



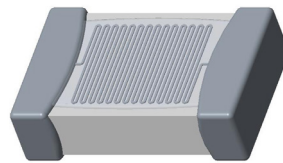
P_K_.0805.2ST. Platinum thin film RTD

For the automatic assembling on PCBs

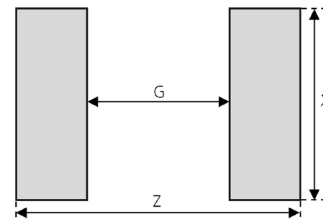
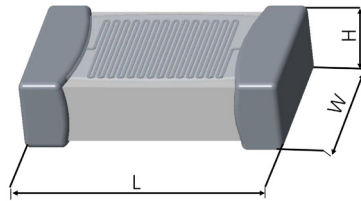
Benefits & Characteristics

- Excellent long-term stability and thermal cycling
- Low self-heating
- Fast response time

Product image



Illustration¹⁾



Dimensions

Dimensions in mm	L 2.0 ± 0.15	W 1.25 ± 0.15	H 0.5 ± 0.1
Land pattern in mm	Z 2.70	G 1.10	X 1.40

Technical Data

Electrical Specifications

Operating temperature range	-50 °C to +150 °C	
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
	with ITI = absolute value of temperature in °C	
Temperature coefficient	3850 ppm/K	
Temperature range	-50 °C to +150 °C (see general notes 1.1)	
Temperature dependence of resistivity	according to IEC 60751:	
	-50 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 x 10 ⁻³ x °C ⁻¹ , B = -5.775 x 10 ⁻⁷ x °C ⁻²	
	C = -4.183 x 10 ⁻¹² x °C ⁻⁴	
	R ₀ = resistance value in Ω at 0°C	
	T = temperature in accordance with ITS90	

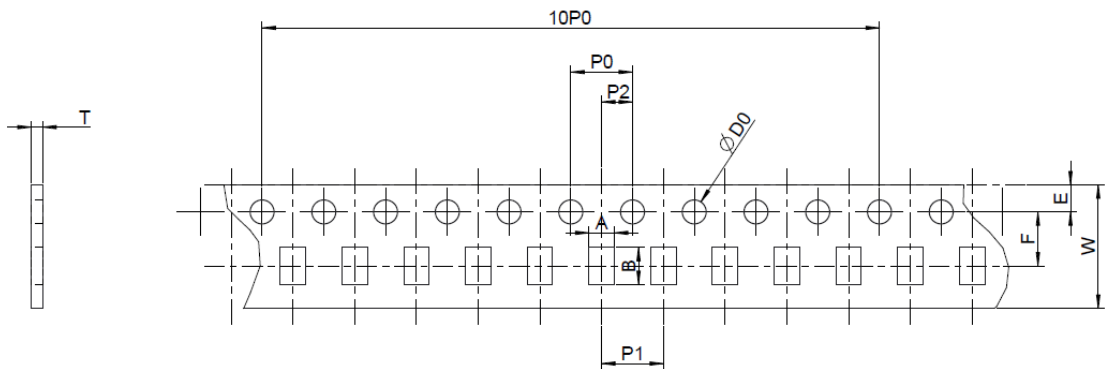


General Specifications

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 (Self-heating has to be considered)	Pt 100 1 mA	Pt 500 0.5 mA	Pt 1000 0.3 mA
Long-term stability:	< 0.04 % at 1000 h at 130 °C		
Taping & Packaging	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 Taping and Packaging:



Item	A	B	W	E	F	P0	P1	P2	D0	T	10P0
Dimension	1.65	2.4	8.0	1.75	3.5	4.0	4.0	2.0	1.55	0.75	40.0
min. Tol.	-0.05	-0.05	-0.1	-0.05	-0.05	-0.1	-0.1	-0.05	-0.05	-0.03	-0.1
max. Tol.	0.05	0.05	0.1	0.05	0.05	0.1	0.1	0.05	0.05	0.03	0.1

Dimensions in mm

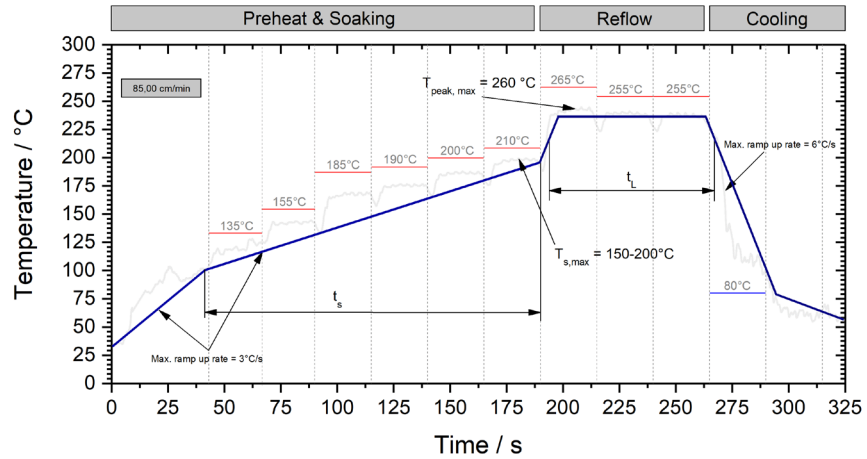
Packaging unit in tape and reel, special variants, small quantities or other packaging unit are available on request.



