

Principles of AC Circuits (Ohm's Law - Current, Voltage, Impedance)

Ideal Transformer

Turns Ratio, Voltage Ratio, Current Ratio, Power Ratio

Complex Impedances (Capacitive & Inductance Reactance)

Complex Power

AC RMS I^2R Loss

AC RCL Power Factor = $\frac{1}{2} V_p I_p \cos \phi$

Transient RC & RL Circuits

Calculate time constants and transient voltages for RC and RL circuits

Sketch voltage curves for transient RC and RL voltages

RCL Passive Filters

Sketch V_{out} / V_{in} Curves

Calculate cut-off frequencies ($\frac{1}{2}$ power point and voltage ratio)