SMD 0402 FC – Miniaturized Temperature Sensor according to DIN EN IEC 60751

Temperature range -50 °C to +150 °C

- Small footprint and minuscule thickness
- Fast response time
- Highly accurate and reliable

The SMD 0402 FC miniaturized temperature sensor element widens the application space for accurate temperature sensing: A small footprint of 1 mm x 0.5 mm combined with a thickness of 280 µm enables positioning in constraint spots and in between interface layers.

Nominal Resistance R_0 [Ω]	Tolerance Class	Type	Order Number
Pt1000	F 0.3 (B)	0402	5210575

Temperature Range
-50 °C to +150 °C, short term up to +250 °C*

Temperature Coefficient
TCR = 3850 ppm/K

Response Time
Water (v = 0.4 m/s)

$t_{0.63}$ < 50 ms
$t_{0.90}$ < 100 ms

Measuring Current
Pt1000 Ω: 0.1 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.

Storage: R_0-Drift < ± 0.12 %
(1000 hours at 150 °C; 500 h at 85 °C and 85 % r.H.)

Cycle test: R_0-Drift < ± 0.12 %
(1000 temperature cycles -40 °C to 150 °C)

Terminations
Ag pads in thick-film technology

Connection Technology
Face down mounting: reflow soldering or wave soldering, mounting with Ag conductive adhesive, or ACA / ACF. When mounting on PCB board, the expansion relationship of the sensor and the substrate material must be taken into account.

Face up mounting: Wire bonding

Dimensions and Tolerances in mm

L:	1.0
W1:	0.5
L2:	0.2
W2:	0.4
H:	0.28

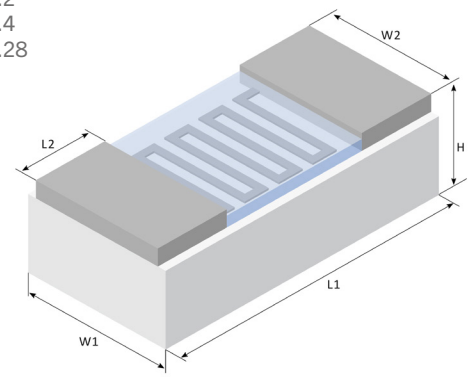


Image for illustration purposes only

Application Examples

- Advanced electronics
- Lab-on-chip
- On-skin temperature devices
- Lifestyle applications
- Wearables and Lifestyle Applications
- EV charging
- Next Gen battery monitoring
- Medical applications
- Tiny probes, endoscopes

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Packaging
Packaging unit: 500 pcs single parts on dicing tape in wafer frame

Alternative packaging forms on request

Storage Life
At least 24 months (after production), when stored in sealed original bags and under dry and clean conditions. Storage in Nitrogen atmosphere further reduces the risk of corrosion and can increase storage life beyond the given shelf-life.

MSL Class
MSL-1-unlimited

Note
Other tolerances and values of resistance are available on request. Ask for customized products.

*The maximum operation temperature is determined by the connection technology and expansion match of PCB.
Other tolerances and values of resistance are available on request.

RoHS compliant

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. YAGEO Nexensos does not recommend the use of standard catalogue products or automotive grades for aerospace applications or manned space flight. The customer is solely responsible to determine whether the product is suited for the customer's intended use; in this respect YAGEO Nexensos cannot assume any liability. The sale of any products by YAGEO Nexensos is exclusively subject to the General Terms of Sale and Delivery of YAGEO Nexensos in their current version at the time of purchase, which is available under www.yageogroup.com /SalesResources/ResourceLibrary or may be furnished upon request. This data sheet is subject to changes without prior notice.

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