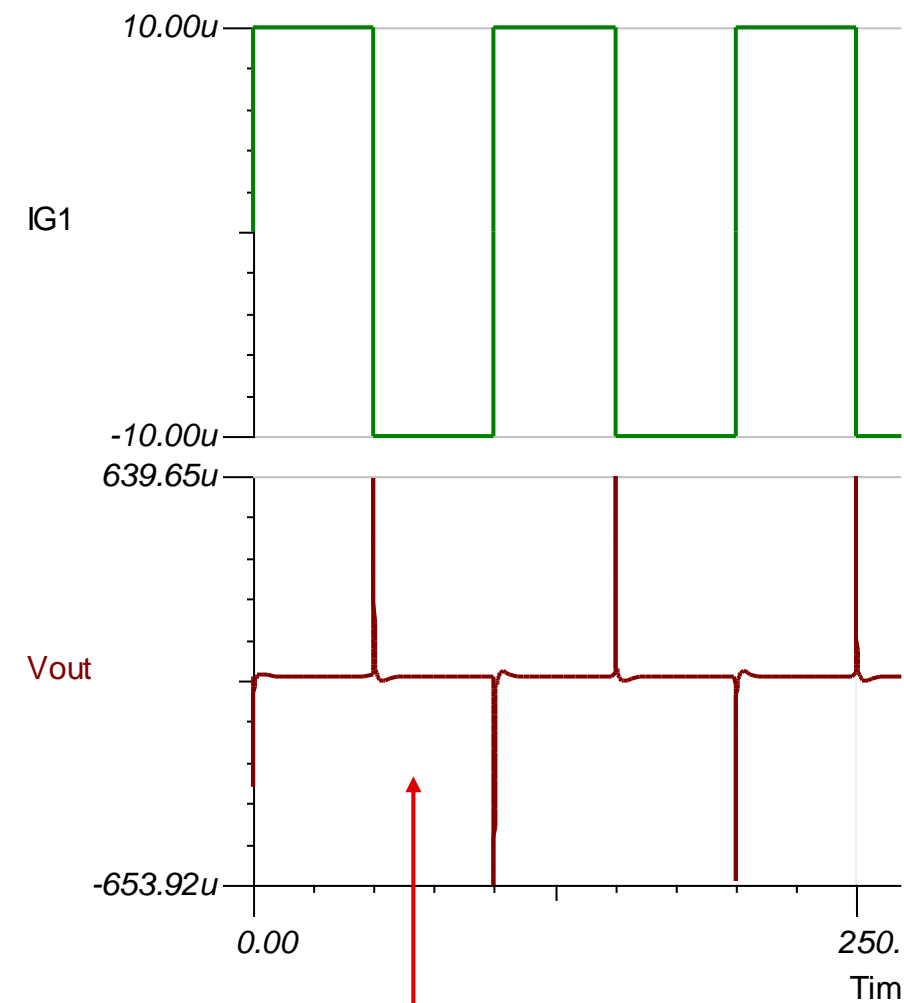
Adjusting the filter eliminated the 40dB/decade rate of closure. Even though the previous version showed good phase margin I would suggest adjusting as shown



