

Investigation of the current-voltage (I-V) characteristics of a component

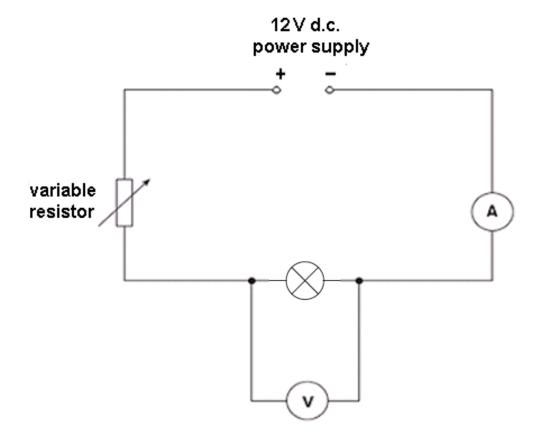
Introduction

The voltage across and the current through a component can be measured and the results plotted on a graph to show the *I-V* characteristic of the component.

Apparatus

12V filament lamp voltmeter ±0.01 V ammeter ±0.01 A connecting leads 12V d.c. power supply variable resistor

Diagram of Apparatus





Method

- 1. Connect the circuit as shown in the diagram.
- 2. Adjust the variable resistor until the voltmeter reads 1 V.
- 3. Record the readings of voltage and current.
- 4. Adjust the variable resistor to increase the voltmeter reading to 2 V.
- 5. Record the readings of voltage and current.
- 6. Repeat steps 4 to 5, increasing the voltage by 1 V each time, until the voltmeter reads 12 V.

Analysis

1. Plot a graph of current (*y*-axis) vs voltage (*x*-axis).