

CIRCUIT DIAGRAM

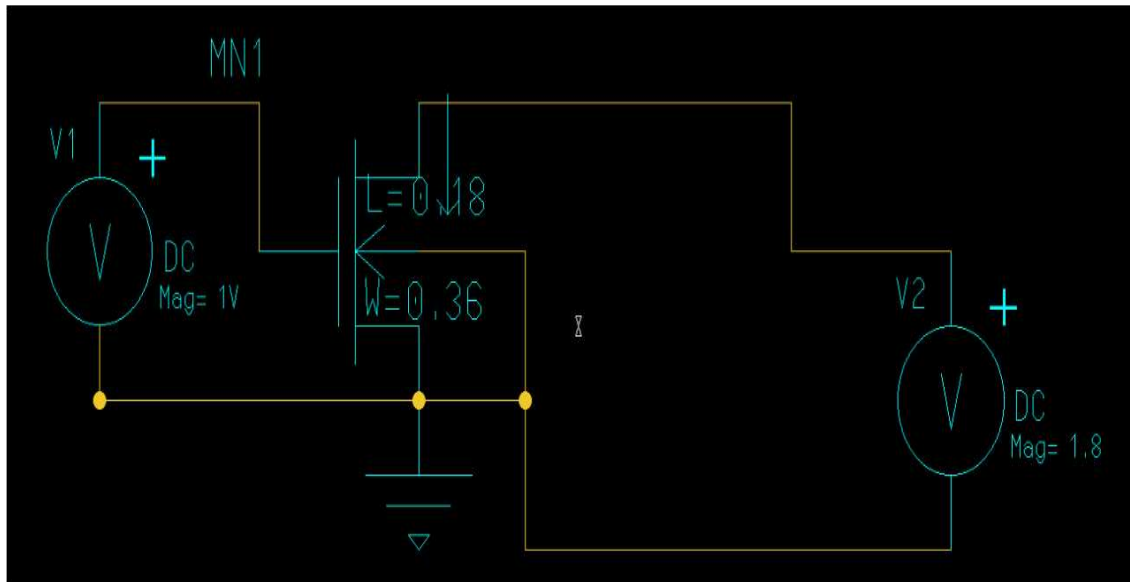


Fig 1. NMOS

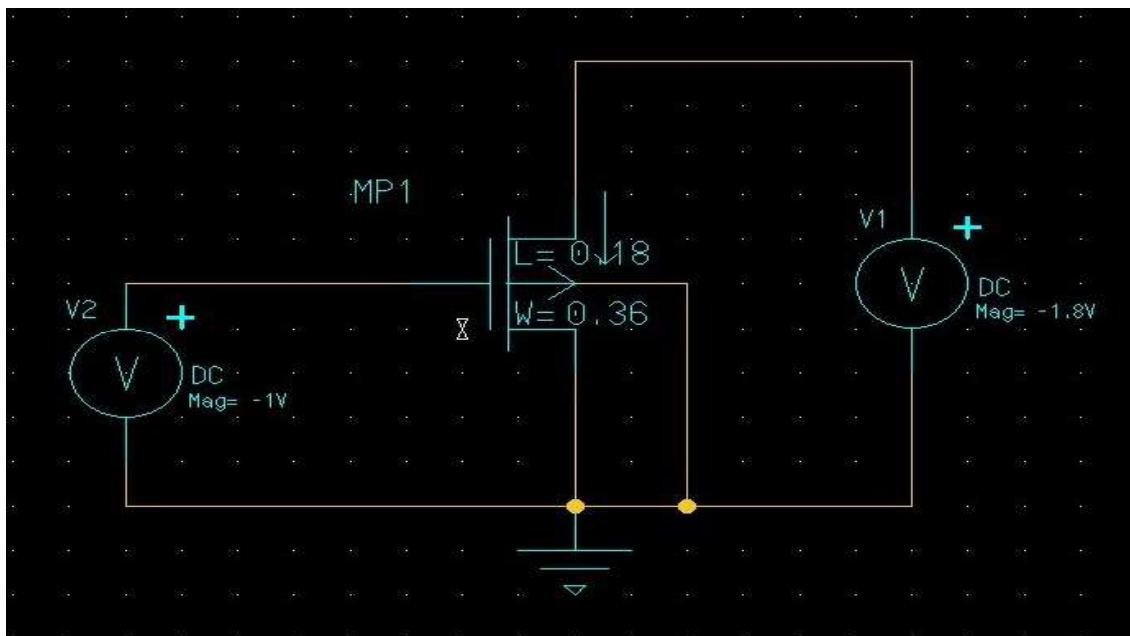