# Transient test

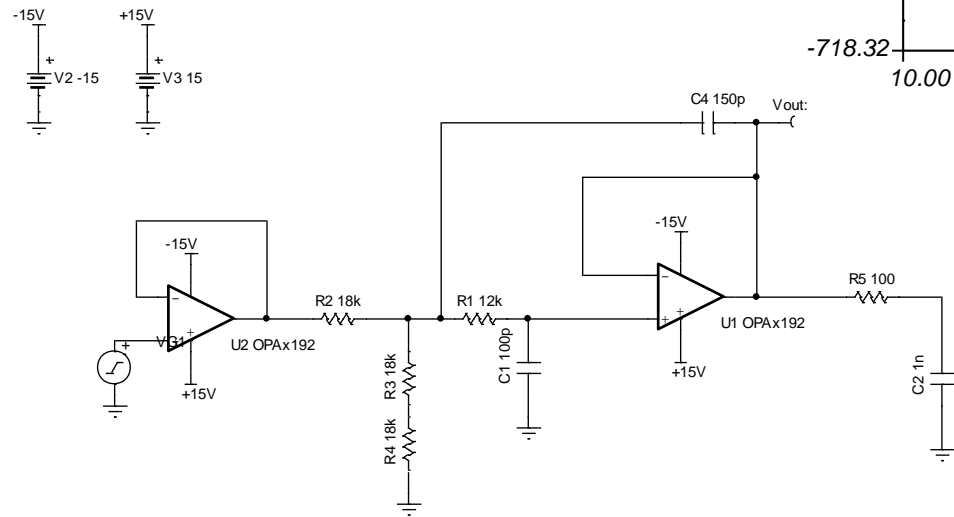
