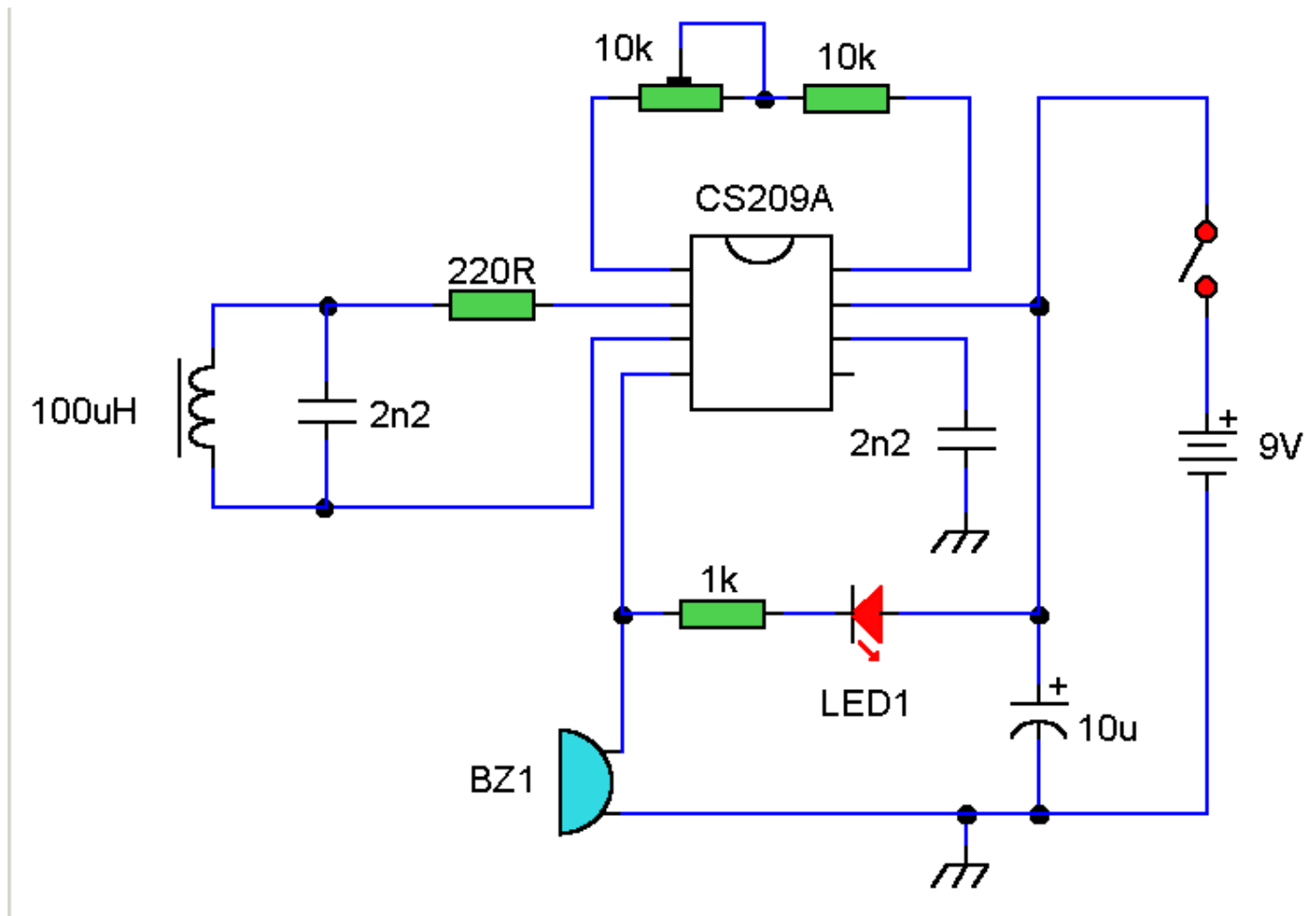


Metal Detector

Description:

A single chip metal detector with a range of a few inches. This is useful for detecting nails or screws in walls and floors, or for locating buried mains cable.



Notes:

The heart of the circuit is a single IC the CS209A made by Cherry Semiconductor. The detector, is a single 100uH choke. The IC has an integral oscillator the choke forms part of an external LC circuit, its inductance being altered by the proximity of metal objects. It is the change in oscillation that is amplified and demodulated. Led 1 will light and the buzzer will sound when the choke change inductance. Set up is easy, VR1 is adjusted with the choke away from any metal source so that the LED lights and buzzer sounds. The control is backed off so that the LED goes out and buzzer stops. Now when the choke comes into contact with any metal object that alters its inductance, LED 1 and the buzzer will activate.

Since I first wrote this article Maplin no longer sell the CS209A. However the same part CS209AYN may be bought from ON semiconductors, direct link below. Note that the package 626-05 is the 8 pin DIN type that is required.

[CS209AYN8](#)