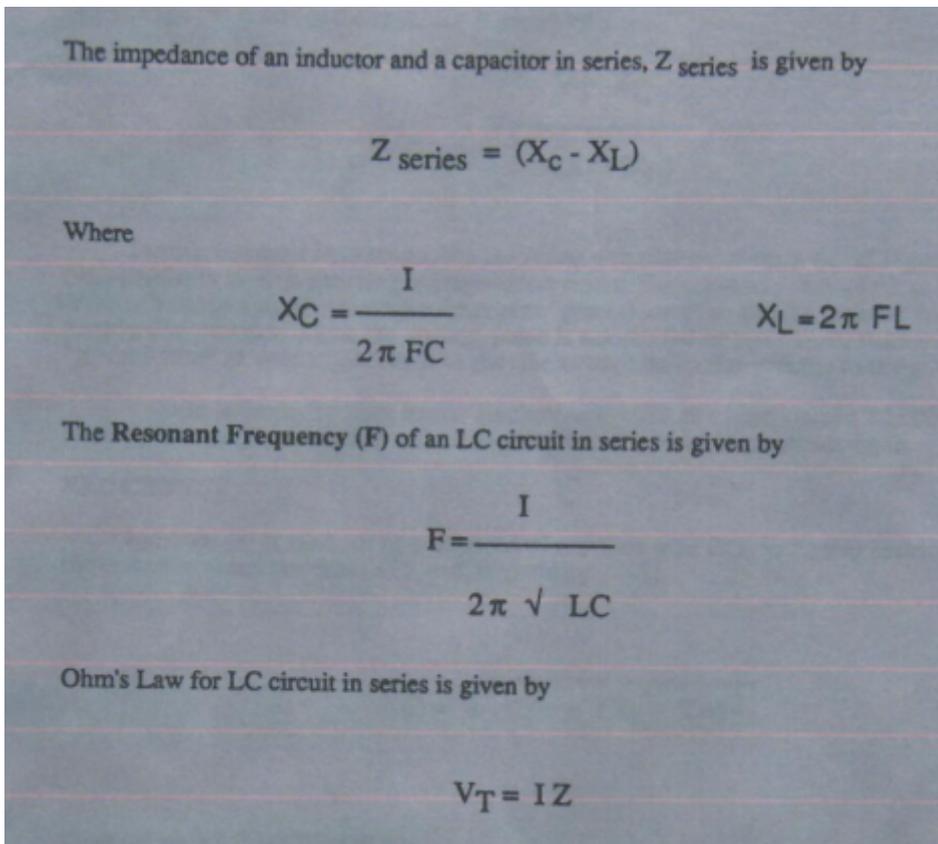


LC VOLTAGE

The impedance of an inductor and a capacitor in series, Z_{series} , is given by



$$Z_{\text{series}} = (X_C - X_L)$$

Where

$$X_C = 1 / 2(\pi)FC$$

The **Resonant Frequency (F)** of an LC circuit in series is given by

The Resonant Frequency (F) of an LC circuit in series is given by

$$F = \frac{1}{2\pi \sqrt{LC}}$$

Ohm's Law for an LC circuit in series is given by

$$V_t = IZ$$

LC VOLTAGE

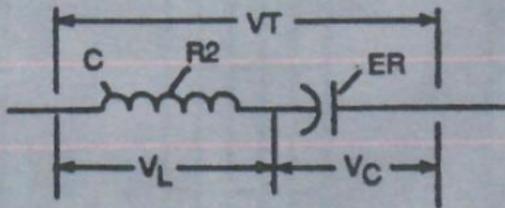


FIGURE 1 - 2. LC CIRCUIT SCHEMATIC

The voltage across the **inductor** (c) or

capacitor (ER of t) is greater than the applied voltage (h).

At frequency close to resonance, the voltage across the individual components is higher than the **applied voltage** (h), and, at resonant frequency, the voltage VT across both the inductor and the capacitor are theoretically infinite.

However, physical constraints of components and circuit interaction prevent the voltage from reaching infinity.

The **voltage** (VL) across the **inductor** (C) is given by the equation:

The voltage (VL) across the inductor (C) is given by the equation

$$V_L = \frac{V_T X_L}{(X_L - X_C)}$$

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