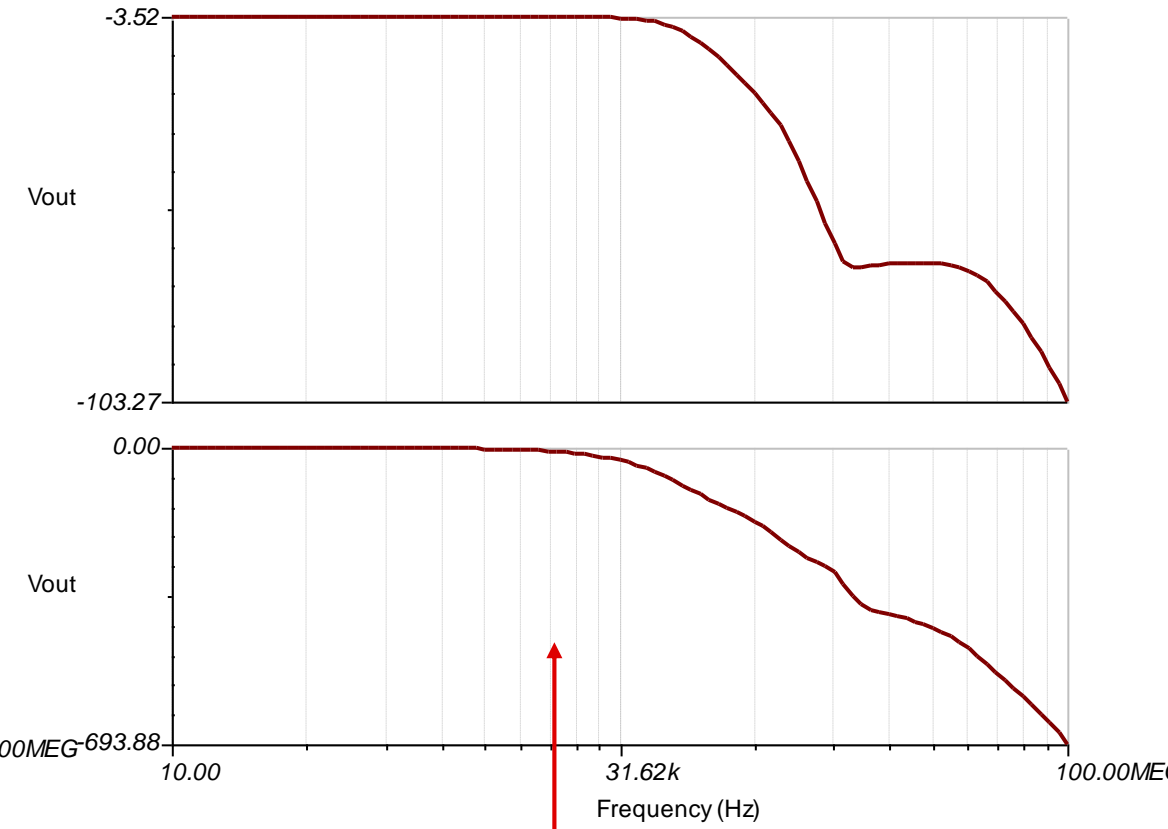
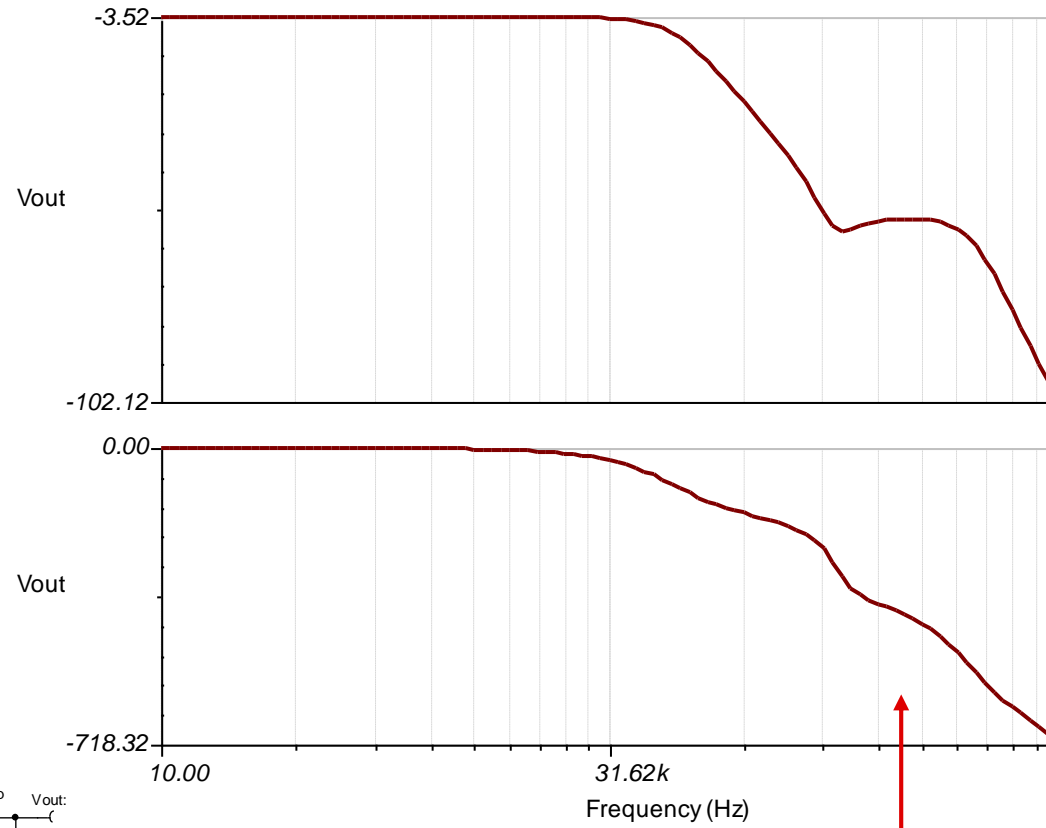


