

Electrical resistance

Ohm's law states that the current **I** flowing in the circuit is proportional to the applied potential difference **V**. The constant of proportionality is defined as the resistance **R**. If **V** and **I** are measured in volts and amperes, respectively, **R** is measured in ohms. Microscopically resistance is associated with the impedance to flow of charge carries offered by the material. For example, in metallic conductor the charge carries are electrons moving in a polycrystalline material in which their journey is impeded by collisions with imperfections in the local crystal lattice, such as impurity atoms, vacancies, and dislocations. In these collisions the carries lose energy to the crystal lattice, and thus Joule heat is liberated in the conductor, which rises in temperature.

with the impedance to flow - з опором потоку

constant - коефіцієнт

is defined - визначається

respectively - відповідно

to the applied – прикладеної

is associated- пов'язаний

impurity atoms - домішкові атоми

vacancies – дірки

1. струм, який протікає в колі;
2. вимірюються у Вольтах і Амперах;
3. асоціюється з опором потоку носіїв заряду;
4. металічний провідник;
5. полікристалічний матеріал;
6. носії віддають енергію кристалічній решітці;
7. тепло виділяється в провідник;
8. температура якого зростає.

1. Answer the questions:

1. What does the Ohm's law state?
2. How to define the constant of proportionality in the Ohm's law?
3. Resistance is associated with the impedance to flow of charge carries, is not it?