High Temperature Sensor Pt200 HT1000°C Ø2.6x8 ctbs

Technical data

Resistance at 0°C	200 Ω
Temperature coefficient (0 °C up to +100 °C)	3.85 · 10^{-3} K^{-1}
Tolerance classes to DIN EN 60751	F 0,3 (up to +400 °C) F 0,6 (up to +600 °C)
Operating temperature range	-50 °C up to +1000°C
Measurement current (DC) at 25 °C	1.0 mA
Insulation resistance	> 10 MΩ
Self-heating at 0 °C	< 0.2 K/mW
Thermal response time Flowing air	 $T_{0.5} \leq 5$ s, $T_{0.9} \leq 9$ s
Thermal shock resistance	280 °C
Resistance value at 0°C (class F 0,3) at 100°C (class F 0.3)	 200.00 Ω ± 0.24 Ω 277.01 Ω ± 0.61 Ω (each resistance value plus lead resistance)

Leads		
Material	HT-Pt	Kanthal
Ø d [mm]	0.2	0.25
Resistivity at 20°C	10,6 µΩ · cm	139 µΩ · cm

(Sources: Product information of the lead manufacturers)

Operating conditions

Unprotected application only in dry environments without any contamination. Any compressive and tensile stresses of the leads have to be avoided.

Remark

For high temperature applications the sensor element has to be protected applicable against contaminations of substances (heavy metals, Si, P, Cl, Na, Ka etc.) which could destroy for example the pattern structure caused by chemical or electro-chemical reactions.

Technology

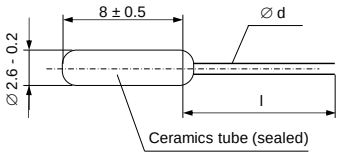
Chip - advanced thin-film-technology (ceramic carrier with a structured platinum layer, covered with a passivating layer), assembled in a sealed ceramic protective tube

Conformity

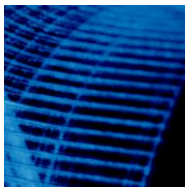
2011/65/EU Restriction of the use of Hazardous Substances Directive (RoHS)

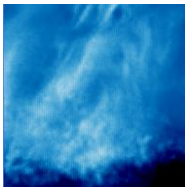
Dimensions [mm]

Schematic diagram



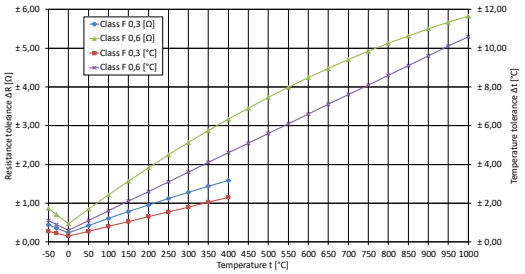
Ø d… depending on lead material (please see left table);
Lead material: Kanthal l ≥ 10 mm / HT-Pt l = 3mm





Functional performance (Sensor element)

according to DIN EN 60751 (up to 600°C)



Picture 1: Resistance and temperature tolerances of HTS Pt200 HT1000°C Ø2.6x8

Temperature range from -50 °C up to 0 °C:

$R_t = R_o \cdot (1 + A \cdot t + B \cdot t^2 + C \cdot (t - 100\ °C) \cdot t^3)$

Temperature range from 0 °C up to +850 °C:

$R_t = R_o \cdot (1 + A \cdot t + B \cdot t^2)$

Tolerance classes:

Class F 0,3: $\Delta t = \pm (0.3 + 0.005 \cdot |t|)$ (up to 400°C)

Class F 0,6: $\Delta t = \pm 2 \cdot (0.3 + 0.005 \cdot |t|)$ (up to 600°C)

whereby:

R_t … Resistance [Ω] at temperature t

R_o … Resistance [Ω] at 0 °C

t … Temperature [°C]

Δt …Permissible temperature deviation at t [°C]

A = 3.9083 · 10^{-3} $°C^{-1}$

B = - 5.775 · 10^{-7} $°C^{-2}$

C = - 4.183 · 10^{-12} $°C^{-4}$

Fields of application

- Automotive electronics
- Industrial electronics
- Building automation
- Energy and environmental engineering
- Safety and medical engineering

Ordering example

Please use the following code/article description:

HTS Pt200 HT1000°C, Ceramics tube Ø2.6x8 mm sealed, Kanthal-Leads Ø0,25 mm, variant l=10 mm

(Other wire lengths are available on request.)

Made in Germany

Revision 22/02

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Errors excepted. Subject to alterations for this information and technological changes.

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