

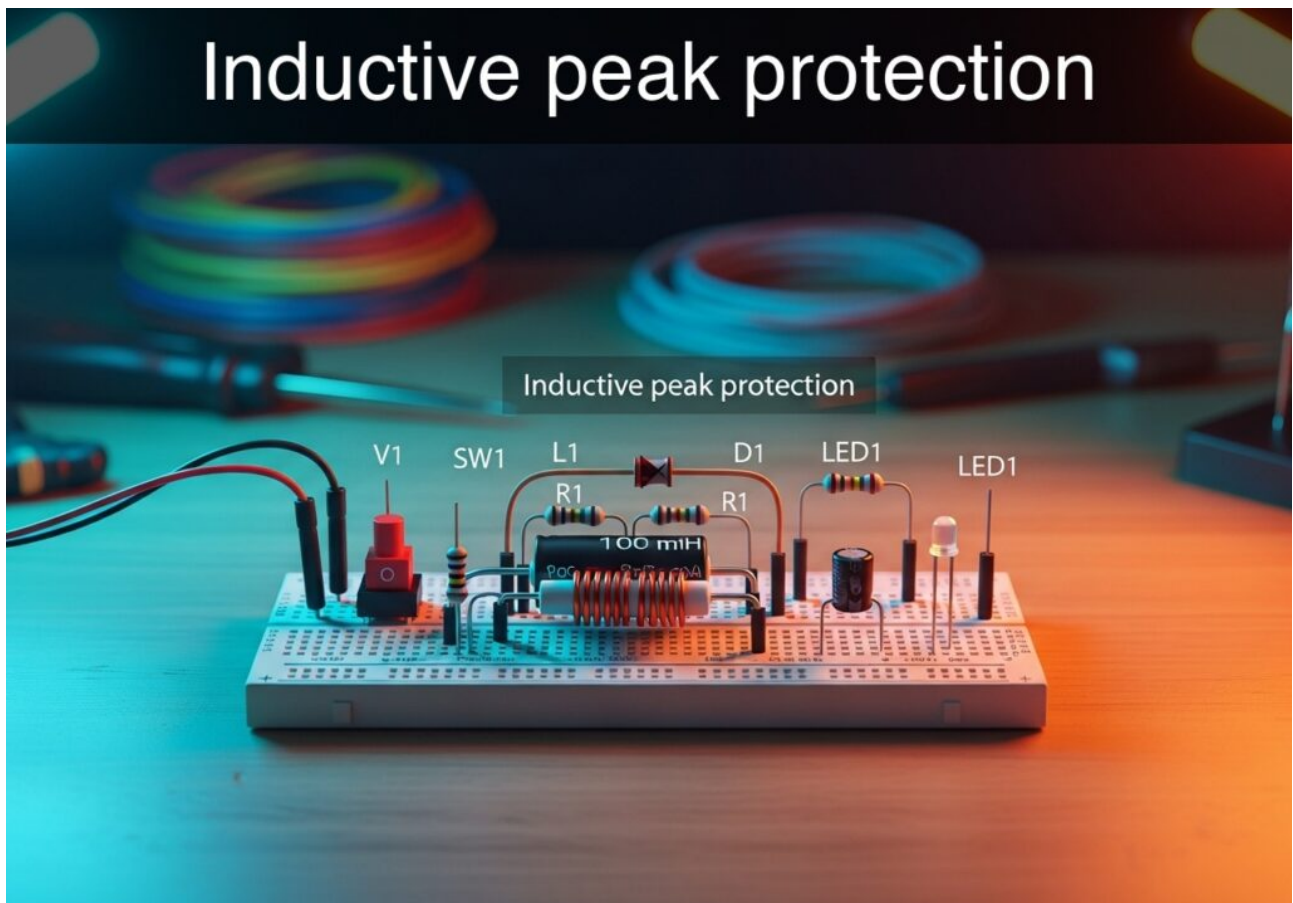
Practical case: Resonance in LC tank circuit

Level: Medium | Analyze the energy exchange and determine the resonant frequency of an AC-driven LC tank.

