

SOT223, Housed Pt Temperature Sensor according to DIN EN 60751

Temperature range -50 °C to +150 °C

- Platinum sensor precision in SOT223 format
- Excellent long term stability
- High accuracy
- High vibration and shock resistance
- Optimized for soldering

The SOT223 is a Pt-RTD enclosed in an industry-standard SOT housing and is characterized by a linear resistance v. temperature response (as per DIN EN 60751), interchangeability, high long-term stability and accuracy. Designed for easy mounting in electronic assemblies and ideal for temperature compensation on PCBs, the SOT223 sensor is equipped with a cooling fin to enhance thermal contact with the PCB.

Nominal Resistance R ₀ [Ω]	Tolerance Class	Order Number	Packaging
Pt1000	F 0.6 (2B)	32209116	Blister reel

Temperature Range of Tolerance Class

Validity of Class F 0.6 (2B) -50 °C to +150 °C
The specified tolerance classes refer to continuous operation.

Temperature Coefficient

TCR = 3850 ppm/K

Response Time

Water (v = 0.4 m/s):
 $t_{0.5} = 0.45$ s
 $t_{0.9} = 1.2$ s
 Air (v = 2 m/s):
 $t_{0.5} = 8$ s
 $t_{0.9} = 26$ s

Measuring Current

Pt1000 Ω: 0.1 to 0.3 mA
(self-heating has to be considered)

Long-Term Stability

The drift of the resistance value at 0 °C after a storage for 1000 hours in air at the declared upper temperature limit is not more than the tolerance value of the declared tolerance class according DIN EN 60751. Typical drift of R(0 °C) is 0.06 % after 1000 hours at +150 °C.

Self-Heating

0.049 K/mW at 0 °C mounted on PCB
0.2 K/mW at 0 °C package only

Specific Volume Resistance

100 °C = 14×10^{14} Ωcm
150 °C = 0.3×10^{12} Ωcm

Physical Data For Housing

Material: duroplastic
Coefficient of thermal expansion: 12×10^{-6} 1 /K (below T_g)
Thermal Conductivity: 1.04 W/mK
Moisture absorption: Boiling water (48 hours) < 1.0 %

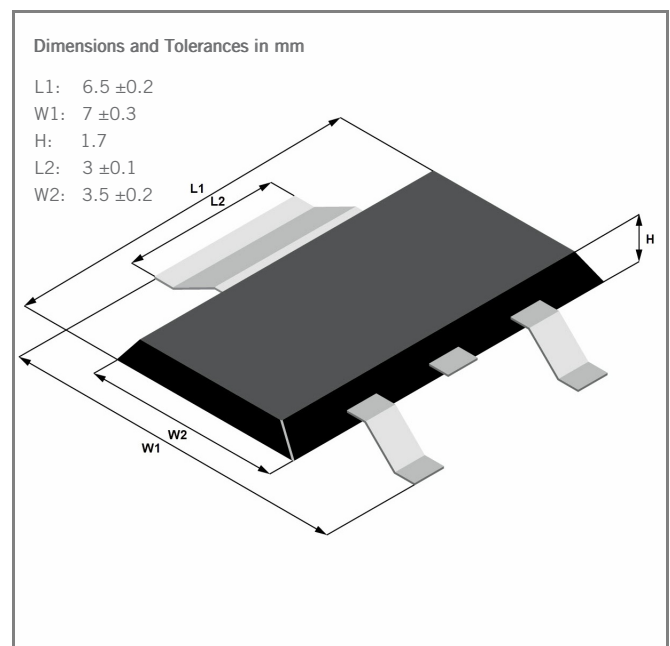


Image for illustration purposes only
The wide connection lug is used for heat transfer

SOT223, Housed Pt Temperature Sensor according to DIN EN 60751

Temperature range -50 °C to +150 °C

Flammability

UL94-V0

Soldering Connection

Cu alloy with Sn coating

Connection Technology

Soft Soldering

Packaging

Blister reel

Alternative packaging forms on request

Storage Life

9 months (in original packaging).