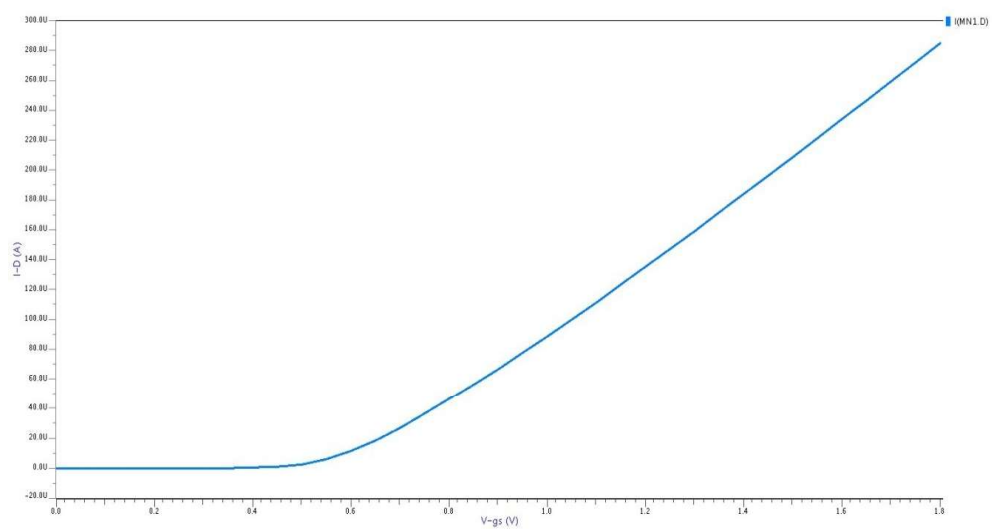


Fig 2. PMOS

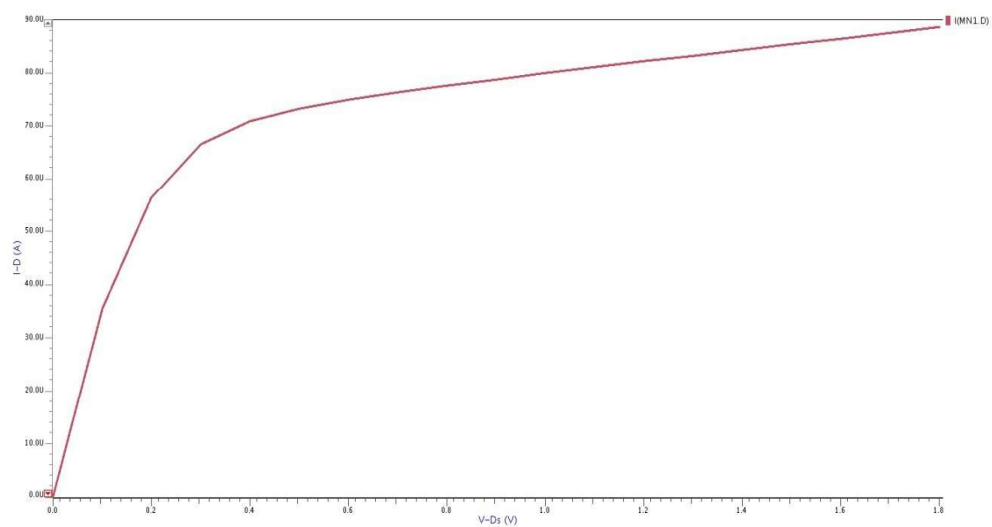
Results

NMOS(180nm)

