

Temperature Coefficient of Resistivity

Resistance of any material varies with temperature.. and the relation between them can find in this law :

$$R_T = R_0 [1 + \alpha(T - T_0)]$$

where R_T and R_0 are the values of the resistance at temperature T and T_0 , respectively. T_0 is often taken to be 0°C . α is the temperature coefficient of resistivity. Pure metals have a small, positive value of α , which means that their resistance increases with increasing temperature. From temperature measurements of R you can find α . To do this you will plot resistance values versus T , and approximate the results with a straight line. The intercept of this line with the resistance axis is R_0 , and the slope divided by R is the values of α .

The figure shown below described the relation between resistances of any material with temperature.

