Spec.	
DC Gain	6 dB
BW	≥ 10 GHz
Power Consumption	≤ 1.2 mW
Cap Load	50 fF

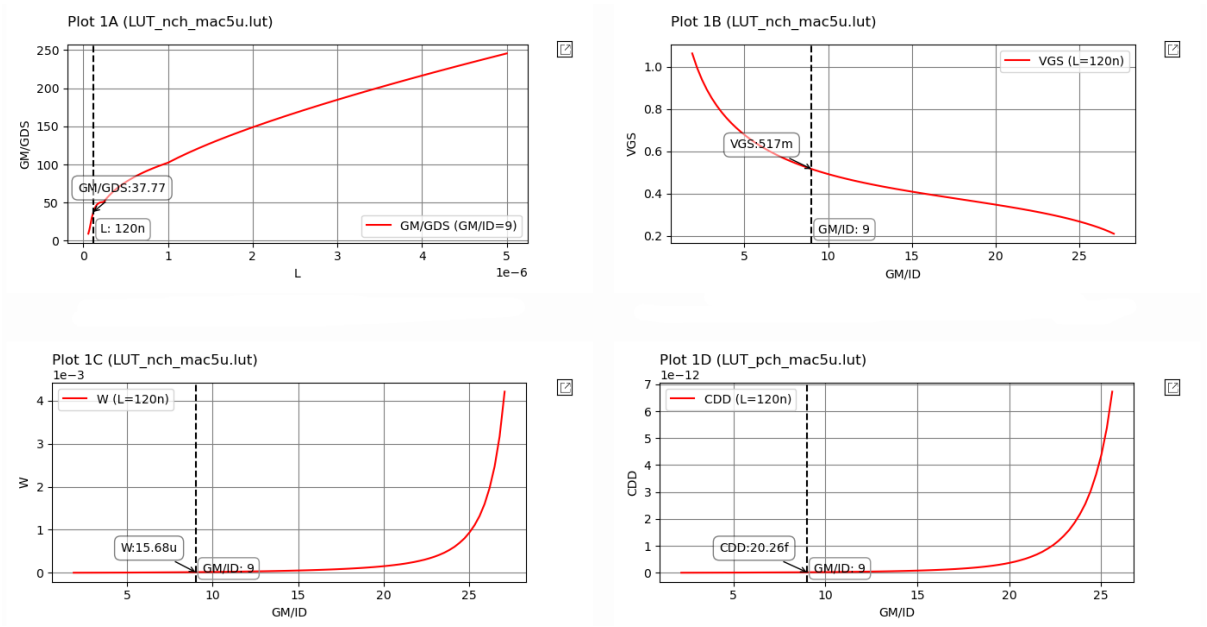
- Steps

1 | $P_{cons} = V_{DD}\, I_D \leq 1.2\ mW \rightarrow I_D \leq 1\ mA$

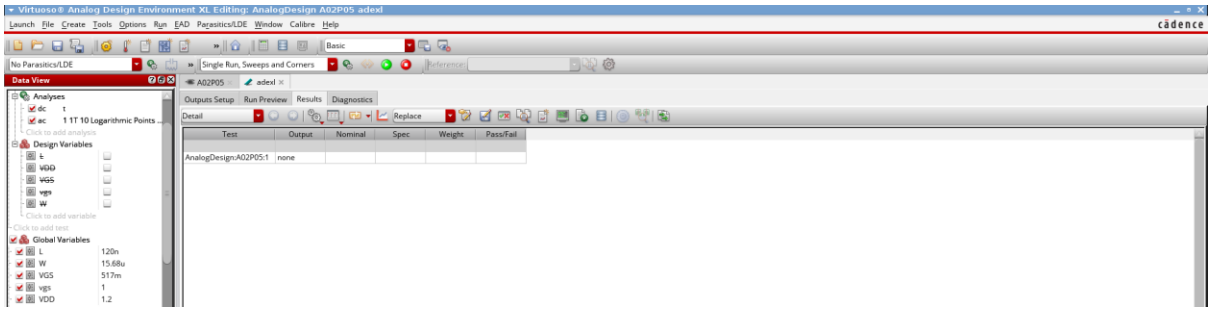
2 | $GBW = \frac{g_m}{2\pi C_{out}} \geq 2 * 10\ GHz \rightarrow g_m \geq 6.3\ mS \rightarrow g_m = 9\ mS \rightarrow \frac{g_m}{I_D} = 9$

3 | $A_v = g_m R_{out} = 2 \rightarrow R_{out} = 225\ \Omega \rightarrow R_D = 270\ \Omega \rightarrow r_o \geq 1350\ \Omega \rightarrow \frac{g_m}{g_{ds}} \geq 12.15$

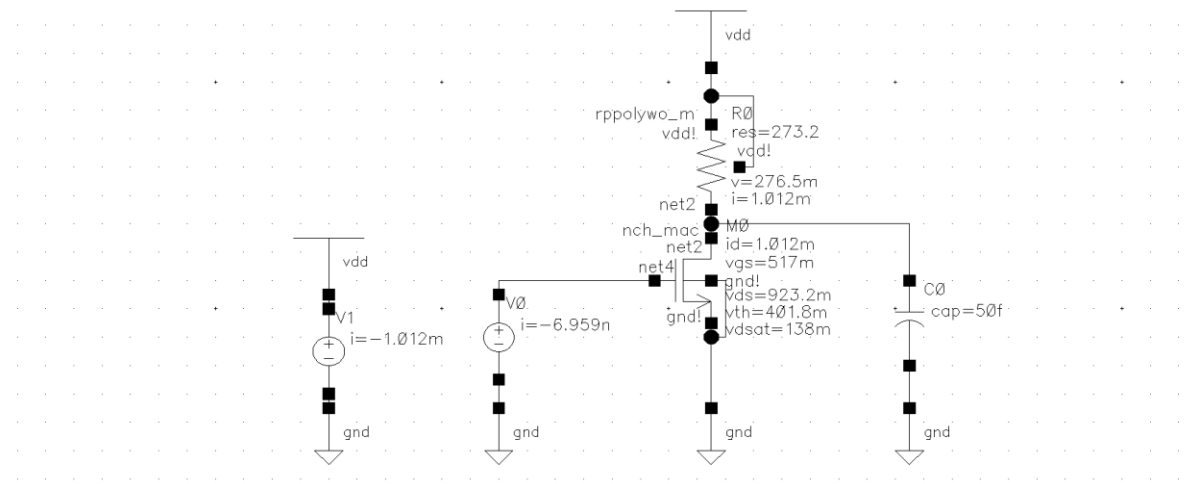
4 | $V_{DS} = V_{out} = V_{DD} - I_D * R_D = 1.2 - 1m\,.270 = 930\ mV$



- Setup



- DC Operating points



- AC Analysis