

1) Se conocen tres puntos de la característica de un termistor NTC:

- P1 (5°C, 25000 Ohm)
- P2 (25°C, 10000 Ohm)
- P3 (45°C, 4000 Ohm)

a) Determinar el modelo matemático del termistor con 2 coeficientes.

$$R_T = R_0 e^{\beta \left(\frac{1}{T} - \frac{1}{T_0} \right)}$$

$$\left. \begin{aligned} R_{T_1} &= R_0 e^{\beta \left(\frac{1}{T_1} - \frac{1}{T_0} \right)} \\ R_{T_2} &= R_0 e^{\beta \left(\frac{1}{T_2} - \frac{1}{T_0} \right)} \end{aligned} \right\}$$

$$\left. \begin{aligned} 25000 &= R_0 e^{\beta \left(\frac{1}{273+5} - \frac{1}{298} \right)} \\ 10000 &= R_0 e^{\beta \left(\frac{1}{273+25} - \frac{1}{298} \right)} \end{aligned} \right\}$$

$$\left. \begin{aligned} 25000 &= R_0 e^{\beta \left(\frac{1}{273+5} - \frac{1}{298} \right)} \\ 10000 &= R_0 \end{aligned} \right\}$$

$$\left. \begin{aligned} \beta &= \frac{\ln \left(\frac{25000}{10000} \right)}{\frac{1}{278} - \frac{1}{298}} \\ 10000 &= R_0 \end{aligned} \right\}$$

$$\left. \begin{aligned} \beta &= 3795 \\ R_0 &= 10000 \end{aligned} \right\}$$