Nitrogen atmosphere recommended

Note

Other tolerances and values of resistance are available on request

California Proposition 65



WARNING

WARNING: This product can expose you to chemicals including carbon black, which is known to the State of California to cause cancer.

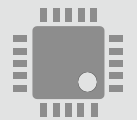
For more information go to www.p65warnings.ca.gov



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TO 92, Housed Platinum Temperature Sensor according to DIN EN 60751

Temperature range -50 °C to +150 °C

The PRTD in a plastic housing is characterized by its standardized signal according to DIN EN 60751 (according to IEC 751), interchangeability, excellent long-time stability and accuracy. It offers an optimal price-performance ratio in large volume applications including HVAC and industrial equipment.

Nominal Resistance R_0	Tolerance	Order Number	Packaging
100 Ohm at 0 °C	F 0.3 (Class B)	32 209 210	VCI-plastic bag
1000 Ohm at 0 °C	F 0.3 (Class B)	32 209 220	VCI-plastic bag

Temperature and tolerance range

Tolerance class F 0.3 (B): -50 °C to +150 °C

Continuous operation

Temperature coefficient

TK = 3850 ppm/K

Response time

Water current ($v= 0.4\text{m/s}$):
 $t_{0.5} = 0.7 \text{ s}$
 $t_{0.9} = 2.0 \text{ s}$

Air stream ($v= 2\text{m/s}$):
 $t_{0.5} = 8.0 \text{ s}$
 $t_{0.9} = 26.0 \text{ s}$

Measuring current

100 Ω : 0.3 to 1.0 mA
 1000 Ω : 0.1 to 0.3 mA
 (self-heating has to be considered)

Long-term stability

R_0 -Drift 0.06 % after 1000 hours at 150 °C

Self-heating

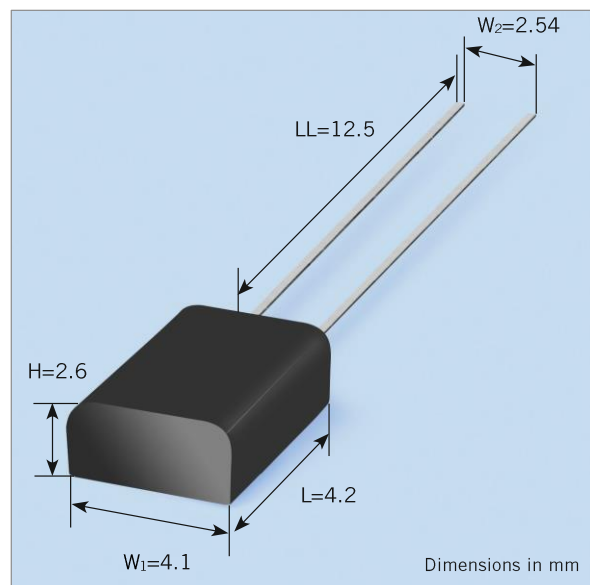
Pt100: 0.4 K/mW at 0 °C
 Pt1000: 0.2 K/mW at 0 °C

Specific volume resistance

20 °C: $5 \times 10^{16} \Omega\text{cm}$
 150 °C: $5 \times 10^{13} \Omega\text{cm}$

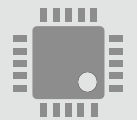
Physical data of housing

Material: duroplastic
 Coefficient of thermal expansion: $13 \times 10^{-6} \Omega/^\circ\text{C}$
 Thermal conductivity: 0.65 W/mK
 Moisture absorption: 0.5 % (P.C.T.: 121 °C, 24 hours)



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 Web: www.heraeus-nexensos.com



TO 92, Housed Platinum Temperature Sensor according to DIN EN 60751

Temperature range -50 °C to +150 °C

Flammability

UL94-V0

Soldering connection

Cu alloy Sn/Pb coating

Length (LL)

12.5 mm ± 0.5 mm

Connection technology

Suitable for soft soldering

Packaging

Alternative packaging forms on request.

Storage life

9 months (in original packaging)

Nitrogen atmosphere recommended

Note

Other tolerances, values of resistance and wire lengths are available on request.

California Proposition 65



WARNING:

This product can expose you to chemicals including carbon black, which is known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov.



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