

A resistor is an electronic component that slows down the flow of electricity.<sup>1</sup> It's like a tiny speed bump for electrons!

Resistors are used in many different ways in electronics.<sup>2</sup> They can be used to control the brightness of an LED, adjust the volume of an amplifier, or even measure temperature.

Resistors are usually marked with colored bands.<sup>3</sup> These bands tell you the value of the resistor.<sup>4</sup> The most common color code is the four-band code. Here's how to read it:

- **First band:** The first digit of the resistance value.
- **Second band:** The second digit of the resistance value.
- **Third band:** The number of zeros to follow the first two digits.
- **Fourth band:** The tolerance, or how accurate the resistor is.<sup>5</sup>

For example, a resistor with the bands brown, black, red, and gold would have a value of 10,000 ohms (10k ohms) with a tolerance of  $\pm 5\%$ .

Resistors are an essential component in many electronic circuits.<sup>6</sup> They are used to control the flow of electricity and make sure that components don't get damaged.

[How do resistors work? \(Animated\) | Basic Electronics](#)

[Resistor Wiki](#)

[Resistor Color Codes: What Do the Color Bands Mean?](#)

[Resistor Calculator](#)