

NTC Thermistor for High Temperature Applications



FEATURES

- Advanced NTC technology
- Wide temperature range from - 40 °C to + 900 °C
- Long lifetime stability at 900 °C
- Highly resistant to thermal shocks
- Small body diameter of max. 2 mm
- High sensitivity
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

| QUICK REFERENCE DATA | | |
|---|------------------------|-----------------|
| PARAMETER | VALUE | UNIT |
| Resistance value at 25 °C | 960K | Ω |
| Resistance value at 750 °C | 69.5 | Ω |
| B _{25/85} -value | 3535 | K |
| Tolerance on B _{25/85} -value | ± 2 | % |
| Tolerance on R ₇₅₀ -value | ± 3 | % |
| Operating temperature range (short term) | - 40 to + 900 (+ 1000) | °C |
| Response time (63.2 %) 25 °C to 750 °C still air (for info) | 10 | s |
| Dissipation factor δ in still air (for info) | 1 | mW |
| Maximum power dissipation | 50 | mW |
| Min. dielectric withstanding voltage between terminals and glass body | 100 | V _{AC} |
| Insulation resistance at 100 V _{DC} | > 10 | MΩ |
| Weight | 30 | mg |

ENVIRONMENTAL CONDITIONS

Platinum lead wires enable the usage in applications up to 1000 °C for short periods and 900 °C for longer periods of time. The thermistor should not be placed in a reducing atmosphere or be subjected to corrosive substances (f.e. phosphates) which could affect the functionality or the lifetime of the thermistor. Always maintain a sufficient partial oxygen pressure to avoid abnormal electrical drift or a reduced life time.

DESIGN-IN SUPPORT

R(T) tables spreadsheet available on request at: nlr@vishay.com

APPLICATIONS

High Temperature sensing, control and compensation. f.e. exhaust gas temperature sensing thermistor in automotive applications, oven sensor elements in industrial and commercial applications, heating systems and industrial systems using platinum sensors or thermo-couples

MOUNTING

The thermistors are suitable for all standard assembly processes like crimping, brazing and welding (laser, ultrasonic or resistance). The parameters of the assembly process should be chosen in accordance with the lead-wire material (platinum) and validated in application.

The mounting process should be in compliance with the following guidelines and recommendations:

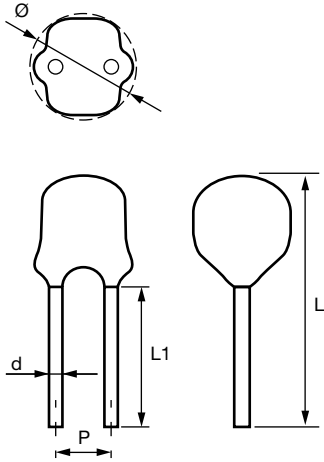
- Peeling forces on the leads should be reduced to a minimum and should never exceed 3 N
- Avoid large temperature gradients between the welding region and the sensor
- After complete assembly it is recommended to fix the leads in the welding region with a strain relief

If using a ceramic adhesive/potting or filling material avoid phosphate-based binders. Always follow the supplier's curing specifications fully including bringing the part up to operating temperature for a short time to ensure good moisture resistance and electrical performance of the total sensor.

| ELECTRICAL DATA AND ORDERING INFORMATION | | | | | | |
|--|-----------------------------|-----------------------------|------------------------------|-------------------------------|--------------------------------|--|
| VISHAY SAP ORDERING NUMBER | R ₂₅ -VALUE (kΩ) | R ₇₅₀ -VALUE (Ω) | R ₇₅₀ -TOL. (± %) | B _{25/85} -VALUE (K) | B _{25/85} -TOL. (± %) | DESCRIPTION |
| NTCV101E4964HMB0 | 960 | 69.5 | 3 | 3535 | 2 | NTC Very High Temp 960 K 3 % 3535 K 2 mm |

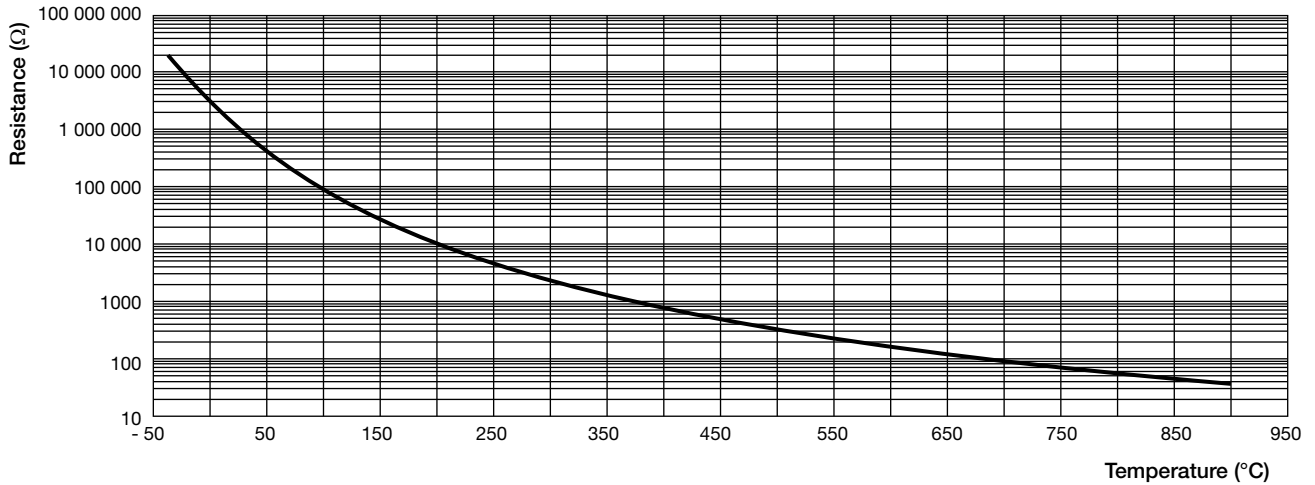


DIMENSIONS in millimeters



| DIMENSIONS in millimeters | |
|---------------------------|---------|
| PARAMETER | VALUE |
| Ø D max. | 2 |
| d | 0.25 |
| L1 min. | 2 |
| L | 4.4 ± 1 |
| p | 1 |

R vs. T (typical)





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