

R-C-L Components

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Overview:

This is all about finding the electrical properties of given configurations. In general,

- **Resistance:** Assume $V \xrightarrow{\text{Def.}} \vec{E} \xrightarrow{\text{Ohm}} \vec{J} \xrightarrow{\text{Def.}} I$. Finally $R = \frac{V}{I}$
- **Capacitance:** Assume $Q \xrightarrow{\text{Gauss}} \vec{E} \xrightarrow{\text{Def.}} V$. Finally $C = \frac{Q}{V}$
- **Inductance:** Assume $I \xrightarrow{\text{Ampere}} \vec{B} \xrightarrow{\text{Faraday}} \epsilon$. Finally $L = \frac{\epsilon}{\frac{dI}{dt}}$

1 Resistance

By definition, resistance is

- 1.1 Ohm's Law**
- 1.2 Addition of Resistance**
- 1.3 Conductivity & Microscopic Form of Ohm's Law**
- 1.4 Finding Resistance from Configurations**

2 Capacitance

- 2.1 Potential & Capacitance**
- 2.2 Addition of Capacitance**
- 2.3 Finding Capacitance from Configurations**

3 Inductance

3.1 Self-Inducance & Mutual Inductance

3.2 Addition of Inductance

3.3 Finding Inductance from Configurations

— The End —