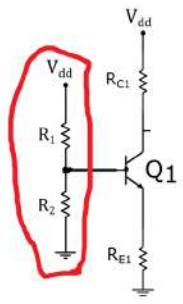


$$A_{total} = \frac{U_o}{U_x}$$



$$V_{th} = V_{dd} \frac{R_2}{R_1 + R_2}$$

$$R_{th} = R_1 // R_2$$

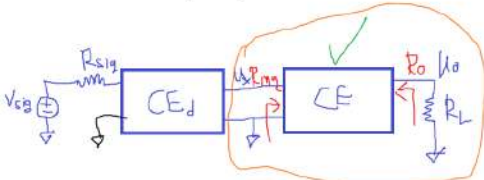
$$V_{th} - I_B R_{th} - V_{BE} - (B+1) I_B R_E = 0 \Rightarrow I_B \checkmark$$

$$I_E = \beta I_B \checkmark \quad g_m = \frac{I_C}{V_T} \Rightarrow r_n = \frac{\beta}{g_m}$$

$$r_o = \frac{r_n}{\beta + 1}$$

$V_T = 25 \text{ mV}$	$\beta = 100$	$V_A = \infty$ (οχι Early)	$ V_{BE} = 0.7 \text{ V}$ (DC)
$V_{CC} = 15 \text{ V}$	$R_{sig} = 1 \text{ k}\Omega$	$R_1 = 100 \text{ k}\Omega$	
$R_3 = 50 \text{ k}\Omega$	$R_2 = 3 \text{ k}\Omega$	$R_C = 5 \text{ k}\Omega$	$R_E = 10 \text{ k}\Omega$

$$R_3 = 100 \text{ k} \quad R_4 = 50 \text{ k}$$



CE με $E=0$

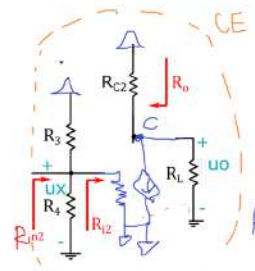
$$A_2 = \frac{U_o}{U_x} = -g_m (R_C // R_L)$$

$$R_o = R_C$$

$$R_{i2} = r_n$$

$$R_{in2} = R_3 // R_4 // R_{i2}$$

$$R_{in2} = R_3 // R_4 // r_n$$



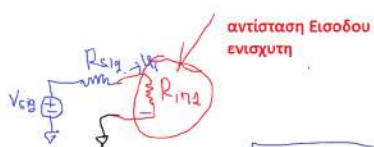
$$A_1 = \frac{U_x}{U_i}$$

$$A_1 = -g_m \frac{r_n}{r_n + (\beta + 1) R_E} (R_C // R_{in2})$$

όρος που οφείλεται στην RE

$$R_{in1} = r_n + (\beta + 1) R_E$$

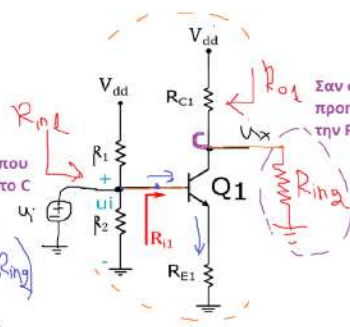
$$R_{in1} = R_1 // R_2 // R_{in1}$$



$$\frac{U_i}{U_{sig}} = \frac{R_{in1}}{R_{sig} + R_{in1}}$$

$$A_{total} = \frac{U_o}{U_x} \cdot \frac{U_x}{U_i} \cdot \frac{U_i}{U_s}$$

$$A_2 \quad A_1 \quad A_0 < 1$$



Σαν φορτίο του προηγούμενου βάζεις την Rin του επόμενου