

Appendix

List of Formulae

$$V = I Z$$

$$Z_L = j\omega L$$

$$\sum_{m=1}^M v_m = 0$$

$$v = L \frac{di}{dt}$$

$$S = V I^*$$

$$V_T = \frac{kT}{q}$$

$$i_E = i_C + i_B$$

$$\alpha = \frac{\beta}{1 + \beta}$$

$$ABC = \overline{\overline{A} + \overline{B} + \overline{C}}$$

$$i_{Dn(LIN)} = (\mu_n C_{ox}) \left(\frac{W}{L} \right) \left((v_{GS} - V_t) v_{DS} - \frac{1}{2} v_{DS}^2 \right)$$

$$i_{Dn(SAT)} = \frac{1}{2} (\mu_n C_{ox}) \left(\frac{W}{L} \right) (v_{GS} - V_t)^2$$

$$A(s) = A_m F_H(s) = \frac{A_m}{\left(1 + \frac{s}{\omega_{P1}}\right) \left(1 + \frac{s}{\omega_{P2}}\right)}$$

$$g_m = 2 \frac{I_D}{(V_{GS} - V_t)}$$

$$g_m = \frac{I_C}{V_T}$$

$$P = I V$$

$$Z_C = \frac{1}{j\omega C}$$

$$\sum_{n=1}^N i_n = 0$$

$$i = C \frac{dv}{dt}$$

$$i_D = I_S \left[\exp\left(\frac{v_D}{nV_T}\right) - 1 \right]$$

$$i_C \approx I_S \left[\exp\left(\frac{v_{BE}}{V_T}\right) \right]$$

$$\beta = \frac{i_C}{i_B}$$

$$A + B + C = \overline{\overline{A} \overline{B} \overline{C}}$$

$$\tau_p = \frac{C_{load} \times \Delta V}{I_{avg}}$$

$$A_f = \frac{A}{1 + A\beta}$$

$$f = \frac{1}{2n\tau_p}$$

$$V_o = A_1 A_2 (V_i - \beta V_o) + A_1 V_n$$

$$r_o = \frac{V_A}{I_D}$$

END OF PAPER