

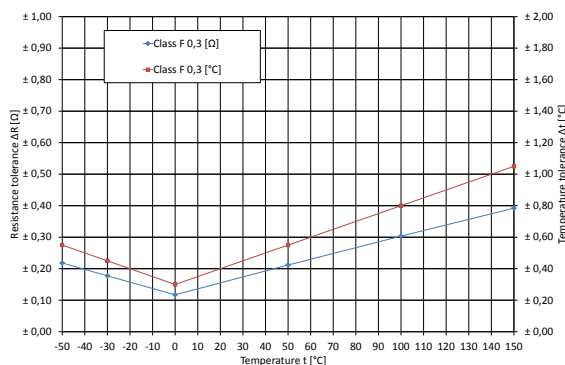
Technical Data

| | |
|--|--|
| Resistance at 0°C (R ₀) | 100 Ω |
| Temperature coefficient (0°C up to +100°C) | 3.85 · 10 ⁻³ K ⁻¹ |
| Tolerance class according to DIN EN 60751 | F 0,3 (-50°C - +150°C) |
| Operating temperature range | -50 °C up to +150 °C |
| Measurement current (DC) at 25 °C | 1 mA |
| Maximal permissible peak current (DC) at 25 °C | 3 mA |
| Insulation resistance | > 10 MΩ |
| Self-heating at 0 °C | < 0.4 K / mW |
| Thermal response time | |
| Flowing water (v = 0.2 m/s) | T _{0,5} = 0.2 s, T _{0,9} = 0.5 s |
| Flowing air (v = 1 m/s) | T _{0,5} = 4 s, T _{0,9} = 10 s |
| Resistance value [Ω] at | |
| Temperature | Tolerance class |
| | F 0,3 [Ω] |
| 0 °C | 100.00 ± 0.12 |
| +100 °C | 138.51 ± 0.3 |
| Maximal Resistance Change at UCT 250 h | < 0.1 % |
| Specification | DIN EN 60751 |

| | |
|---|----------------|
| Type | Film sensor |
| Application/Mounting | Only face down |
| Technology: Advanced thin-film-technology (ceramic carrier with a structured platinum layer, covered with a passivation layer) | |
| Operating conditions: Unprotected application only in dry environments without any contamination | |
| Conformity: 2011/65/EU - Restriction of the use of Hazardous Substances Directive (RoHS) | |
| Dimensions [mm] | |
| | |

Functional performance

according to DIN EN 60751



Picture 1: Resistance and temperature tolerances of Pt100
(Please attend: operating temperature range from -50 °C up to +150 °C)

Temperature range from -50 °C up to 0 °C:
 $R_t = R_0 \cdot (1 + A \cdot t + B \cdot t^2 + C \cdot (t - 100 \text{ °C}) \cdot t^3)$

Temperature range from 0°C up to +600°C:
 $R_t = R_0 \cdot (1 + A \cdot t + B \cdot t^2)$

Tolerance classes according to DIN EN 60751:
 Class F 0,3 (-50°C - +500°C): $\Delta t = \pm (0.3 + 0.005 \cdot |t|)$

Whereby:

R_t ... Resistance [Ω] at temperature t

R₀ ... 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

Application on PCB for

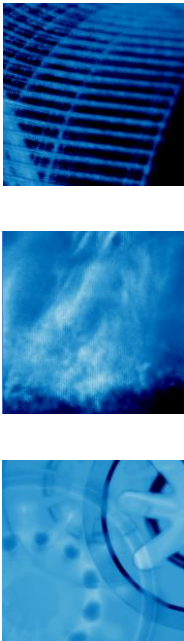
- Industrial electronics
- Building automation
- Automotive electronics
- Energy and environmental engineering
- Safety and medical engineering

Ordering examples

| Construction | Class of accuracy |
|-------------------|-------------------|
| Pt100 SMD 0805 fd | F 0,3 |

Type of packaging on request.

Other classes of accuracy are available on request.



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