

SMD 0603 (V), Platinum Resistance Temperature Detector according to DIN EN 60751 Temperature range -50 °C to +150 °C

The PRTD SMD 0603 is designed for automatic mounting in large volume applications on printed circuit boards where long time stability, interchangeability combined with low costs are important.

Nominal Resistance R0	Tolerance	Order Number
	DIN EN 60751 2009-05	Blister reel
1000 Ohm at 0 °C	F 0.3 (Class B) F 0.6 (Class 2B)	32 207 638 32 207 637

Temperature and tolerance range

-50 °C to +150 °C

(Application temperatures of +150 °C are only possible with the use of expansion-matched circuit board material; up to +130 °C with circuit board material not matched for expansion)

Tolerance class F 0.6 (2B): -50 °C to +150 °C

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

Temperature coefficient

TK = 3850 ppm/K

Response time

Water current (v= 0,4m/s): t0.5 = 0.10 s

t0.9 = 0.25 s

Air stream (v= 2m/s): t0.5 = 2.50 s

t0.9 = 8.00 s

Measuring current

1000 Ω: 0.1 to 0.3 mA

(self-heating has to be considered)

Long-term stability

R0-Drift 0.06 % after 250 hours at 150 °C

Self-heating

0.8 K/mW at 0 °C

Soldering connection

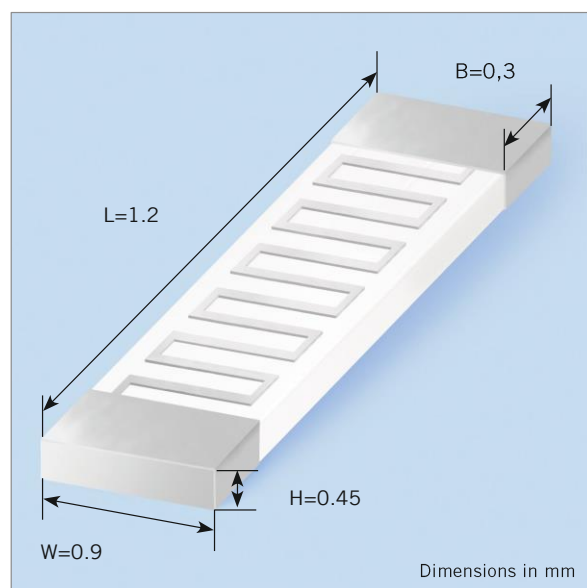
End-termination galvanic tin plated with Ni-barrier layer

Connection technology

Face up-mounting: reflow soldering or wave soldering, e. g. double wave ≤ 8 s / 235 °C

Packaging

„Face-up“ in blister reel, 4.000 pcs



Storage life

9 months (in original packaging)

Nitrogen atmosphere recommended

Note

Other tolerances, 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 regarding the technical characteristics of the product describe the quality of the product, but shall not be qualified or construed as quality guarantees (Beschaffenheitsgarantie) in the meaning of sections 443 and 444 German Civil Code. The information provided in this data sheet regarding measurement values (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; measurements in productive use may vary significantly depending on the specific conditions of use.

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Mounting:

Layout of the circuit board: Benchmark II 150Qm
(Material FR4 35Qm 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)

Types:

Pt 1000 SMD-V 0603

Pt 1000 SMD-V 0805

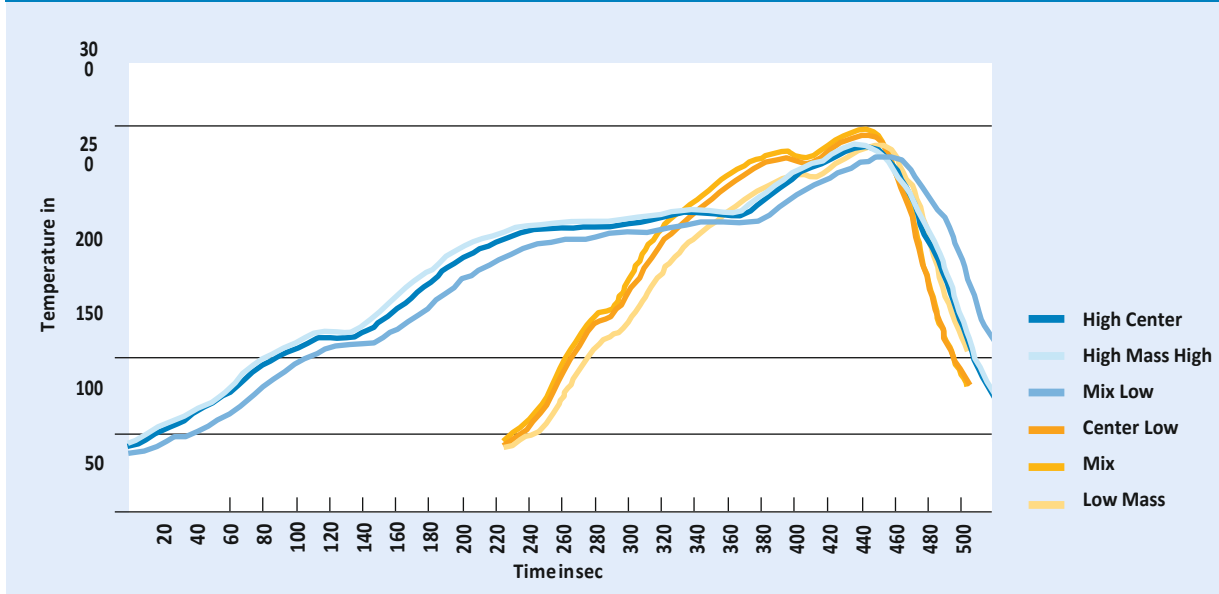
Pt 1000 SMD-V 1206

Soldering conditions:

Limit profiles: High and Low

Atmosphere: Nitrogen and air

High and Low limit profiles



	Peak (max. temperature)		Time over 217 °C in sec	
	High	Low	High	Low
Center ¹	237 °C	245 °C	60	92
Mass ²	231 °C	238 °C	49	68
Mix ³	238 °C	248 °C	65	103

¹Center: Position of temperature sensor in the center of the circuit board

²Mass: Position of the temperature sensor on a large mass on the Circuit board

³Mix: Position of temperature sensor left and right on the circuit board

High limit profile: Total throughput time 520 sec

Low limit profile: Total throughput time 280 sec

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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