SOLIDS AND SEMICONDUCTOR DEVICES

1. Intrinsic semiconductors, $n_i = n_e = n_h$

2. Doped semiconductors, $n_i^2 = n_e n_h$

3. Conductivity, $\sigma = e(n_e \mu_h + n_h \mu_h)$

4. Current gains, $\alpha = \frac{\beta}{1+\beta}, \beta = \frac{\alpha}{1-\alpha}$

5. Alternating current power gain = $\frac{\text{output power}}{\text{input power}}$