

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

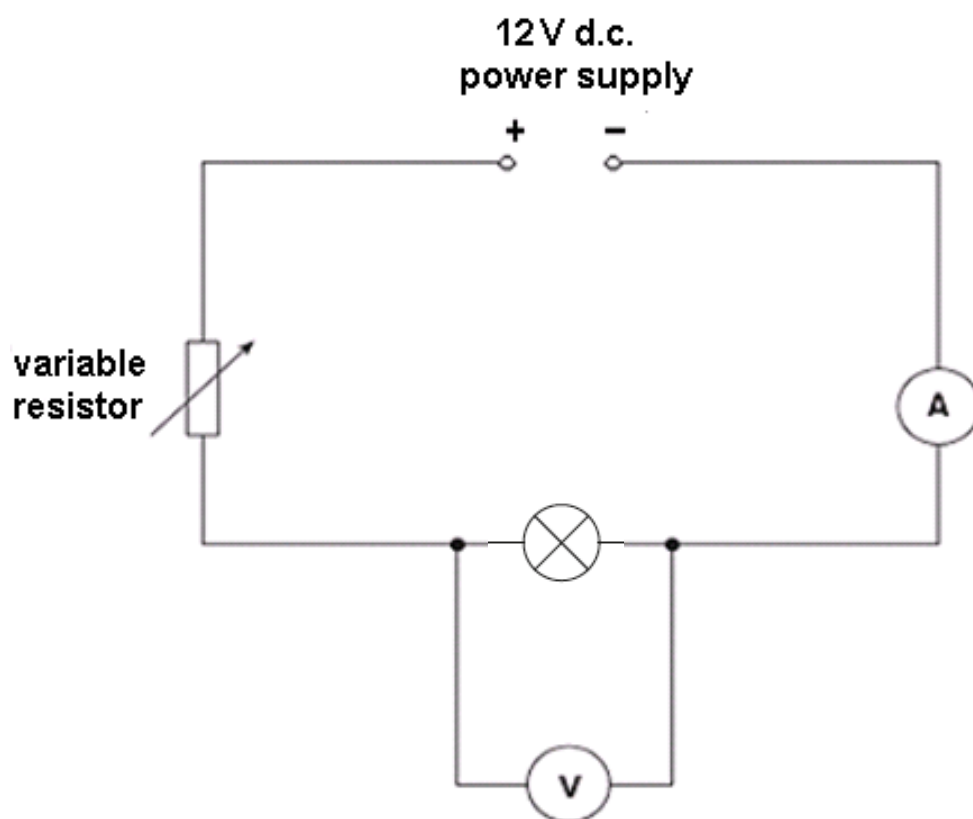
Introduction

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).