

**EECS 210 Section 2 – Lecture Summaries**  
**Lecture 30, Friday, March 23, 2001**

- Complex power is  $\hat{\mathbf{P}} = \frac{1}{2} \hat{\mathbf{V}}\hat{\mathbf{I}}^*$  in Volt-Amperes (VA)
  - Complex power is conserved around a circuit
- Average power is  $P_{AV,i} = \frac{1}{2} \text{Re}\{\hat{\mathbf{V}}\hat{\mathbf{I}}^*\}$  in Watts (W)
  - Average power is conserved around a circuit
- Reactive power is  $\mathbf{Q} = \frac{1}{2} \text{Im}\{\hat{\mathbf{V}}\hat{\mathbf{I}}^*\}$  in Volt-Amperes Reactive (VAR)
  - ✓ Reactive power is conserved around a circuit
- Apparent power is  $P_{\text{apparent}} = |\hat{\mathbf{P}}|$  in Volt-Amperes (VA)
  - Apparent power is not conserved around a circuit
- For fixed source impedance, maximum power transfer occurs when  $\mathbf{Z}_{\text{load}} = \mathbf{Z}_{\text{source}}^*$