

## 27.2: Introduction

An electric circuit provides a complete path through which electrons may flow. There are two basic types of circuits: series and parallel. Devices in a series circuit are connected in one continuous loop while devices within a parallel circuit are connected in multiple loops. A short circuit is a path of least resistance in the electrical circuit which bypasses the devices that the circuit is intended to operate. When there is a short circuit, wiring may become hot. Circuit diagrams show how the different types of circuits are connected together. The lines in a circuit diagram represent wires.

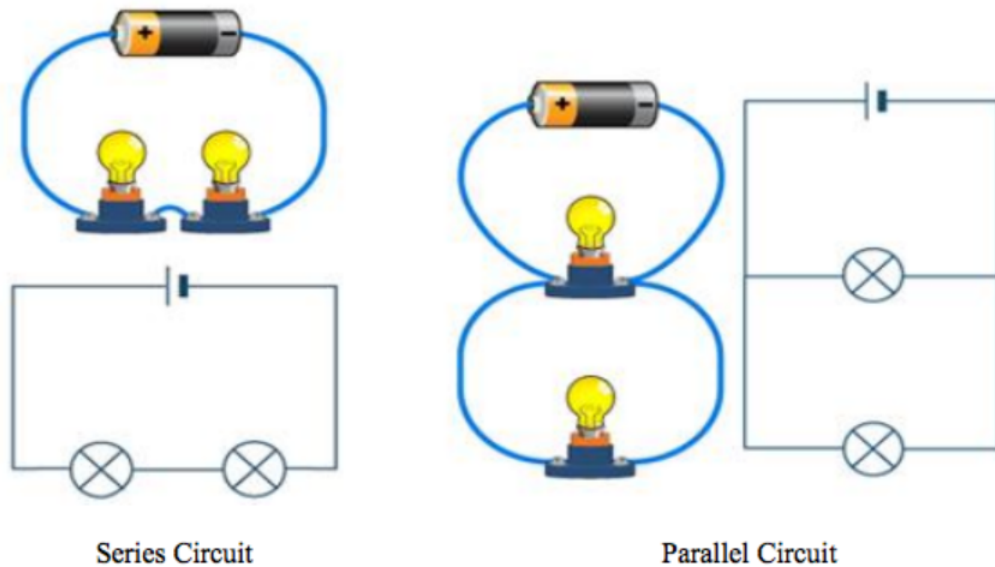


Figure 27.2.1: Series and Parallel Circuit. (sciencewithpizzi.weebly.com/25-parallel-circuits)

The resistance is added differently in each type of circuit because of how current flows across each device in series versus parallel circuits.

Table 27.2.1: Series and Parallel Resistance

Series Circuit Resistance	Parallel Circuit Resistance
$R = R_1 + R_2 + R_3$	$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$

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