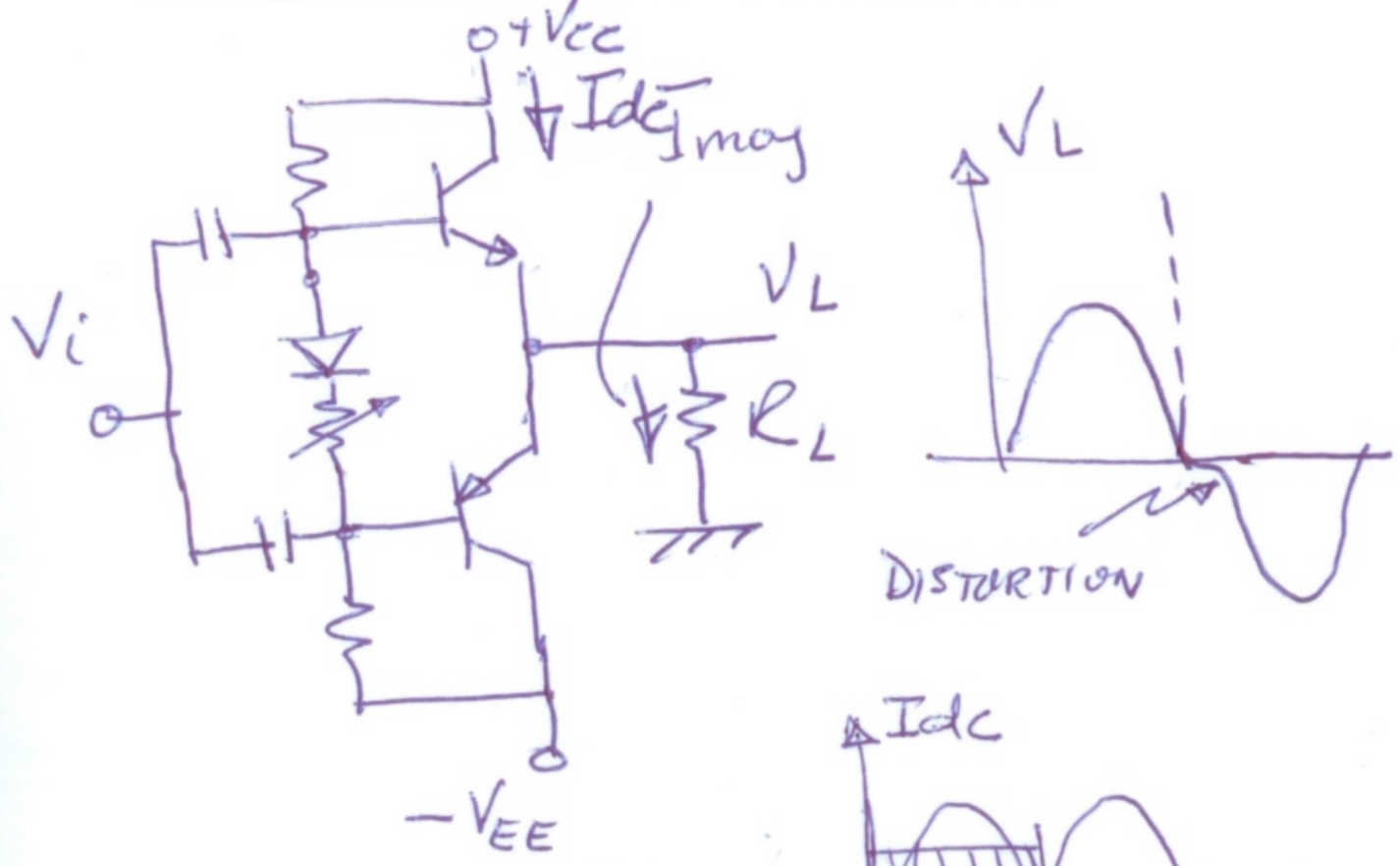
AMPLIC CLASSE B



$$Idc = \int_0^{\pi} \frac{I_{max} \sin\theta}{\pi} d\theta$$

$$I_{dc} = \frac{I_{max}}{\pi} \left[-\cos\theta \right]_0^{\pi} = \frac{2\,I_{max}}{\pi}$$

$$P_{i(dc)} = V_{cc} \frac{2\,I_{(p)}}{\pi}$$

$$P_{o(ac)} = \frac{V_L^2(rms)}{R_L} = \frac{V_L^2(p)}{2\,R_L}$$

RENDEMENT

$$\eta\% = \frac{P_{o(ac)}}{P_{i(dc)}} = \frac{\pi}{4} \frac{V_{L(p)}}{V_{cc}} \%$$

