Platinum Resistance Temperature Detector SMD 1206 (V)

The PRTD SMD 1206 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 DIN EN 60751 1996-07	Tolerance DIN EN 60751 2009-05	Order Number
100 Ohm at 0°C	Klasse B Klasse 2B	F 0.3 F 0.6	32 207 590 32 207 589
1000 Ohm at 0°C	Class B Class 2B	F 0.3 F 0.6	32 207 595 32 207 594

Specification DIN EN 60751 (according to IEC 751)

Temperature range -50°C to +130°C (Possible working temperatures using volume expansion aligned conductor board material: 150°C)
Tolerance Class B or 2B: -50°C up to +130°C

Temperature coefficient TCR = 3850 ppm/K

Soldering connection End-termination galvanic tin plated with Ni-barrier layer

Long term stability max. R_0-drift 0.06% after 1000 h at 130°C

Environmental conditions unhoused for dry environments only

Insulation resistance > 100 MΩ at 20°C;
> 2 MΩ at 130°C (glass covering)

Measuring current 100Ω: 0.3 to 1.0mA
1000Ω: 0.1 to 0.3mA
(self heating has to be considered)

Self heating 0.4 K/mW at 0°C

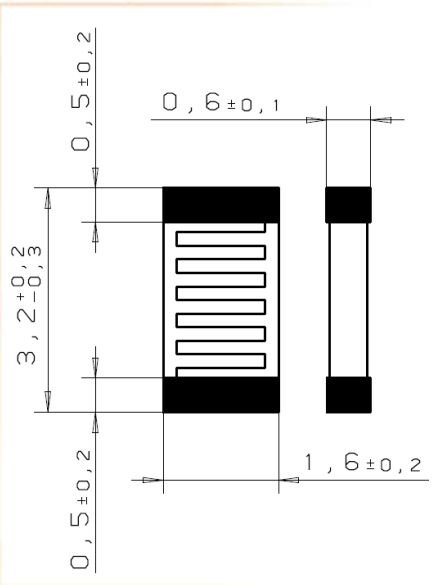
Response time water current (v= 0.4m/s): $t_{0.5}$ = 0.15s
$t_{0.9}$ = 0.30s
air stream (v= 2m/s): $t_{0.5}$ = 3.5s
$t_{0.9}$ = 10s

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

Storage life Min. 9 months (in dry environment)

Packaging „Face-up“ in blister reel, 4000 pcs / reel

Note Other tolerances and values of resistance are available on request.



RoHS conform

We reserve the right to make alterations and technical data printed. All technical data serves as a guideline and does not guarantee particular properties to any products.

Solderability test of SMD type sensor elements

Assembly conditions

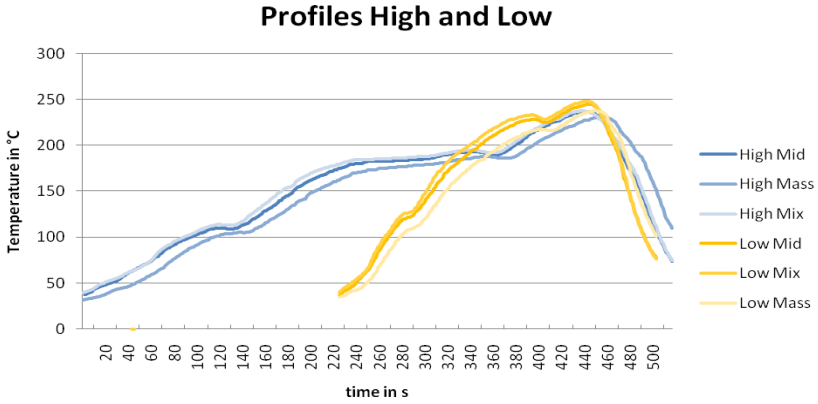
Layout of PCB: Benchmarker II 150µm (material FR4 35µm Cu, size 190.5 x 127 x 1.5mm)
Tested PCB surfaces: chem. Ag, Cu OSP, NiAu, chem. Sn
Solder Paste: F640 SA30C5-89 M30 (material SnAgCu 96.5/3.0/0.5)

Tested elements

Pt 1000 SMD- V 0603
Pt 1000 SMD- V 0805
Pt 1000 SMD- V 1206

Solder conditions

Profiles: High and Low
Atmosphere: Nitrogen and Air



	Peak (max. temperature)		time above 217 °C in s	
	High	Low	High	Low
Mid [1]	237 °C	245 °C	60	92
Mass [2]	231 °C	238 °C	49	68
Mix [3]	238 °C	248 °C	65	103

[1] Mid: Position of temperature sensor in the middle of the PCB
[2] Mass: Position of temperature sensor at a big mass area on the PCB
[3] Mix: Position of temperature sensors on right and left side on the PCB

Profile High: complete processing time 520 s
Profile Low : complete processing time 280 s

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 construed 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.