Innovative Sensor Technology
physical. chemical. biological.

P_K_.1206.2ST._

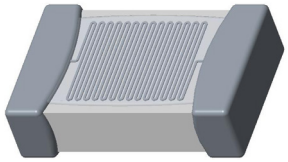
Platinum thin film RTD

For the automatic assembling on PCBs

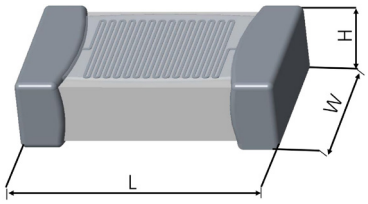
Benefits & Characteristics

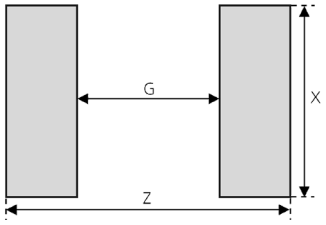
- Excellent long-term stability and resistance to thermal cycling
- Low self-heating
- Automatic assembly in large-volume applications

Product image



Illustration[1)]





Dimensions

Dimensions in mm	**L**	**W**	**H**
	3.1 ± 0.15	1.6 ± 0.15	0.5 ±0.1
Land pattern in mm	**Z**	**G**	**X**
	4.00	1.90	1.75

Technical Data

Electrical Specifications

Operating temperature range	-50 °C to +150 °C (see general notes 1.1)	
Nominal resistance	100 Ω at 0 °C, 500 Ω at 0 °C, 1000 Ω at 0 °C	
Characteristic	IEC 60751	
Tolerance class (dependent on temperature range)		IST AG reference
	IEC 60751 F0.15	A
	IEC 60751 F0.3	B
	IEC 60751 F0.6	C
Temperature coefficient	3850 ppm/K	
Temperature dependence of resistivity	according to IEC 60751:	
	-50 °C to 0 °C $R(T) = R_0 \times (1+AxT + BxT^2 + Cx[T-100] \times T^3)$ 0 to +150 °C $R(T) = R_0 \times (1+AxT + BxT^2)$	
	$A = 3.9083 \times 10^{-3} \times °C^{-1}$, $B = -5.775 \times 10^{-7} \times °C^{-2}$ $C = -4.183 \times 10^{-12} \times °C^{-4}$ R_0= resistance value in Ω at 0°C T = temperature in accordance with ITS90	

General Specifications

Pads (soldering connection)	Soft-Termination galvanic tin plated with nickel barrier layer		
Soldering (according to J-STD-002E) see general notes 1.3	1. Solderability: Test A and A1 2. Resistance to soldering heat: Test A and A1		
Measuring current	Pt 100	Pt 500	Pt 1000
(Self-heating has to be considered)	1 mA	0.5 mA	0.3 mA
Long-term stability:	< 0.04 % at 1000 h at 130 °C		
Taping & Packaging (according to IEC 60286-3)	EIA-481 (for dimensions see general notes 1.2)		
Storage Property	12 months (original packaging and dry conditions)		
REACH + RoHs Compliance	Yes		
Special	Use in dry environment only		

General Notes

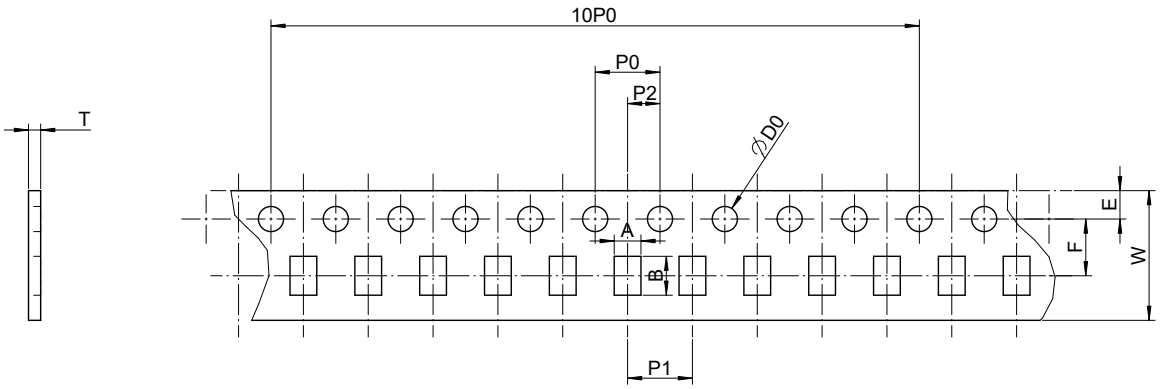
1.1 The thermal coefficient of expansion of the circuit board has to be considered.