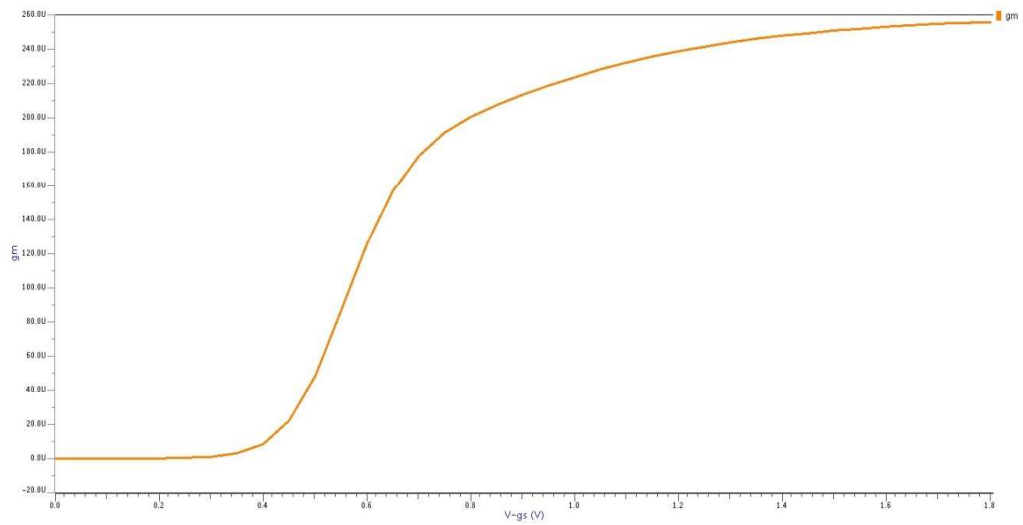
Id V/s Vgs



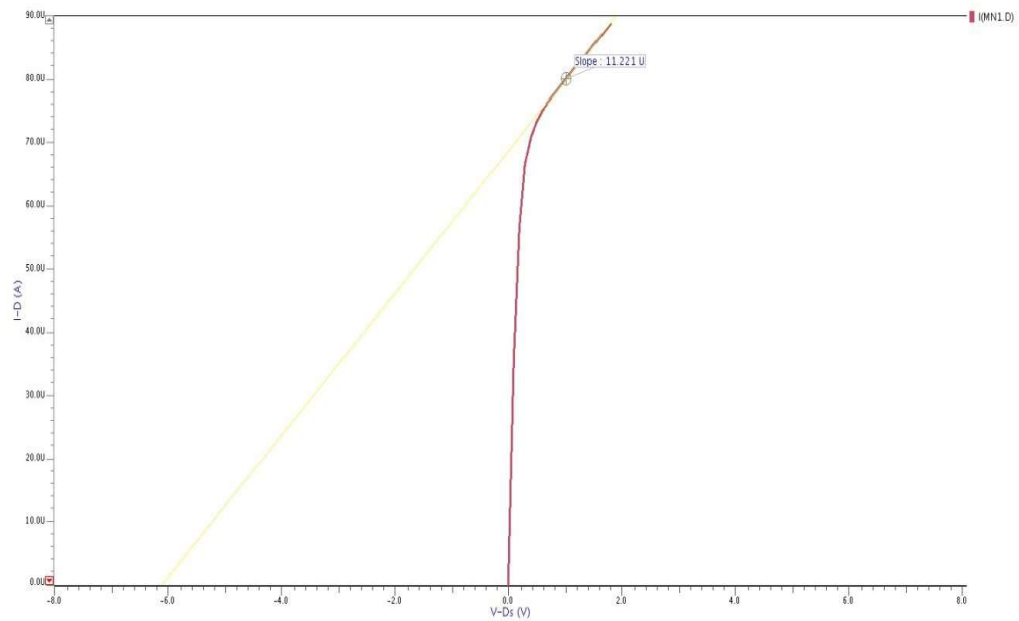
Id V/s Vds



gm V/s Vgs



Early Voltage



180 nm(W/L=2)

