

## SMD 0603, Pt Temperature Sensor according to DIN EN IEC 60751

Temperature range -50 °C to +130 °C (150 °C\*)

- Pt RTD in standard SMD format
- High accuracy and interchangeability of a platinum sensor
- Automated mounting via standard pick-and-place tools
- Blister reel packaging
- Available in large volumes

SMD 0603 Pt RTD elements are designed for automated assembly on printed circuit boards. The precision, accuracy and interchangeability of a Pt RTD in an SMD package provides an ideal solution for board-mounted temperature sensing, board protection, and temperature compensation. Application areas include HVAC, automobiles, e-mobility, and medical and industrial equipment.

In principle, the products can also be used in automotive applications, in this case YAGEO Nexensos will check upon the request of the customer, whether additional requirements can be met (e.g. IMDS, PPAP).

Nominal Resistance $R_0$ [Ω]	Tolerance Class	Order Number	Packaging
Pt1000	F 0.3 (B) F 0.6 (2B)	32207638 32207637	Blister reel Blister reel

### Temperature Range of Tolerance Class

Validity of Class F 0.3 (B) -50 °C to +130 °C

Validity of Class F 0.6 (2B) -50 °C to +130 °C

\*(With the use of expansion-matched circuit board materials temperatures up to +150 °C are possible)

### Temperature Coefficient

TCR = 3850 ppm/K

### Response Time

Water ( $v = 0.4$  m/s):  
 $t_{0.5} = 0.1$  s  
 $t_{0.9} = 0.25$  s

Air ( $v = 2$  m/s):  
 $t_{0.5} = 2.5$  s  
 $t_{0.9} = 8$  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 to DIN EN IEC 60751.

Typical drift of  $R(0$  °C) is 0.06 % after 250 hours at +150 °C.

### Self-Heating

0.8 K/mW at 0 °C

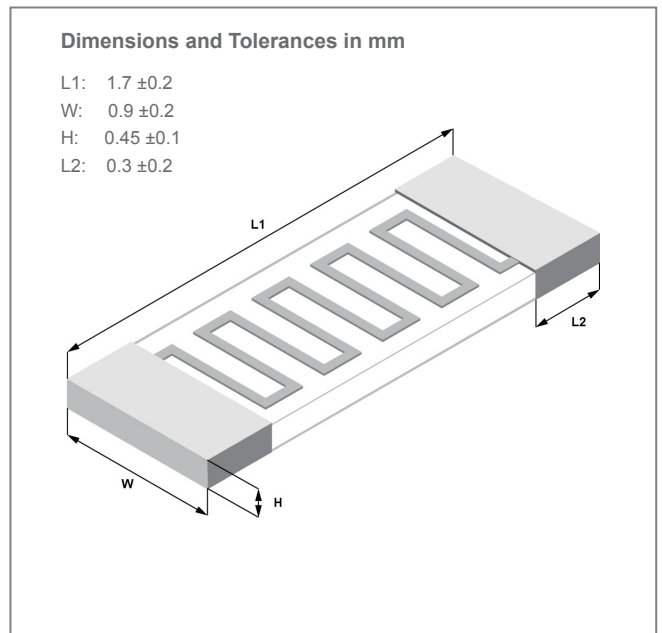


Image for illustration purposes only  
 Color, shape and forming of metallization may vary

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### Types

Pt 1000 SMD 0603  
Pt 1000 SMD 0805  
Pt 1000 SMD 1206

### Soldering Conditions

Limit profiles: High and Low  
Atmosphere: Nitrogen and air

### Mounting

Layout of the circuit board: Benchmark II (Material FR4  
35µm Cu, size 190.5 x 127 x 1.5mm)

Circuit board surfaces: chem. Ag, Cu OSP, NiAu, chem. Sn  
Soldering paste: F640 SA30C5-89 M30  
(Material SnAgCu 96.5/3.0/0.5)

Total Troughput Time		Peak (max. temperature)		Time over 217 °C in sec.	
		High [Total throughput time 520 sec]	Low [Total throughput time 280 sec]	High [Total throughput time 520 sec]	Low [Total throughput time 280 sec]
Sensor position on circuit board	Center	+237 °C	+245 °C	60	92
	Mass	+231 °C	+238 °C	49	68
	Mix	+238 °C	+248 °C	65	103

### Result

All tested samples showed a sufficient wetting under the described profiles High and Low, based on a visual soldering point inspection. All given data should not be constructed as guaranteeing specific properties of the product or its suitability for a specific particular application. The data are an extract from a test report with status from July 2010.

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### Soldering Connection

End termination galvanic tin plated with Ni barrier layer

### Connection Technology

Face up mounting; reflow soldering or wave soldering, e.g double wave  $\leq 8$  s/235 °C

### Packaging

Blister reel

"Face-up" 4000 pcs/ reel

Alternative packaging forms on request

### Storage Life

At least 24 months (after production), when stored in original VCI bags and under dry and clean conditions.

Storage in Nitrogen atmosphere further reduces the risk for corrosion and can increase storage life beyond the given shelf-life.

### Note

Other tolerances and values of resistance are available on request

### 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](http://www.p65warnings.ca.gov)

**RoHS**  
compliant

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