$$MAX = \eta = \frac{\pi}{4} = 78.5\%$$

DISSIPATION DES TRANSISTORS

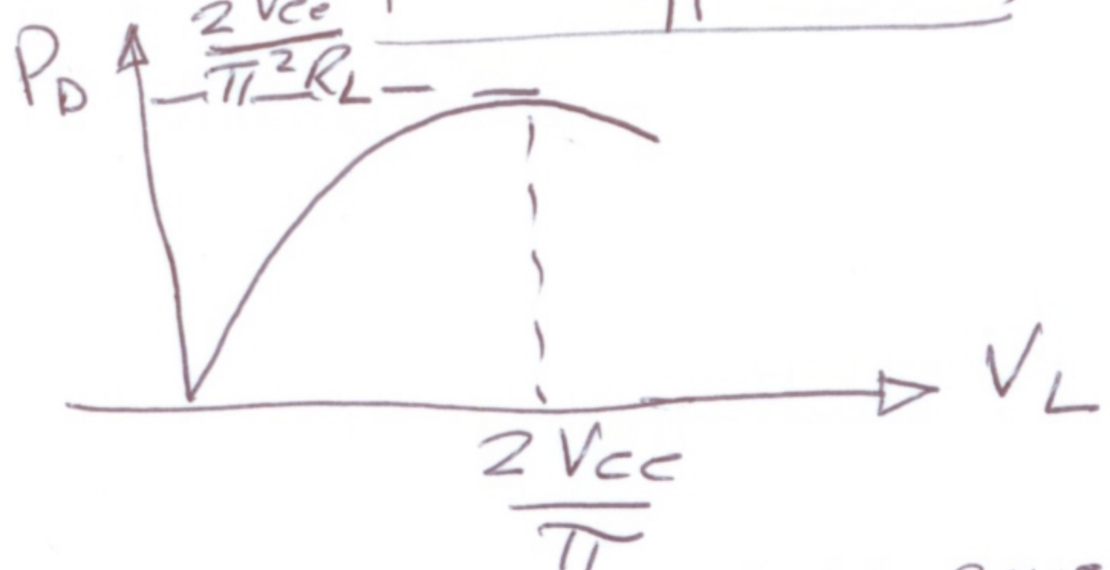
$$P_D = P_{i(dc)} - P_{o(ac)} =$$

$$P_D = \frac{2}{\pi} \frac{V_L}{R_L} V_{cc} - \frac{1}{2} \frac{V_L^2}{R_L}$$

TENSION V_L DE DISSIPATION MAXIMUM

$$\frac{dP_D}{dV_L} = 0 = \frac{2}{\pi} \frac{V_{cc}}{R_L} - \frac{2}{2} \frac{V_L}{R_L}$$

