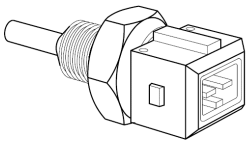
Silicon Temperature Sensors

KT 100 KTY 10-x
KT 110 KTY 11-x
KT 130 KTY 13-x
KT 210 KTY 21-x
KT 230 KTY 23-x
KTY 16-6 KTY 19-6



KTY 19-6

Features

- Temperature dependent resistor with positive temperature coefficier
- Temperature range – 50 °C to + 150 °C (– 60 F to 300 F)
- Available in SMD or leaded or customized packages
- Linear output
- Excellent longterm stability
- Polarity independent due to symmetrical construction
- Fast response time
- Resistance tolerances (R_{25}) of ± 3% or ± 1%

General Technical Data: KT- and KTY-Series Temperature Sensors

These temperature sensors are designed for the measurement, control and regulation of air, gases and liquids within the temperature range of – 50 °C to + 150 °C. The temperature sensing element is an n-conducting silicon crystal in planar technology. The gentle curvature of the characteristic, $R_T = f(T_A)$, is described as a regression parabola in the following expressions.

The resistance of the sensor can be calculated for various temperatures from the following second order equation, valid over the temperature range – 30 °C to + 130 °C.

$$R_T = R_{25} \times (1 + \alpha \times \Delta T_A + \beta \times \Delta T_A^2) = f(T_A)$$

with: $\alpha = 7.88\ 10^{-3}\ K^{-1}$; $\beta = 1.937\ 10^{-5}\ K^{-2}$

Sensor Resistance $R_T = k_T \times R_{25} = f(T_A)$

I_B = 1 mA; Example: R_{25} = 2000 Ω