

Formulário

	FC	DC	PC
A_{v0}	$-g_m r_o$	1	$1 + g_m r_o$
G_m	$-g_m$	g_m	$\frac{1}{r_o} + g_m$
R_{in}	∞	∞	$\frac{1}{g_m} + \frac{R_L}{1 + g_m r_o}$
R_{out}	r_o	$\frac{1}{g_m}$	$r_o + R_{sig}(1 + g_m r_o)$

$$I_C = \beta I_B \quad I_C = \alpha I_E \quad \alpha = \frac{\beta}{\beta + 1} \quad I_C = I_S \exp(V_{BE}/V_T) \quad g_m = \frac{I_C}{V_T} \quad r_o \approx \frac{V_A}{I_C}$$

$$r_\pi = \frac{\beta}{g_m} = \frac{V_T}{I_B} \quad r_e = \frac{\alpha}{g_m} = \frac{V_T}{I_E} \quad I_B = \frac{I_C F_C}{\beta}$$

$$I = I_{Ref} \frac{(W/L)_2}{(W/L)_1} \quad I_D = \frac{1}{2} \mu_n C_{ox} \frac{W}{L} (V_{GS} - V_{th})^2 (1 + \lambda V_{DS}) \quad I_D = \mu_n C_{ox} \frac{W}{L} (V_{GS} - V_{th}) V_{DS} \quad \lambda = \frac{1}{V_A}$$

$$r_o = \frac{1}{\lambda I_D} \quad g_m = \mu_n C_{ox} \frac{W}{L} (V_{GS} - V_{th}) = \sqrt{2 \mu_n C_{ox} \frac{W}{L} I_D} = \frac{2 I_D}{V_{GS} - V_{th}} \quad R_{DS} = \frac{1}{\mu_n C_{ox} W/L (V_{GS} - V_{th})}$$