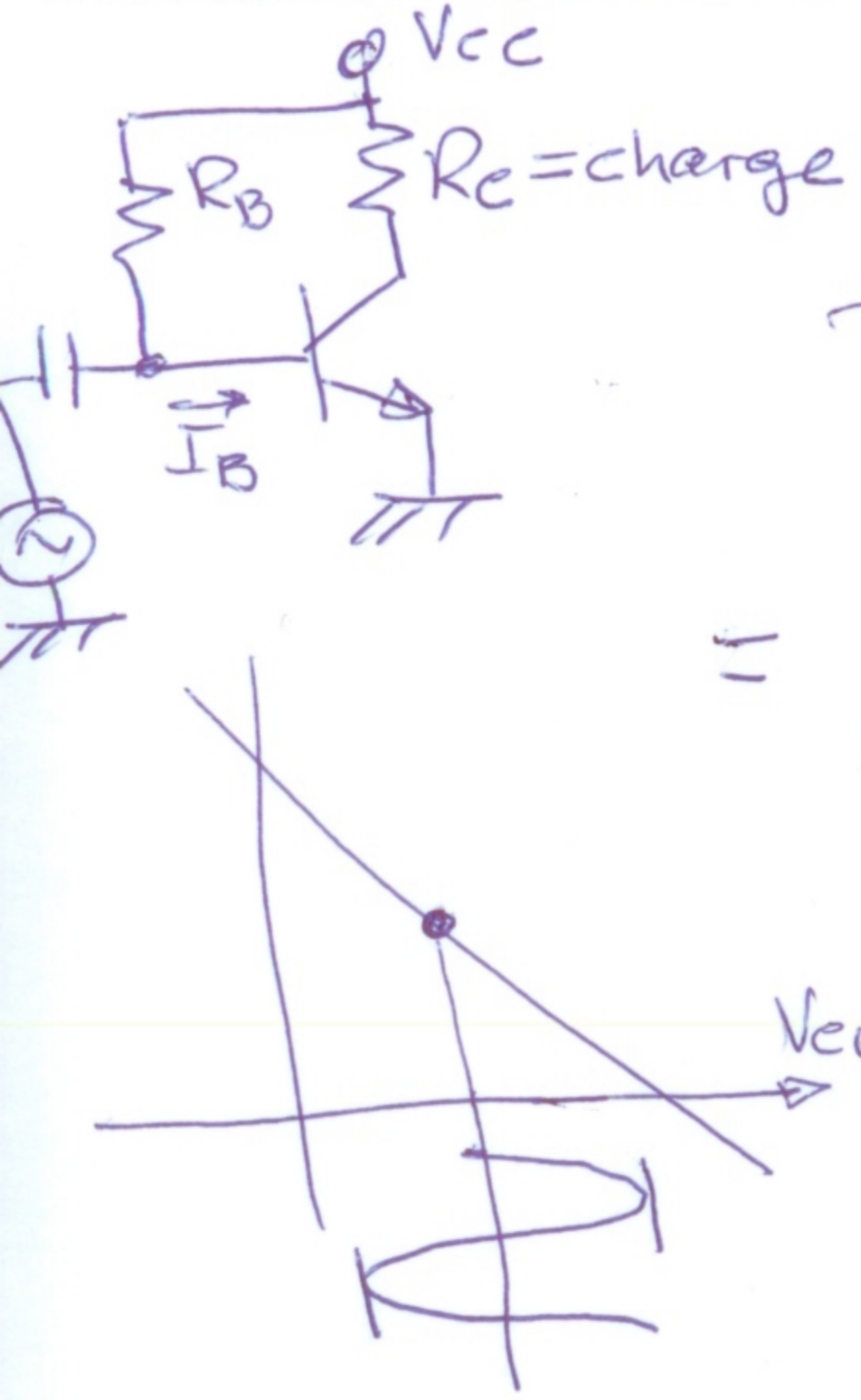
$$\boxed{V_O = \frac{2}{\pi} V_{cc}}$$



ON PEUT OBTENIR LA PUISSANCE DE DISSIPATION MAXIMALE

$$\boxed{P_{D(max)} = \frac{2\,V_{cc}^2}{\pi^2 R_L}}$$

AMPLI PUISSANCE CLASSE A



$P_{i(dc)} = V_{cc} \cdot I_C$

$$P_{o(ac)} = \frac{V_{c(rms)}^2}{R_c} = \frac{V_{CE(P-P)}^2}{(2\sqrt{2})^2 \cdot R_c} = \frac{V_{CE(P-P)}^2}{8 R_c}$$

RENDEMENT

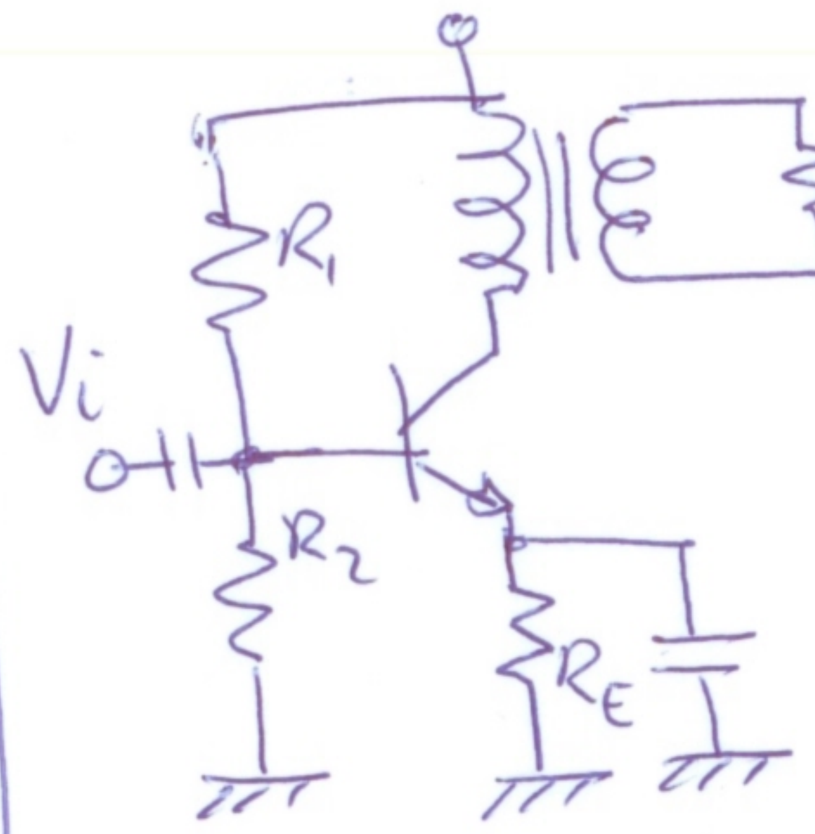
$$\eta(\%) = \frac{P_{o(ac)}}{P_{i(dc)}} \times 100$$

$$\text{MAX } P_{i(dc)} = V_{cc} \cdot \frac{V_{cc}}{2R_c}$$

$$\text{MAX } P_{o(ac)} = \frac{V_{cc}^2}{8R_c}$$

$$\text{RENDEMENT MAXIMUM} = \frac{\text{MAX } P_{o(ac)}}{\text{MAX } P_{i(dc)}} = \frac{1}{4} = 25\%$$

RELIÉ PAR TRANSFO



I_{CQ} = 140mA

$$\eta = 50\left(\frac{V_{CEMAX} - V_{CEMIN}}{V_{CEMAX} + V_{CEMIN}}\right)^2 \%$$