Output Transconductance = $g_0 = 11.211 \mu\text{A/V}$

Early Voltage = $V_a = 6.89\text{V}$

Channel Length Modulation Factor = $\lambda = 0.145 \text{ V}^{-1}$

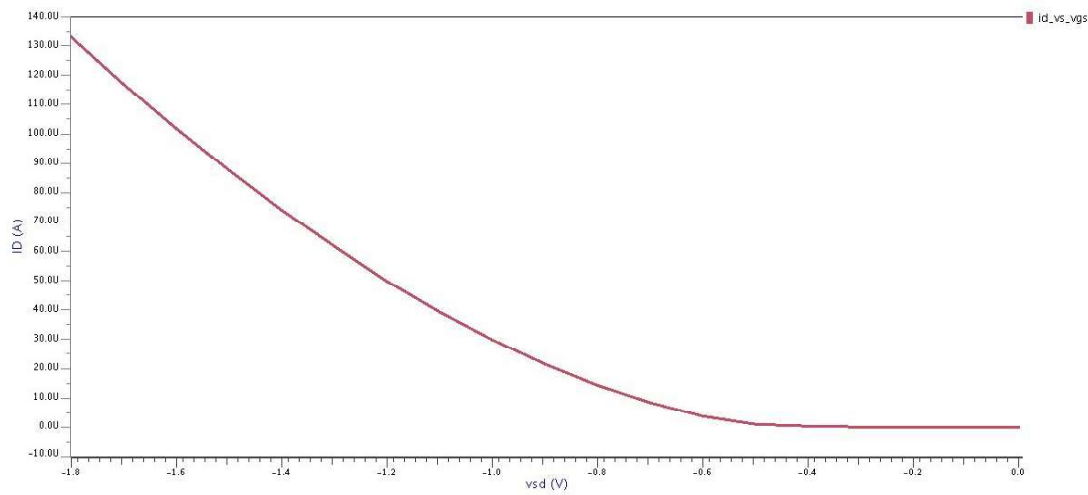
Output Resistance = $R_0 = 89118.6\Omega$