10 x 10nF filter



100 x 1nF filter

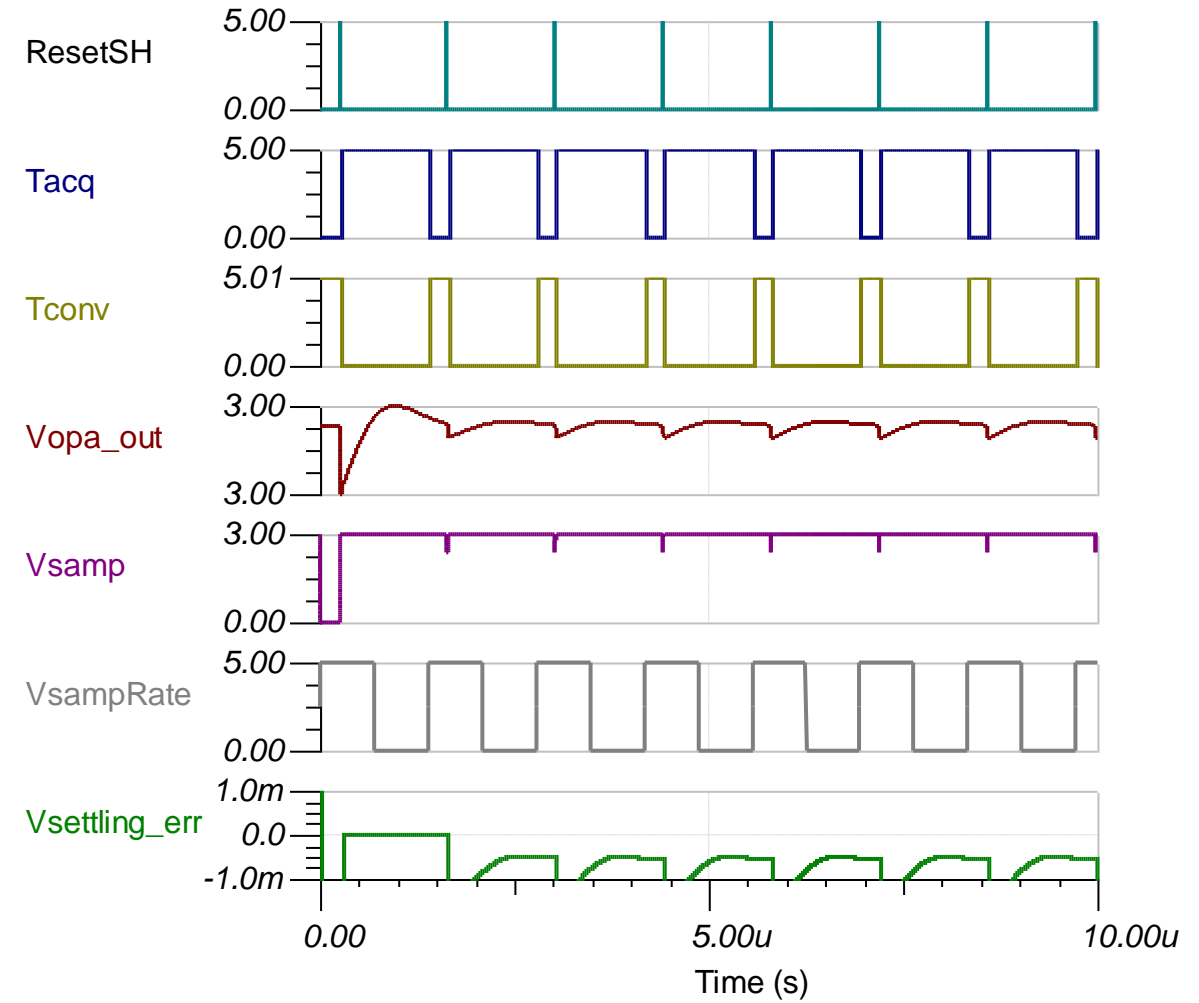
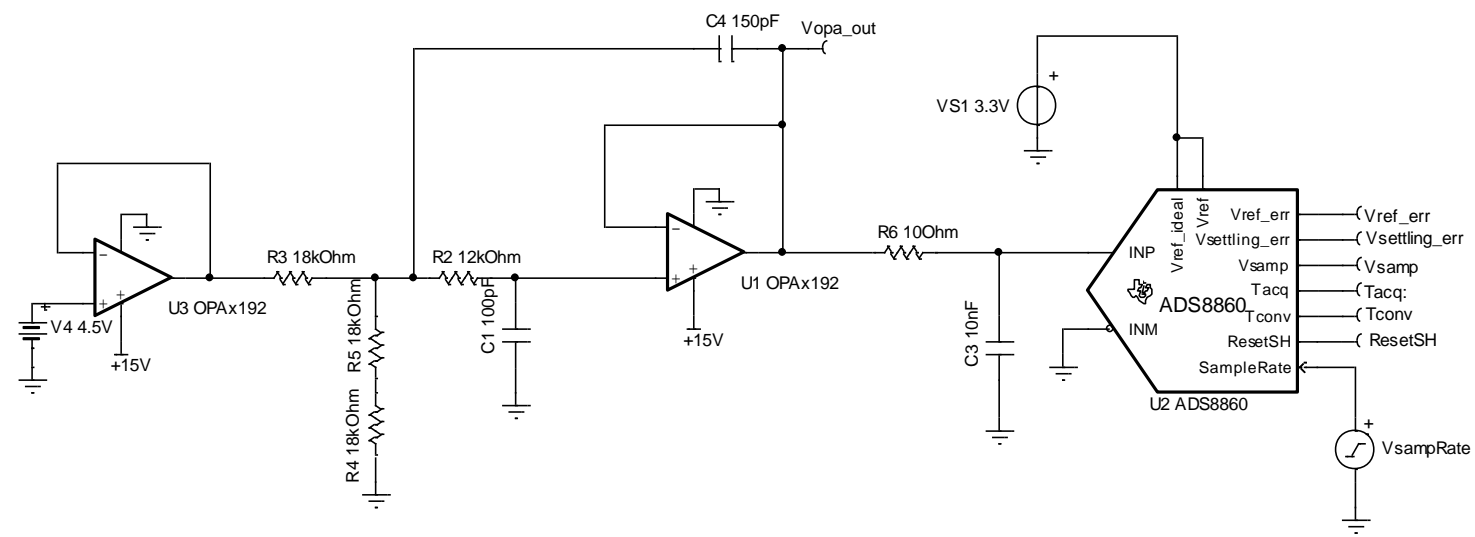
# AC peaking test



10 x 10nF filter

100 x 1nF filter

# ADC drive – original filter 10 x 10n



# ADC drive – new filter 10 x 10n

