

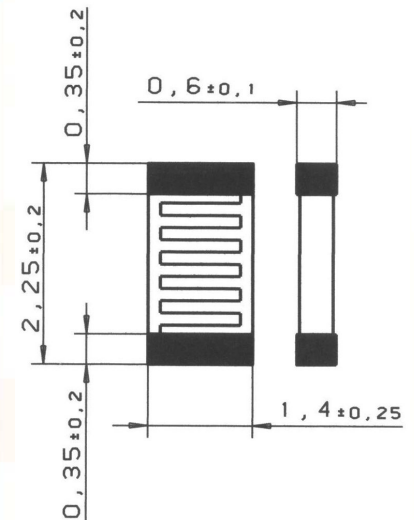
Platinum Resistance Temperature Detector

SMD 0805 (V)

The PRTD SMD 0805 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 R ₀	Tolerance DIN EN 60751 1996-07	Tolerance DIN EN 60751 2009-05	Order Number Plastic Bag
100 Ohm at 0°C	Class B	F 0.3	32 207 605
	Class 2B	F 0.6	32 207 604
1000 Ohm at 0°C	Class B	F 0.3	32 207 615
	Class 2B	F 0.6	32 207 614

Specification	DIN EN 60751	
Tolerance	Class B (R ₀ : ±0.12 %) Class 2B (R ₀ : ±0.24 %)	
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 1000h 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	0.8 K/mW at 0°C	
Reaction time	Flowing water (v= 0.4m/s):	t _{0.5} = 0.10s t _{0.9} = 0.25s
	Air flow (v= 2m/s):	t _{0.5} = 2.5s t _{0.9} = 8s
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.	



Solderability test of SMD type sensor elements

Assembly conditions

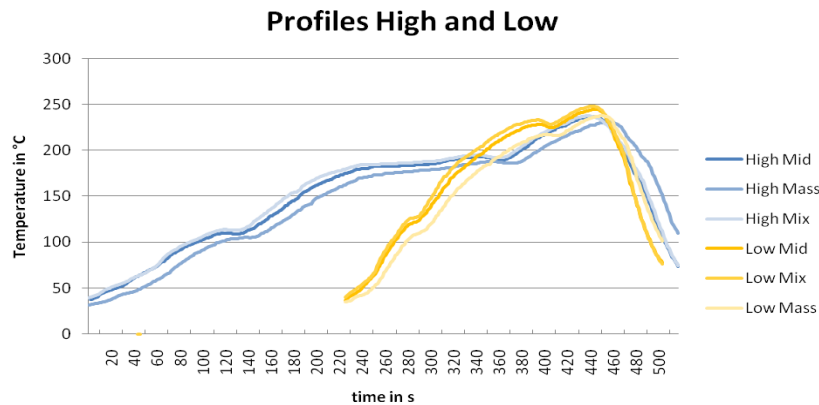
Layout of PCB: Benchmarker II 150µm (material FR4 35µm Cu, size 190.5 x 127 x 1.5mm)
 Tested PCB surfaces: chem. Ag, Cu OSP, NiAu, chem. Sn
 Solder Paste: F640 SA30C5-89 M30 (material SnAgCu 96.5/3.0/0.5)

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.