Drain Current at saturation point = $I_d = 79.323\mu\text{A}$

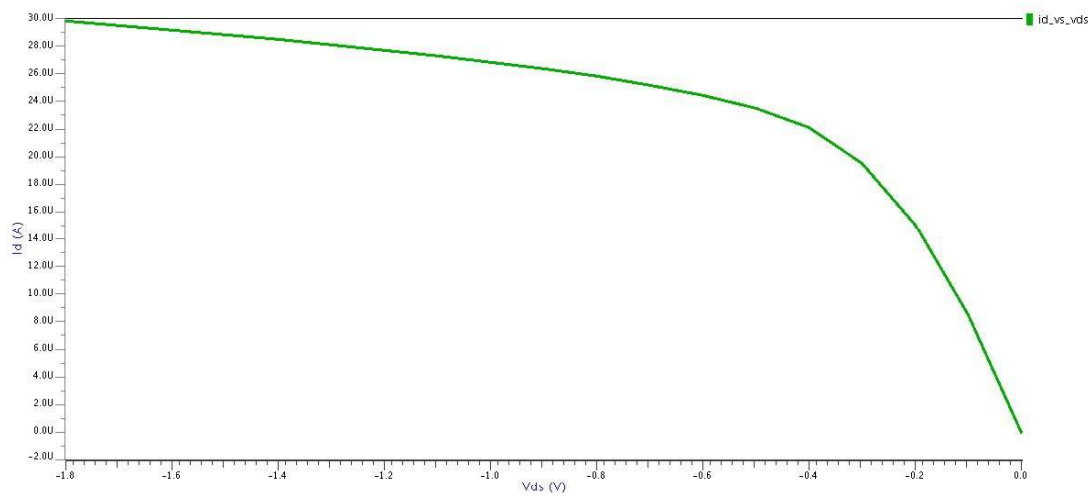
$V_{gs} - V_{th} = 1.033\text{V}$

$\mu_n C_{ox} = 74.33 \mu\text{A/V}^2$

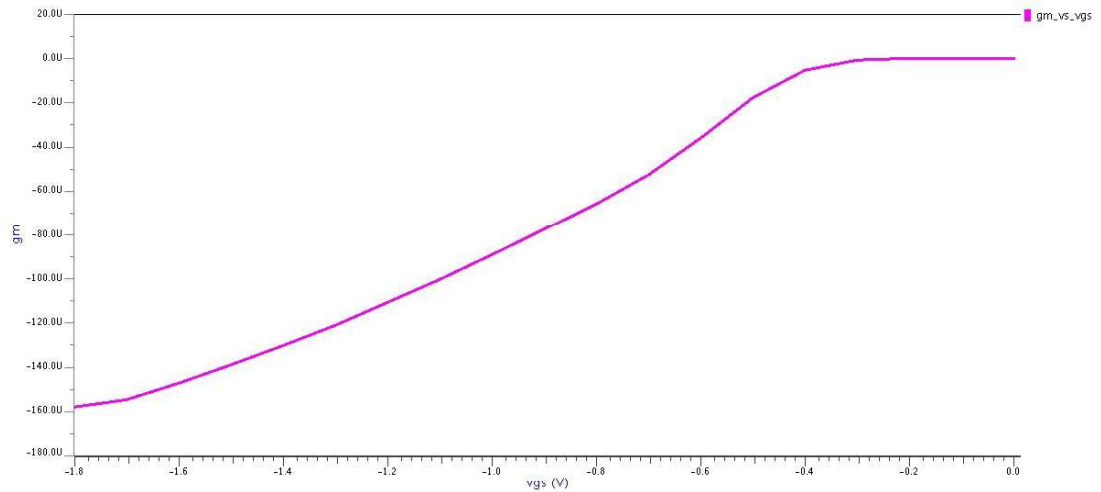
PMOS(180nm)



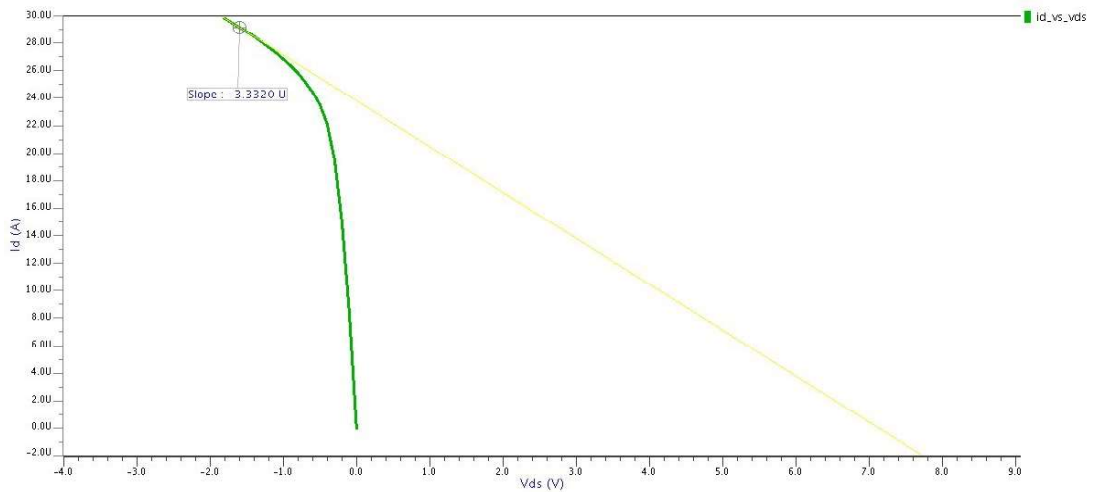
I_D V/s V_{GS}



I_D V/s V_{DS}



Gm V/s Vgs



Early Voltage

Output Transconductance = $g_0 = 3.332 \text{ uA/V}$

Early Voltage = $V_a = 6.98 \text{ V}$

Channel Length Modulation Factor = $\lambda = 0.143 \text{ V}^{-1}$

Output Resistance = $R_0 = 300120.04 \text{ ohm}$

Drain Current at saturation point = $I_d = 29.296 \text{ uA}$

$V_{gs} - V_{th} = 1.475 \text{ V}$

$\mu_n C_{ox} = 13.465 \text{ uA/V}^2$

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