1.2. IEC60751 tolerances (F0.15, F0.3 and F0.6) are classified by one temperature measurement.
TTemperature coefficient of SMD sensor is random sample determined in the measuring bath while the sensors were face-up soldered on a PCB board.

Accuracy, self-heating and response time might vary depending on the mounting method (e.g. face-down soldering or wire bonding), and the measuring conditions.

Furthermore, thermal expansion coefficient of the PCB must be considered within the operation temperature range, since it influences the accuracy level.

1.3 Taping and Packaging:



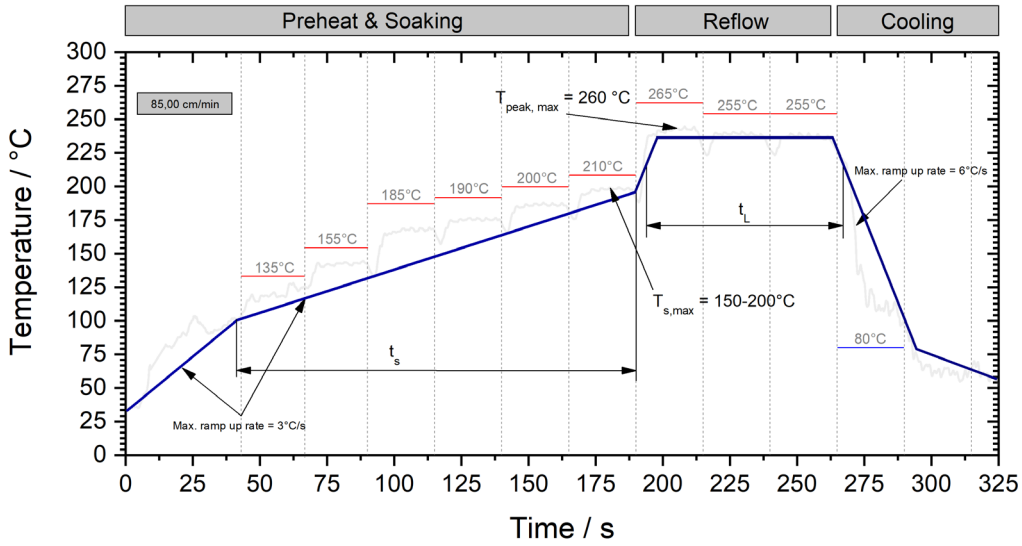
Item	A	B	W	E	F	P0	P1	P2	D0	T	10P0
Dimension	1.9	3.5	8.0	1.75	3.5	4.0	4.0	2.0	1.5	0.6	40.0
min. Tol.	-0.1	-0.1	-0.3	-0.1	-0.05	-0.1	-0.1	-0.05	-0.0	-0.1	-0.2
max. Tol.	+0.1	+0.1	+0.3	+0.1	+0.05	+0.1	+0.1	+0.05	+0.1	+0.1	+0.2

Dimensions in mm
Packaging unit in tape and reel, special variants, small quantities or other packaging unit are available on request.

1.4 Soldering and Reflow soldering profile:

For soldering IST AG recommends lead free solder paste (Material: SnAgCu 96.5/3.0/0.5) and a temperature characteristic (reflow profile) for reflow accoring to JEDEC J-STD-002E. The solderability was tested with following assembly conditions:

PCB Material FR4 (PCB Layer: 2)
PCB thickness: 1.6 mm
Dimensions: 72 x 32 mm
Solder Paste: KOKI «S3X58-M406» (Pb-free assembly)



Profile parameter	Temperature range / °C	Heating rate / °C/s	Time / s
Ramp to Preheat	RT to 150	1.9 - 3	
Preheat / Soak	$T_{s,min}$ = 100, $T_{s,max}$ = 200	1.9 - 3	$t_{s,min}$ = 60, $t_{s,max}$ = 160
Ramp to Peak	180 - 255	0.6	
Reflow	250 ± 5, $T_{peak, max}$ = 260		60 to 120, $t_{peak,max}$ = 30
Cooling	255 - RT	1.6 - 3	

*Temperature is measured on topside of PCB.

