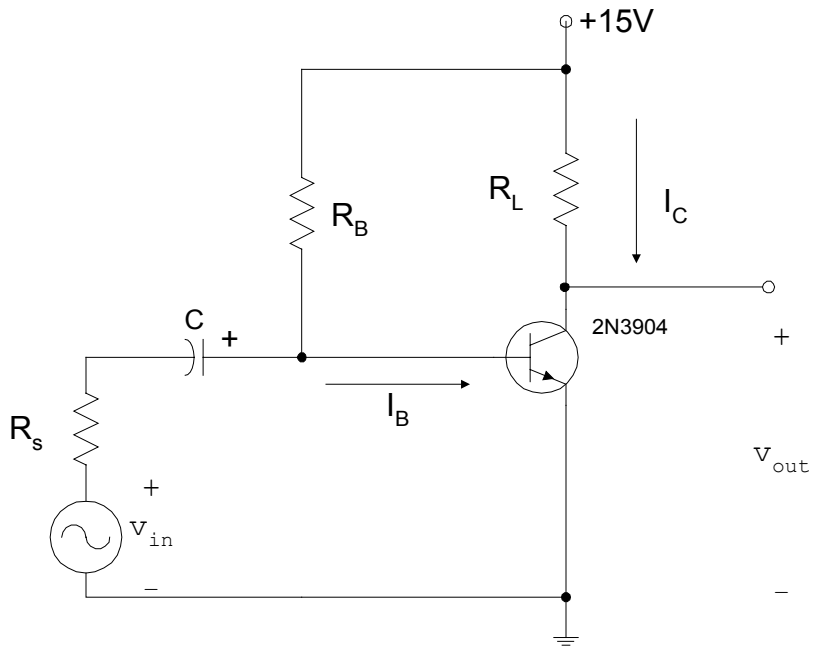
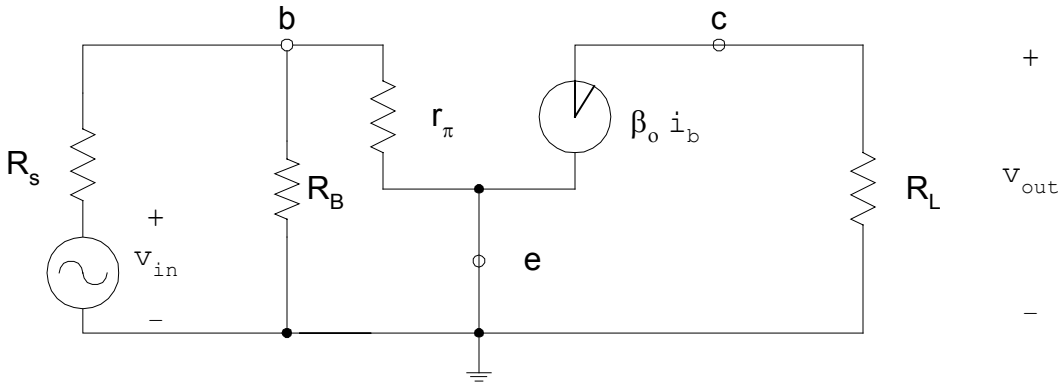
CONFIGURACIONES DEL AMPLIFICADOR DE TRANSISTOR CON CIRCUITOS EQUIVALENTES HÍBRIDO-Π

