



NTC thermistors

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SMD versions for precise temperature measurement

TDK Corporation presents two new series of narrowly toleranced EPCOS NTC thermistors in EIA 0402 and 0603 SMD case sizes. The components feature a rated resistance of 10 k Ω in tolerance classes $\pm 1\%$, $\pm 3\%$ and $\pm 5\%$. These narrow tolerances were made possible thanks to a new production technology and a rugged glass passivation, which also ensures high reliability and degradation stability. The slope of the characteristic curve

(B value: 3455 K) has a narrow tolerance of $\pm 1\%$ across the board. Therefore, and thanks to the short response time, the new NTC thermistors enable fast and precise temperature measurement across a wide range.

The new SMD NTC thermistors are offered in two series: the automotive series, which is qualified to AEC-Q200 and is suitable for applications up to +150 °C, and the standard series for applications up to +125 °C. The new NTC thermistors are used in automotive electronics, such as in electronic control units and air-conditioning systems, as well as for the temperature monitoring of batteries and charging systems. The temperature management of high-performance LEDs, which are increasingly replacing conventional halogen and xenon headlights, is also a fast-growing application area. There are also diverse applications in communications equipment. These include the charge monitoring of batteries in mobile devices and the temperature monitoring of LCDs, amplifiers, hard disks and digital cameras.

Glossary

- NTC thermistor: Ceramic component whose resistance drops with rising temperature

Main applications

- Temperature monitoring in automotive electronics, information and communication technology, and consumer electronics

Main features and benefits

- Miniaturized SMD case sizes EIA 0402 and 0603
- Low tolerances of $\pm 1\%$

Automotive series

Type	EIA case size / dimensions [mm]	R ₂₅ [k Ω]	$\Delta R/R_{25}$ [%]	Temperature range [°C]
B57232V5103+360 ¹	0402 / 1.0 x 0.5 x 0.6	10	± 1 ; ± 3 ; ± 5	-40 to +150
B57332V5103+360 ¹	0603 / 1.6 x 0.8 x 0.9	10	± 1 ; ± 3 ; ± 5	-40 to +150

Standard series

Type	EIA case size / dimensions [mm]	R ₂₅ [k Ω]	$\Delta R/R_{25}$ [%]	Temperature range [°C]
B57230V2103+260 ¹	0402 / 1.0 x 0.5 x 0.6	10	± 1 ; ± 3 ; ± 5	-40 to +125
B57330V2103+260 ¹	0603 / 1.6 x 0.8 x 0.9	10	± 1 ; ± 3 ; ± 5	-40 to +125

¹ "+" is placeholder for resistance tolerance: F = $\pm 1\%$, H = $\pm 3\%$, J = $\pm 5\%$