1.5 Important Notes:

- The solder or additional fluxes should be halogen-free, mild and non-activated.
- After soldering, a thorough cleaning with pH-neutral defluxing material is recommended.
- The profile has a significant impact on the solder joint performance, i.e. solderability, wettability and strength.
- The soak profile and all other data serve as a guideline and cannot be regarded as binding statements or guaranteed values. They serve as a starting point for process development. Specifically, a high mix of components or large board sizes might require the development of a different soldering profile.
- Long-term stability in the application and chemical resistance need to be approved by the customer.
- The customer is obliged to test and approve the suitability of IST AG sensors in the customer's application.

Order Information

Description	Tolerance class	Packaging type	Order number
Other tolerances, values of resistance are available on request			
Nominal resistance: 100 Ω at 0 °C			
P0K1.1206.2ST.A.S	IEC 60751 F0.15 (A)	taped only (sensor side up), no reel	155415
P0K1.1206.2ST.A	IEC 60751 F0.15 (A)	packed in bags	153288
P0K1.1206.2ST.A.S	IEC 60751 F0.15 (A)	taped on reel (sensor side up)	153303
P0K1.1206.2ST.A.S	IEC 60751 F0.15 (A)	taped on reel (sensor side down)	153481
P0K1.1206.2ST.B	IEC 60751 F0.3 (B)	packed in bags	153289
P0K1.1206.2ST.B.S	IEC 60751 F0.3 (B)	taped on reel (sensor side up)	153304
P0K1.1206.2ST.B.S	IEC 60751 F0.3 (B)	taped on reel (sensor side down)	153482
P0K1.1206.2ST.C	IEC 60751 F0.6 (C)	packed in bags	153290
P0K1.1206.2ST.C.S	IEC 60751 F0.6 (C)	taped on reel (sensor side up)	153305
P0K1.1206.2ST.C.S	IEC 60751 F0.6 (C)	taped on reel (sensor side down)	153483
Nominal resistance: 500 Ω at 0 °C			
P0K5.1206.2ST.A.S	IEC 60751 F0.15 (A)	taped only (sensor side up), no reel	155416
P0K5.1206.2ST.A	IEC 60751 F0.15 (A)	packed in bags	153296
P0K5.1206.2ST.A.S	IEC 60751 F0.15 (A)	taped on reel (sensor side up)	153476
P0K5.1206.2ST.A.S	IEC 60751 F0.15 (A)	taped on reel (sensor side down)	153495
P0K5.1206.2ST.B	IEC 60751 F0.3 (B)	packed in bags	153297
P0K5.1206.2ST.B.S	IEC 60751 F0.3 (B)	taped on reel (sensor side up)	153477
P0K5.1206.2ST.B.S	IEC 60751 F0.3 (B)	taped on reel (sensor side down)	153496
P0K5.1206.2ST.C	IEC 60751 F0.6 (C)	packed in bags	153301
P0K5.1206.2ST.C.S	IEC 60751 F0.6 (C)	taped on reel (sensor side up)	153478
P0K5.1206.2ST.C.S	IEC 60751 F0.6 (C)	taped on reel (sensor side down)	153498
Nominal resistance: 1000 Ω at 0 °C			
P1K0.1206.2ST.A.S	IEC 60751 F0.15 (A)	taped only (sensor side up), no reel	155417
P1K0.1206.2ST.A	IEC 60751 F0.15 (A)	packed in bags	153291
P1K0.1206.2ST.A.S	IEC 60751 F0.15 (A)	taped on reel (sensor side up)	153470
P1K0.1206.2ST.A.S	IEC 60751 F0.15 (A)	taped on reel (sensor side down)	153484
P1K0.1206.2ST.B	IEC 60751 F0.3 (B)	packed in bags	153293
P1K0.1206.2ST.B.S	IEC 60751 F0.3 (B)	taped on reel (sensor side up)	153472
P1K0.1206.2ST.B.S	IEC 60751 F0.3 (B)	taped on reel (sensor side down)	153485
P1K0.1206.2ST.C	IEC 60751 F0.6 (C)	packed in bags	153294
P1K0.1206.2ST.C.S	IEC 60751 F0.6 (C)	taped on reel (sensor side up)	153473
P1K0.1206.2ST.C.S	IEC 60751 F0.6 (C)	taped on reel (sensor side down)	153486

RoHS

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