AMPLIFICADOR DE EMISOR COMÚN



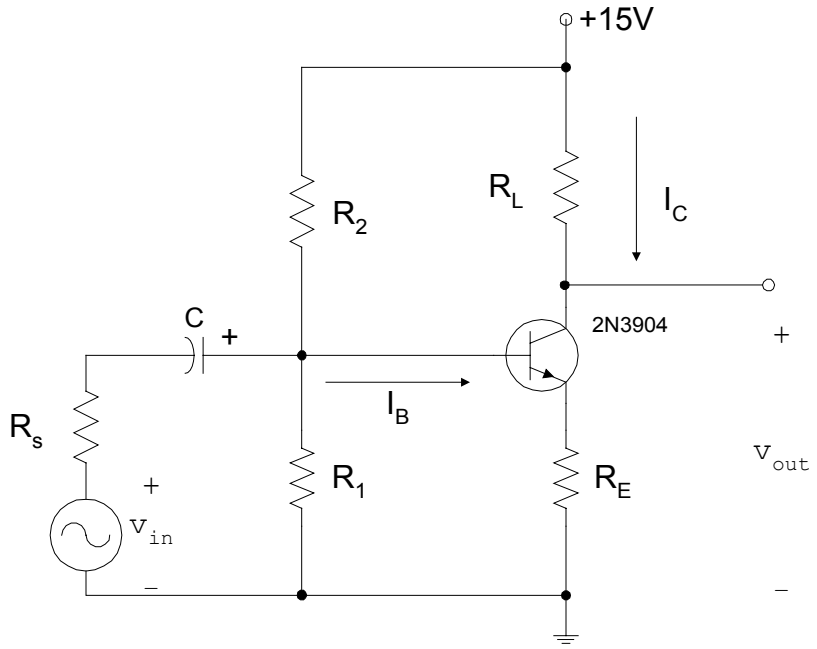


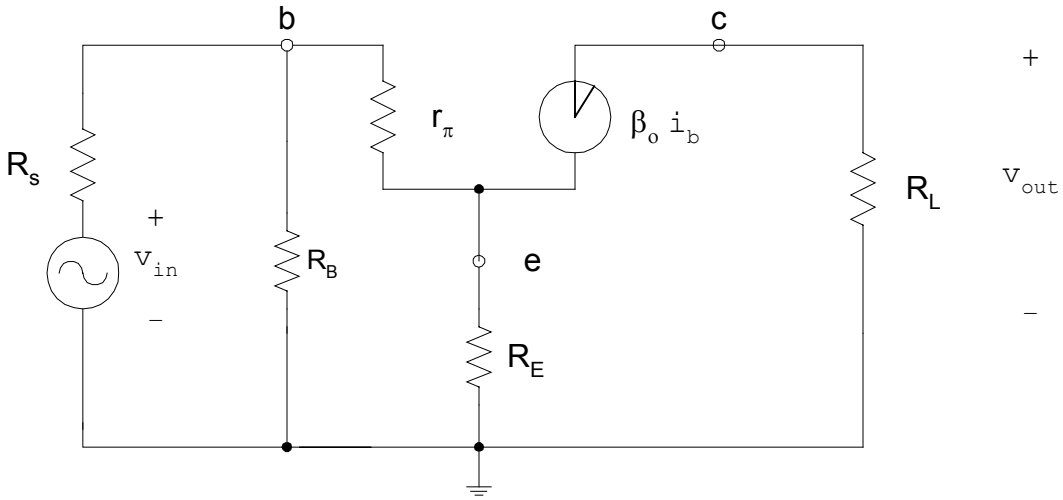
$$A_v = \frac{v_{out}}{v_{in}} = \frac{-\beta_o i_b R_L}{i_b\left[Rs + r_\pi\right]} = \frac{-\beta_o R_L}{Rs + r_\pi}$$

$$si \quad R_S << r_\pi, entonces\ A_v = \frac{-\beta_o R_L}{\frac{\beta_o}{g_m}} = -g_m R_L$$

