Answer on Question #45852, Physics, Electric Circuits

A coil of wire has a resistance of 25.0Ω at 20oC and a resistance of 25.1Ω at 35oC What is its temperature coefficient of of resistance?

4.5×10−4/oC

$3.5×10−3/oC

2.6×10−4/oC

4.0×10−5/oC

$$R(T) = R_0(\alpha t + 1)$$

Put in to this equation known dependences of the R(t):

$$\begin{cases} 25\ Om = R_0(\alpha * 20C^o + 1) \\ 25.1\ Om = R_0(\alpha * 35C^o + 1) \end{cases}$$

$$\frac{25.1}{25} = \frac{\alpha * 35C^o + 1}{\alpha * 20C^o + 1}$$

$$\alpha = 2.68 * 10^{-4}\ 1/C^o$$