

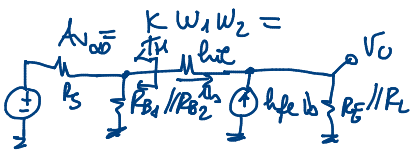
circuito per piccoli segnali



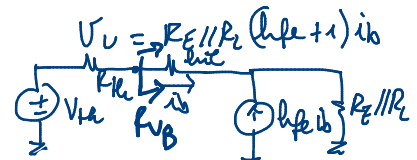
$$R_B = R_{B1} // R_{B2} \quad i_c = (\beta + 1) i_b$$

$$A_v = \frac{V_U}{V_S} = \frac{\beta \beta' S^2}{(S + \omega_1)(S + \omega_2)}$$

$$A_v \rightarrow \infty$$



$$A_{v00} = \beta \beta' \frac{R_E // R_L}{h_{ie}}$$



$$V_{be} = \frac{V_S R_B // R_E // R_L (\beta + 1) i_b}{R_S + R_B // R_E // R_L (\beta + 1) i_b}$$

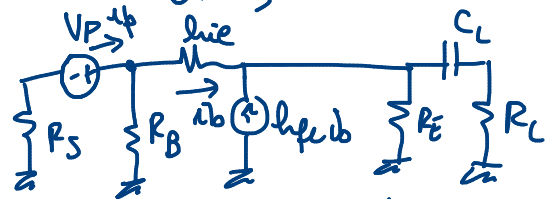
$$V_{be} = \frac{V_S R_B // R_E // R_L}{R_S + R_B // R_E // R_L (\beta + 1) i_b}$$

$$R_{VB} = h_{ie} + R_E // R_L (\beta + 1)$$

$$V_U = \frac{R_E // R_L (\beta + 1) \frac{V_{be}}{R_{VB} + R_{VB}}}{R_S + R_{VB} + R_E // R_L (\beta + 1) \frac{R_B // R_E - V_S}{R_B // R_E + R_S}} = A_{v00} V_S$$

$$A_{v00}$$

$$W_1 = \frac{1}{C_S R_{V_{CS}}} ; W_2 = \frac{1}{C_L R_{V_{CL}}}$$



$$R_{V_{CS}} = \frac{V_p}{i_p} \quad R_{V_{CS}} \Big|_{C_L \text{ \u00e8 aperto}} = R_S + R_B \parallel [h_{ie} + R_E (h_{fe} + 1)]$$

$$R_{V_{CS}} \Big|_{C_L \text{ \u00e8 chiuso}} = R_S + R_B \parallel [h_{ie} + (h_{fe} + 1) R_E \parallel R_L]$$

$$W_1 < W_2 \quad R_{V_{CS}} \gg R_{V_{CL}}$$

$$\text{APPROX.} \Rightarrow \begin{cases} R_{V_{CS}} = R_{V_{CS}} \Big|_{C_L \text{ \u00e8 aperto}} = R_{V_{CS}}^0 \\ R_{V_{CL}} = R_{V_{CL}} \Big|_{C_S \text{ \u00e8 chiuso}} = R_{V_{CL}}^{CS} \end{cases}$$

$$W_1 = \frac{1}{C_S R_{V_{CS}}^0} \quad W_2 = \frac{1}{C_L R_{V_{CL}}^{CS}}$$

$$R_{V_{CL}}^{CS} = R_L + R_E \parallel \left[ \frac{h_{ie} + R_S \parallel R_B}{h_{fe} + 1} \right]$$

$\underbrace{\hspace{10em}}_{R_{V_E} \text{ nel doppio carico}}$