CONFIGURACIONES DEL AMPLIFICADOR DE TRANSISTOR CON CIRCUITOS EQUIVALENTES HÍBRIDO-Π

AMPLIFICADOR DE EMISOR COMÚN CON RESISTENCIA DE DEGENERACIÓN DE EMISOR

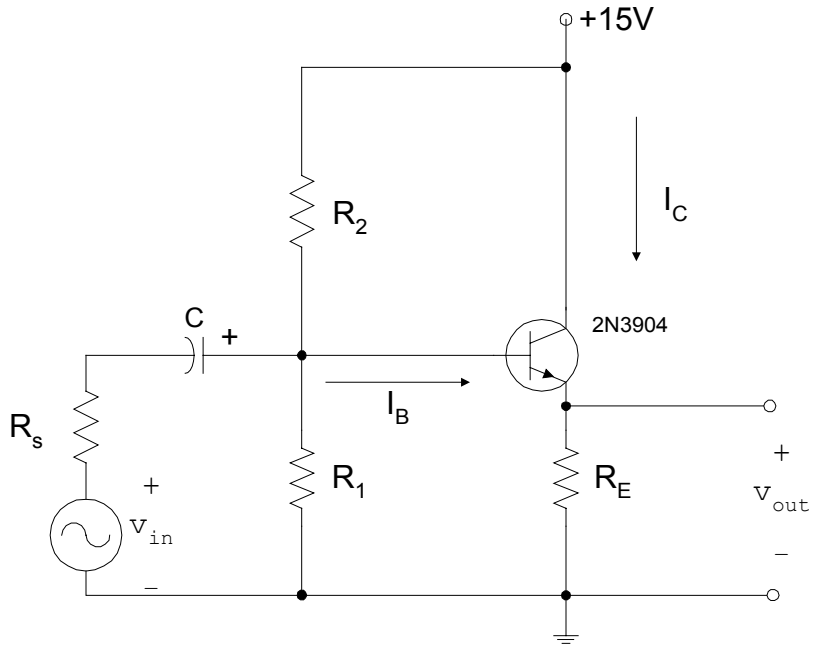


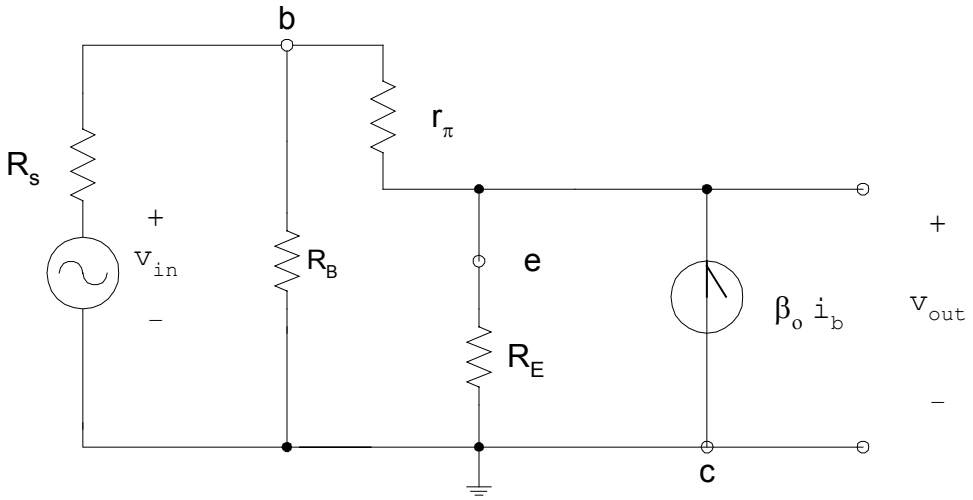


$$A_v = \frac{v_{out}}{v_{in}} = \frac{-\beta_o i_b R_L}{i_b\left[Rs + r_\pi + (\beta_o + 1)R_E\right]} = \frac{-\beta_o R_L}{Rs + r_\pi + (\beta_o + 1)R_E};$$

$$si\ \ Rs + r_\pi << (\beta_o + 1)R_E; \qquad entonces\ \ A_v \approx -R_L / R_E$$

AMPLIFICADOR DE COLECTOR COMÚN [SEGUIDOR DE EMISOR]





$$A_v = \frac{v_{out}}{v_{in}} = \frac{(\beta_o + 1) i_b R_E}{i_b \left[Rs + r_\pi + (\beta_o + 1) R_E \right]} = \frac{(\beta_o + 1)\ R_E}{Rs + r_\pi + (\beta_o + 1) R_E};$$

$$si\ \ Rs + r_\pi << (\beta_o + 1) R_E; \qquad entonces\ \ A_v \approx 1$$