Basic Electronics - Formula Sheet

Basic Electronics Formula Sheet

Ohm's Law

V = I * R

Power

P = V * I = I^2 * R = V^2 / R

Diodes

- **Forward Bias**: Current flows easily.
- **Reverse Bias**: Minimal current flows.
- **Shockley Equation**: I = Is * (e^(V/nVt) - 1)

Transistors (BJT)

- I_E = I_B + I_C
- Beta (Current Gain) = I_C / I_B
- Alpha = I_C / I_E

Op-Amps

- **Inverting Amplifier**: V_out = -(Rf/Rin) * V_in
- **Non-Inverting Amplifier**: V_out = (1 + Rf/Rin) * V_in