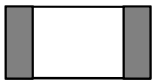
Pt Temperature Sensor – PTOD102



- **Conformal to standard platinum temperature sensors according DIN EN 60751**
- **R_0: 1000 Ω**
- **Class F0.3 (B) and F0.6 (C)**
- **Global interchangeability**
- **SMD 1206**

RoHS

DESCRIPTION

This sensor is a resistance temperature detector (RTD) using a platinum resistor as sensing element.
这款传感器为电阻式温度探测器，利用铂电阻作为传感元件。

This platinum resistor consists of a structured platinum film on a ceramic substrate, passivated by glass coating.
铂电阻由装在陶瓷基板上的结构化铂薄膜组成，经玻璃封装。

The contact areas are solderable AgPd (Silver Palladium). This SMD - Sensor can be mounted face down to a PCB.
其接触面为银钯合金。此款贴片式传感器可装贴在 PCB 上。

The characteristic curve of this Platinum RTD complies with DIN EN 60751. The usage of Platinum as resistive material guarantees high long term stability.
这款铂电阻温度传感器的曲线特性符合 DIN EN 60751 标准。使用铂作为电阻材料保证了良好的长期稳定性。

The tolerance class is determined at 25°C (room temperature calibration).
公差等级是在 25°C 下测定的（常温校准）。

FEATURES

Conformal to DIN EN 60751
符合 DIN EN 60751 标准
Temperature range: -50 … +150 °C
温度范围： -50 … +150 °C
Standard nominal resistance value R_0: 1000 Ω
标准阻值 R_0: 1000 Ω
Class F0.3 (B), also available: Class F0.6 (C)
等级 F0.3 (B)及 F0.6 (C)
Low drift over lifetime
终生低漂移
Global interchangeability
国际化可交换性
Surface-mount Device (SMD-chip) size 1206
表贴芯片尺寸：1206

APPLICATIONS

Various temperature feedback control
温度变化反馈控制
Heat meter
热量表

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PERFORMANCE SPECS

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Nominal Resistance at 0 °C	R_0	Class F0.3 (B) Class F0.6 (C)	998.8 997.7	1000.0	1001.2 1002.3	Ω
Nominal Resistance at 25 °C	R_{25}	Class F0.3 (B) Class F0.6 (C)	1095.7 1094.3	1097.3	1099.0 1100.4	Ω
Temperature tolerance at 25 °C		Class F0.3 (B) Class F0.6 (C)	-0.43 -0.78		+0.43 +0.78	°C
Temperature Coefficient of Resistance	TCR	0 °C, 100 °C		3850		ppm/°C
Temperature Range			-50		150	°C
Self Heating Coefficient in air, flow: 1 m/s				0.4		°C/mW
Response Time Water Flow: 0.4 m/s	$\tau_{W,0.9}$			0.3		s
Response Time Air Flow: 1 m/s	$\tau_{A,0.9}$			15		s
Measuring Current					0.5	mA

CALCULATION FORMULAS

The calculation formulas of this Pt-RTD are defined in DIN EN 60751 as following:

For T ≥ 0 °C:

$$R_{(T)} = R_{(0)} * (1+a * T + b * T^2)$$

For T < 0 °C:

$$R_{(T)} = R_{(0)} * [1+a * T + b * T^2 + c * (T-100°C) * T^3]$$

Coefficients:

a = 3.9083E-03
b = -5.775E-07
c = -4.183E-12

Tolerances:

Class F0.3 (B):	± (0.33+0.006*|T/°C|) °C	(-50 … +150 °C)
Class F0.6 (C):	± (0.66+0.008*|T/°C|) °C	(-50 … +150 °C)

(inaccuracy of measurement included due to room temperature calibration)

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DIMENSIONAL DRAWING OF SENSOR

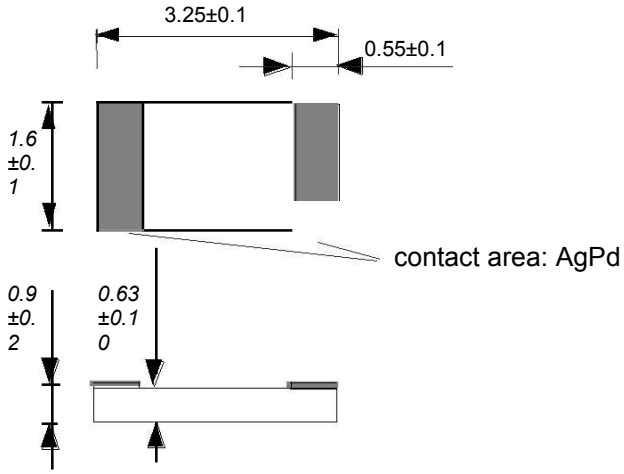

Figure 1: PTOD102BR00 outline dimensions (mm)

ORDERING INFORMATION

Product Number	Type	Description
NB-PTCO-321	PTOD102BR00	1000 Ohms, 1.6 mm x 3.2 mm, F 0.3 (B), SMD1206
NB-PTCO-330	PTOD102CR00	1000 Ohms, 1.6 mm x 3.2 mm, F 0.6 (C), SMD1206

PACKING AND MINIMUM ORDER QUANTITY

Packing	PCS per Packing unit	MOQ
Tape: 8 mm width, pitch: 4 mm on 7 inch reel	3500	3500

TECHNICAL CONTACT INFORMATION

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Measurement Specialties, Inc. 910 Turnpike Road Shrewsbury, MA 01545 United States Phone: +1-508-842-0516 Fax: +1-508-842-0342	MEAS Deutschland GmbH Hauert 13 D-44227 Dortmund Germany Phone: +49-(0)231-9740-0 Fax: +49-(0)231-9740-20	北京赛斯维测控技术有限公司 北京市朝阳区望京西路48号 金隅国际D座302 电话：＋86 010 8477 5646 传真：＋86 010 5894 9029 邮箱：sales@sensorway.cn http://www.sensorway.cn