Practical case: Boost converter storage

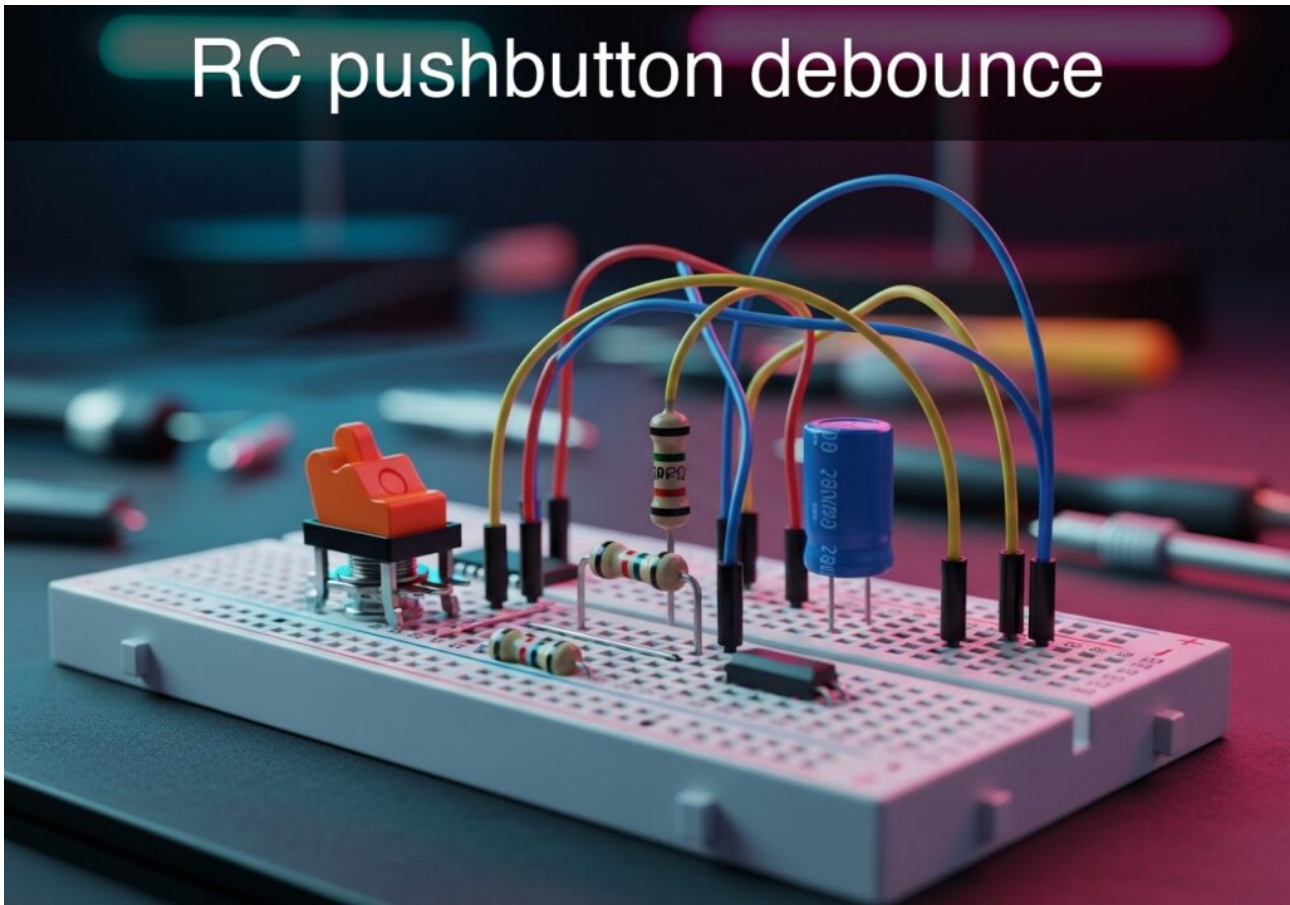
Level: Medium | Understand magnetic energy storage to boost voltage.

Practical case: Inductive peak protection



Level: Medium | Objective: Analyze the transient voltage generated when disconnecting an inductor and mitigate it using a flyback diode.

