



Accurate, reliable temperature measurement throughout the car

KTY silicon temperature sensors

Combining accuracy, reliability and stability, NXP's silicon temperature sensors are the ideal choice for automotive applications from climate control to engine monitoring. An extensive selection of operating ranges, packages, resistances and tolerances ensures designers can find the perfect solution to their temperature monitoring needs.

KEY FEATURES

- ▶ High accuracy and reliability
- ▶ Long-term stability
- ▶ Positive temperature coefficient – fail-safe behavior
- ▶ Virtually linear characteristics

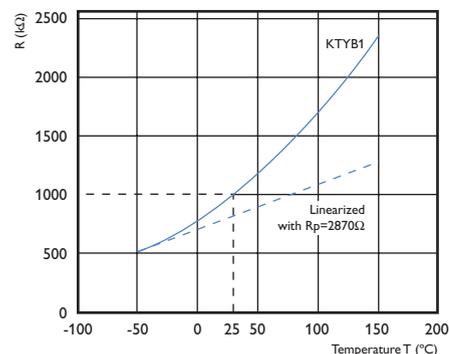
KEY APPLICATIONS

- ▶ Oil temperature
- ▶ Oil module
- ▶ Transmission
- ▶ Engine cooling
- ▶ Climate control
- ▶ Overheating protection
- ▶ Heating control systems

From engine management to climate control, systems throughout today's vehicles rely on accurate and reliable temperature measurement to improve safety, performance and comfort. And that's precisely what NXP KTY silicon temperature sensors deliver. Thanks to a number of intrinsic characteristics, they boast better performance and operational advantages over traditional passive-based techniques using thermistors.

KTY sensors display a virtually linear temperature coefficient over their entire temperature range, ensuring highly accurate measurements. A linearization resistor can be easily added where further linearization is required. As the temperature coefficient is positive, the sensors exhibit fail-safe operation when a system overheats. Furthermore silicon is inherently stable, so KTY sensors are extremely reliable and have very long operational lifetimes.

RT curve of KTY81, linearized with parallel resistor



AN UNBEATABLE RANGE

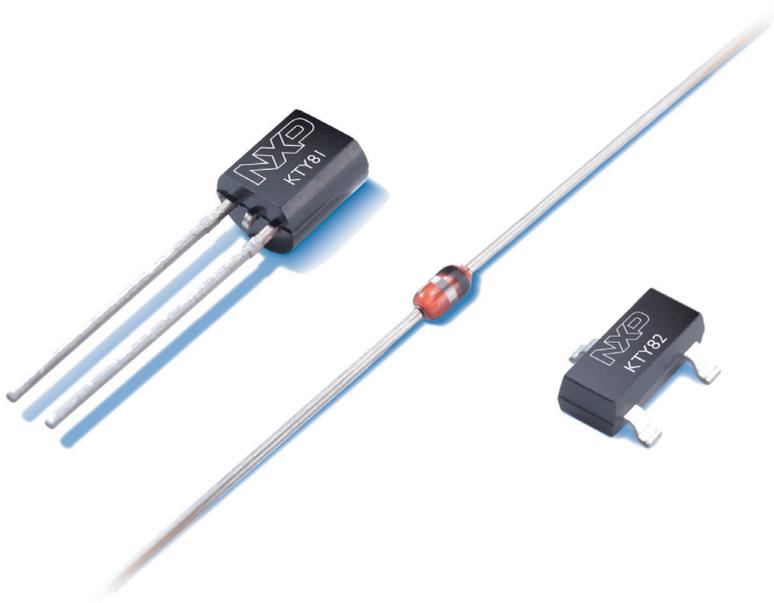
NXP has one of the widest ranges of silicon temperature sensors on the market, with families specified according to package, nominal resistance, tolerance and operating range. The KTY81 and KTY82 families use a twin-sensor technology for polarity-independent sensing. Delivered in a hermetically sealed glass package, the KTY83 and KTY84 series are designed for use in fluids such as oil or water. The KTY84 range offers operating temperatures up to 300°C so is ideal for use in exhaust and heating systems.

PRODUCT OVERVIEW

| Family type | Package | R ₂₅ (Ohm) | Available tolerances | T _{oper} Range (°C) |
|-------------|---------|--------------------------|-----------------------|---------------------------------|
| KTY81-1 | SOD70 | 1000 | +/- 5% down to +/- 1% | -55 to 150 |
| KTY81-2 | SOD70 | 2000 | +/- 5% down to +/- 1% | -55 to 150 |
| KTY82-1 | SOT23 | 1000 | +/- 5% down to +/- 1% | -55 to 150 |
| KTY82-2 | SOT23 | 2000 | +/- 5% down to +/- 1% | -55 to 150 |
| KTY83-1* | SOD68 | 1000 | +/- 5% down to +/- 1% | -55 to 175 |
| KTY84-1* | SOD68 | 1000 (R ₁₀₀) | +/- 5% down to +/- 3% | -40 to 300 |

Customized tolerances / selections are available on request

* not for automotive applications



KTY sensors are supplied in a choice of leaded (glass or plastic) and SMD (plastic) packages.