

SMD 1206 SC Solder, Pt Temperature Sensor according to DIN EN 60751

Temperature range -50 °C to +175 °C*, designed for soldering

- Excellent thermal coupling and quick response time via soldering connections
- Optimized long-term stability and high precision over entire operating life
- Electrically isolated bottom surface enables mounting on or near heat-generating components
- Maximum operating temperature exceeding 200 °C
- Contacts optimized for state-of-the-art bonding solutions

The SMD 1206 SC is designed for mounting to power electronic boards via soldering. The precision, low drift and long-term stability of a Pt RTD is delivered in an economical package. The isolation provided by the top-mounted terminations enables positioning of the chip anywhere on the board. Mounting in proximity to the heat source/die increases measurement accuracy and facilitates more compact designs.

Nominal Resistance R_0 [Ω]	Tolerance Class	Order Number	Packaging
Pt1000	F 0.6 (2B)	5147921	Wafer Frame

Temperature Range of Tolerance Class

Validity of Class F 0.6 (2B) +50 °C to +175 °C
The specified tolerance classes refer to continuous operation.

Temperature Coefficient

TCR = 3850 ppm/K

Measuring Current

Pt1000 Ω : 0.6 to 1 mA
(self-heating has to be considered)

Long-Term Stability

Max. R_0 - drift \leq 0.23 % after the following, independently performed standard tests:

- 1000 hours at +200 °C, \geq 0.1 mA
- 1000 hours at +85 °C, 85 % Hrel.
- 1000 cycles at -40 °C/ +150 °C

Self-Heating

< 0.4 K/mW (unassembled)

Insulation Resistance

> 1000 M Ω at 20 °C

Topside Metallization

Bonding: AgPt surface in thick film technology for thick wire ultrasonic bonding process.

Recommendation: Heraeus Al H11 thick wires (\varnothing 300 μ m).
All tests were performed with recommended wire

Backside Metallization

Soldering: AgPd surface in thick film technology for soldering process.

Recommendation: Heraeus soldering paste (F645)
All tests were performed with recommended paste F645

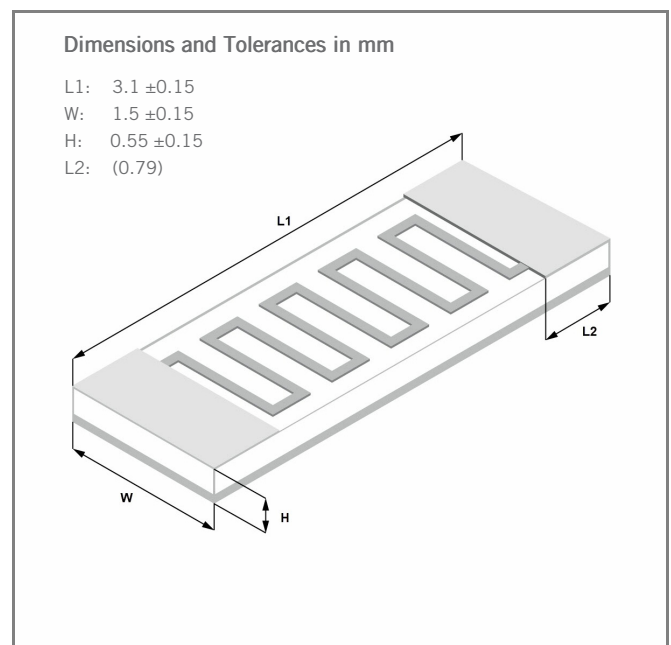


Image for illustration purposes only
Color, shape and forming of metallization may vary

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Connection Technology

Suitable for soldering on backside, for optimized heat transfer and on top side for ultrasonic wire bonding

Shear Test Backside

Soldering

Typical mean value >15N/mm²

Soldering paste Heraeus F645 on Ni/Au coated DCB substrate

Solder depot 2mg

Fired at peak temperature 250 °C for 90 sec in vacuum solder furnace

Pull Test Topside

Bonding

> 210 cN (equals 75 % wire load limit of Al H11 thick wires (Ø = 300 µm))

Dielectric Strength

7.5 kV

Based on theoretical material substrate properties and given sensor geometry. Processing during assembly, employed potting material and potting meniscus can reduce the dielectric strength in the application.

Packaging

Wafer Frame

Substrate on wafer frame in aluminized vacuum plastic bag

Storage Life

In unopened original packing (minimum half a year)

Note

Other tolerances and values of resistance are available on request.

*The maximum operation temperature is determined by the solder material.

California Proposition 65



WARNING

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

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



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