You may find some of the following relationships and definitions useful:

$g_m = \frac{eI_C}{kT}$ $r_{be} = \frac{\beta}{g_m}$ $h_{FE} = \frac{I_C}{I_B}$ $\beta = \frac{\Delta I_C}{\Delta I_B} = \frac{i_c}{i_b}$ $\tau = RC$

$I = C\frac{dV}{dt}$ $\omega = 2\pi f$ $V(t) = (V_{START} - V_{FINISH})\exp\left(\frac{-t}{\tau}\right) + V_{FINISH}$

$V_{AVE} = \frac{V_P}{\pi}$ for a half wave rectified sinusoid $V_{rms} = \frac{V_P}{\sqrt{2}}$ for a sinusoid

$v_o = A_v(v^+ - v^-)$ $\frac{kT}{e} = 0.026\text{V}$

unit multipliers: p = $_x10^{-12}$, n = $_x10^{-9}$, μ = $_x10^{-6}$, m = $_x10^{-3}$, k = $_x10^{3}$, M = $_x10^{6}$ G = $_x10^{9}$

All the symbols have their usual meanings