

SMD 1206 sinterable, Pt Temperature Sensor according to DIN EN 60751

Temperature range $-50\text{ }^{\circ}\text{C}$ to $+200\text{ }^{\circ}\text{C}$

Power electronics represent the main application focus of the sinterable temperature sensor. Mass production, precision, long-term stability and low costs were in the foreground of its design. The design allows a potential free positioning direct to the heat source/die. The topside metallization is adapted for thick wire bonding and the backside is designed for silver sinter processes. Both sides (metallization) are electrically isolated from each other.

Nominal Resistance R_0	Tolerance	Order Number	Packaging
1000 Ohm at $0\text{ }^{\circ}\text{C}$	F 0.6 (Class 2B)	50 333 44	Substrate on wafer frame in plastic bag

Temperature and tolerance range

Tolerance class F 0,6 (2B): $-50\text{ }^{\circ}\text{C}$ to $+200\text{ }^{\circ}\text{C}$
(continuous operation)

Temperature coefficient

TCR = 3850 ppm/K

Measuring current

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

Long-term stability

Max. R_0 -Drift $\leq 0.23\%$ after each:
1000 hours at $+200\text{ }^{\circ}\text{C}$, $\geq 0.1\text{ mA}$
1000 hours at $+85\text{ }^{\circ}\text{C}$, 85 % Hrel.
1000 cycles at $+150\text{ }^{\circ}\text{C}/-40\text{ }^{\circ}\text{C}$

Self-heating

$< 0.4\text{ K/mW}$ (unassembled)

Isolation resistance

$> 1000\text{ M}\Omega$ at $20\text{ }^{\circ}\text{C}$

Top side metallization (Bonding)

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

Recommendation:

Heraeus Al H11 thick wires ($\varnothing 300\text{ }\mu\text{m}$)

All tests were done with recommended wire (see above).

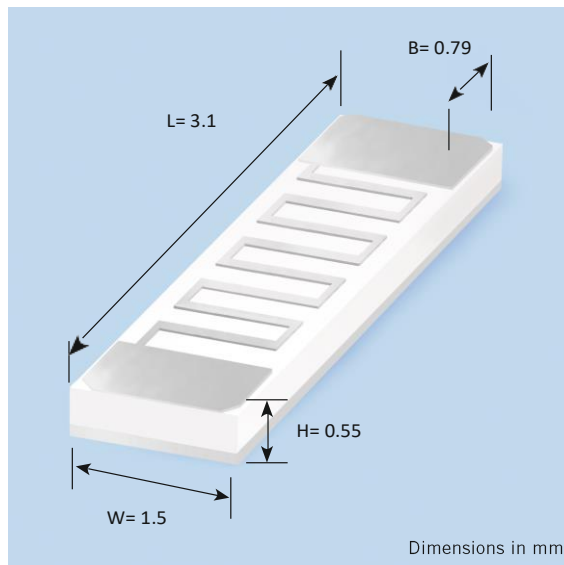
Back side metallization (Sintering)

AgPd surface in thick film technology for silver sintering process.

Recommendation:

Heraeus sinter paste (ASP 338 and 043 series)

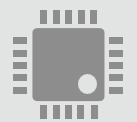
All tests were done with recommended paste (see above).



The information provided in this data sheet describes certain technical characteristics of the product, but shall not be qualified or construed as quality guarantee (Beschaffenheitsgarantie) in the meaning of sections 443 and 444 German Civil Code. The information provided in this data sheet regarding measurement values (including, but not limited to, response time, long-term stability, vibration and shock resistance, insulation resistance and self-heating) are average values that have been obtained under laboratory conditions in tests of large numbers of the product. Product results or measurements achieved by customer or any other person in any production, test, or other environment may vary depending on the specific conditions of use. The customer is solely responsible to determine whether the product is suited for the customer's intended use; in this respect Heraeus cannot assume any liability. The sale of any products by Heraeus is exclusively subject to the General Terms of Sale and Delivery of Heraeus in their current version at the time of purchase, which is available under www.heraeus.com/gtc or may be furnished upon request. This data sheet is subject to changes without prior notice.

Heraeus Nexensos GmbH, Reinhard-Heraeus-Ring 23, 63801 Kleinostheim, Germany

Web: www.heraeus-nexensos.com



SMD 1206 sinterable, Pt Temperature Sensor according to DIN EN 60751

Temperature range -50 °C to +200 °C

Connection technology

Suitable for sintering on backside, for optimized heat transfer and on topside for ultrasonic wire bonding

Shear Test backside/sinter

- > 10 N/mm² (single value)
- > 20 N/mm² (mean value)

Pull Test topside / bonding

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

Packaging

On wafer frame in aluminized vacuum bag

Storage life

In unopened in original packing (minimum half a year)

Note

Other tolerances and values of resistance are available on request.

California Proposition 65



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.



The information provided in this data sheet describes certain technical characteristics of the product, but shall not be qualified or construed as quality guarantee (Beschaffenheitsgarantie) in the meaning of sections 443 and 444 German Civil Code. The information provided in this data sheet regarding measurement values (including, but not limited to, response time, long-term stability, vibration and shock resistance, insulation resistance and self-heating) are average values that have been obtained under laboratory conditions in tests of large numbers of the product. Product results or measurements achieved by customer or any other person in any production, test, or other environment may vary depending on the specific conditions of use. The customer is solely responsible to determine whether the product is suited for the customer's intended use; in this respect Heraeus cannot assume any liability. The sale of any products by Heraeus is exclusively subject to the General Terms of Sale and Delivery of Heraeus in their current version at the time of purchase, which is available under www.heraeus.com/gtc or may be furnished upon request. This data sheet is subject to changes without prior notice.

Heraeus Nexensos GmbH, Reinhard-Heraeus-Ring 23, 63801 Kleinostheim, Germany
Web: www.heraeus-nexensos.com