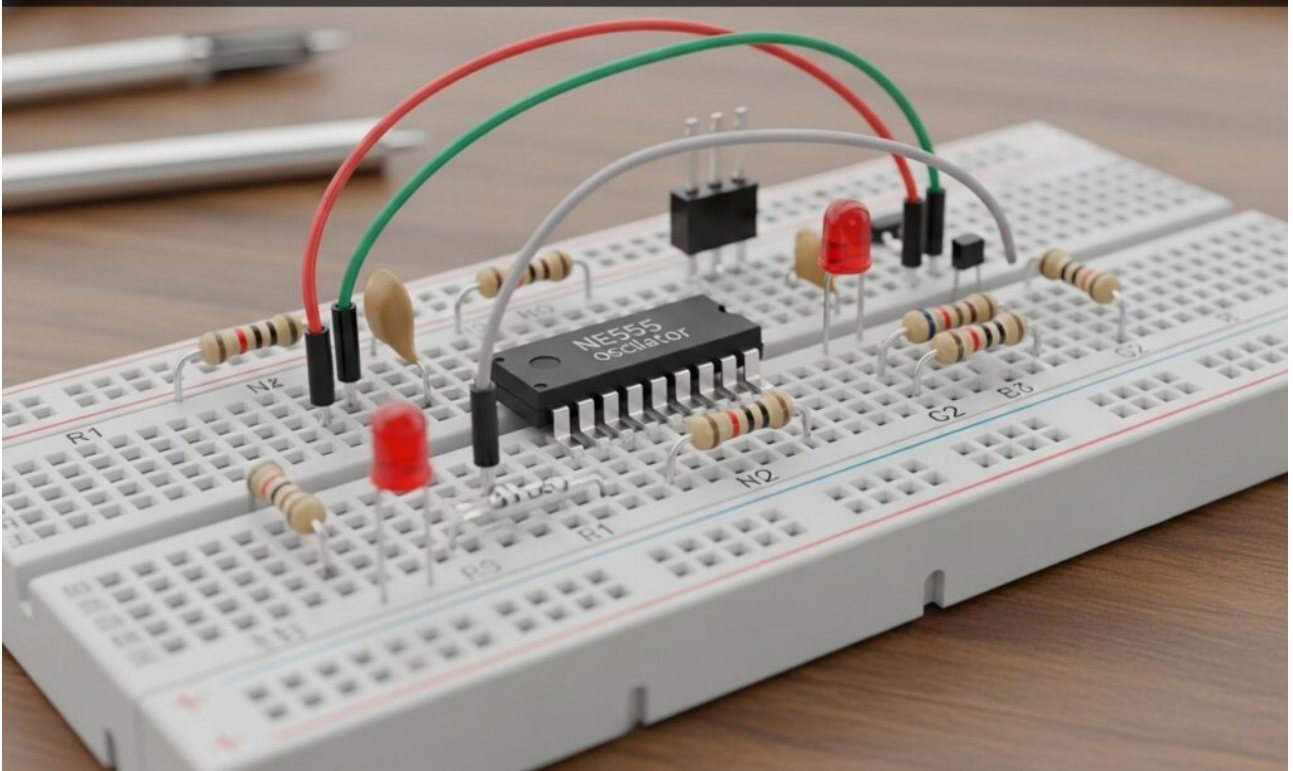
Practical case: RC pushbutton debounce



Level: Medium | Use a capacitor to mitigate mechanical noise when actuating a physical switch.

Practical case: Astable oscillator with NE555

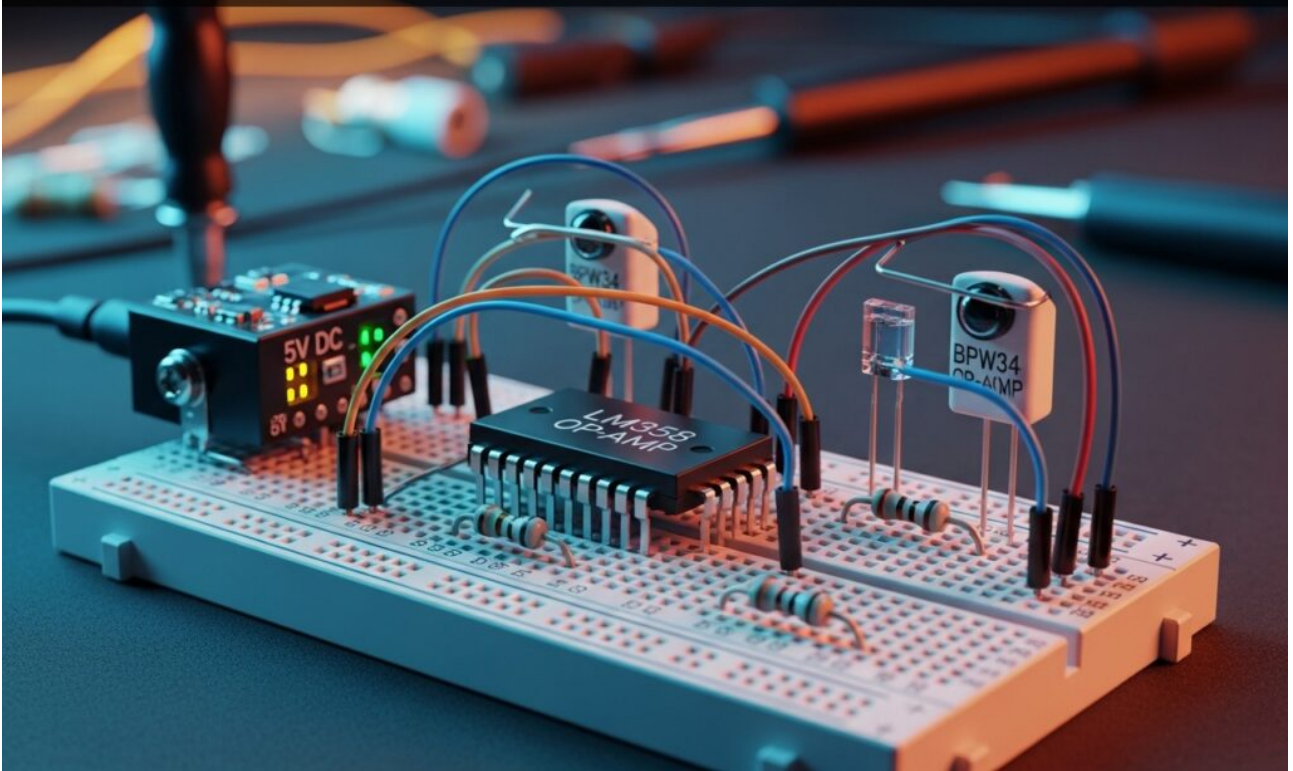
Astable oscillator with NE555



Level: Medium - Configure a capacitor in an NE555 circuit to control the oscillation frequency.

Practical case: Optical sensor for a solar tracker

Optical sensor for a solar tracker



Level: Medium - Design a circuit with two photodiodes in a differential configuration to detect the direction of the highest intensity light source.