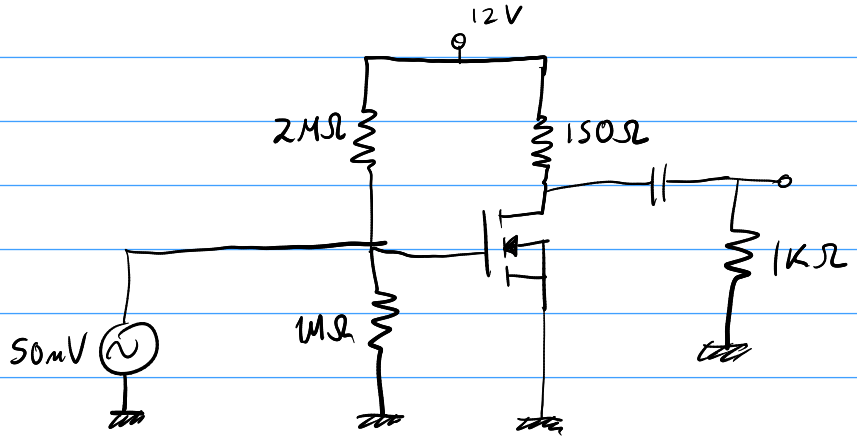

$V_{GS(th)} = 2V$

$V_{GS(on)} = 4,5V$

$I_{D(on)} = 75mA$

$R_{DS(on)} = 6\Omega$

$I_{D(max)} = 200mA$

$P_{D(max)} = 350mW$

$V_{DS} = I_D \cdot R_{DS} = 75mA \cdot 6\Omega = 0,45V$

$V_{DSmax} = I_{Dmax} R_{DS} = 200mA \cdot 6\Omega = 1,2V$

$V_{GS} > V_{TH}$; $V_{DS} < V_{GS} - V_{TH}$ ← ∴ Región lineal

$$I_{D(on)} = K(V_{GS(on)} - V_{GS(th)})^2$$

$$K = \frac{I_{D(on)}}{(V_{GS(on)} - V_{GS(th)})^2}$$

$$K = \frac{75mA}{(4,5V - 2V)^2} = 0,012$$

$g_m = 2K(V_{GS(on)} - V_{GS(th)})$

$g_m = 2 \cdot 0,012 (4,5V - 2V)$

$g_m = 0,06\ S$

Ganancia $A_V = -g_m \cdot Z_o$ $\quad r_d \gg 10R_D$

$Z_o = r_d \| R_D$

$Z_o = R_D$

$A_V = -0,06 \cdot 150\Omega$

$A_V = -9$

$\Rightarrow V_{out} = V_{in} \cdot A_V$

$V_{out} = 5mV \cdot -9$

$V_{out} = -45mV$

Si $R_D = 1\Omega$ la ganancia baja ya que Av está relacionada directamente con R_D