1.3 Soldering and Reflow profile

For soldering IST recommends lead free solder paste (Material: SnAgCu 96.5/3.0/0.5) and a temperature characteristic (reflow profile) for reflow soldering according to JEDEC J-STD-002E. The solderability was tested with following assem-bly 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	Time / s
Ramp to preheat	RT to 150	1.9 - 3	
Preaheat /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	$250 \pm 5, T_{peak,max} = 260$		60 to 120, $t_{peak,max} = 30$
Cooling	255 - RT	1.6 - 3	

1.4 Important notes:

- The solder or additional fluxes should be halogen-free, mild and non-activated.
- After soldering a proper cleaning with pH-neutral defluxing material is recommended.
- The profile has a signifacnt impact on the solder joint performance as solderability, wettability and strength.
- The soak profile and all other data serve as a guidelineand cannot be regarded as binding statements our guaranteed value. They serve as a starting point for process development.
- Especially, a hogh mix of components of large board sizes, might need to develop a different soldering profile.
- Long-term stability in the application and chemical resistance needs to be approved by the customer.
- Innovative Sensor Technology IST AG always incumbent on the customer to test and approve whether the IST AG product is suitable for a use particular customer 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

P0K1.0805.2ST.A	IEC 60751 F0.15 (A)	packed in bags	150043
P0K1.0805.2ST.A.S	IEC 60751 F0.15 (A)	taped on reel (sensor side up)	150034
P0K1.0805.2ST.A.S	IEC 60751 F0.15 (A)	taped on reel (sensor side down)	150044
P0K1.0805.2ST.B	IEC 60751 F0.3 (B)	packed in bags	152441
P0K1.0805.2ST.B.S	IEC 60751 F0.3 (B)	taped on reel (sensor side up)	150035
P0K1.0805.2ST.B.S	IEC 60751 F0.3 (B)	taped on reel (sensor side down)	152446
P0K1.0805.2ST.C	IEC 60751 F0.6 (C)	packed in bags	152445
P0K1.0805.2ST.C.S	IEC 60751 F0.6 (C)	taped on reel (sensor side up)	150036
P0K1.0805.2ST.C.S	IEC 60751 F0.6 (C)	taped on reel (sensor side down)	102022

Nominal resistance: 500 Ω at 0 °C

P0K5.0805.2ST.A	IEC 60751 F0.15 (A)	packed in bags	150045
P0K5.0805.2ST.A.S	IEC 60751 F0.15 (A)	taped on reel (sensor side up)	150040
P0K5.0805.2ST.A.S	IEC 60751 F0.15 (A)	taped on reel (sensor side down)	150048
P0K5.0805.2ST.B	IEC 60751 F0.3 (B)	packed in bags	150046
P0K5.0805.2ST.B.S	IEC 60751 F0.3 (B)	taped on reel (sensor side up)	150041
P0K5.0805.2ST.B.S	IEC 60751 F0.3 (B)	taped on reel (sensor side down)	150049
P0K5.0805.2ST.C	IEC 60751 F0.6 (C)	packed in bags	150047
P0K5.0805.2ST.C.S	IEC 60751 F0.6 (C)	taped on reel (sensor side up)	150042
P0K5.0805.2ST.C.S	IEC 60751 F0.6 (C)	taped on reel (sensor side down)	150050

Nominal resistance: 1000 Ω at 0 °C

P1K0.0805.2ST.A	IEC 60751 F0.15 (A)	packed in bags	150028
P1K0.0805.2ST.A.S	IEC 60751 F0.15 (A)	taped on reel (sensor side up)	150037
P1K0.0805.2ST.A.S	IEC 60751 F0.15 (A)	taped on reel (sensor side down)	150029
P1K0.0805.2ST.B	IEC 60751 F0.3 (B)	packed in bags	101865
P1K0.0805.2ST.B.S	IEC 60751 F0.3 (B)	taped on reel (sensor side up)	150038
P1K0.0805.2ST.B.S	IEC 60751 F0.3 (B)	taped on reel (sensor side down)	102023
P1K0.0805.2ST.B.S	IEC 60751 F0.3 (B)	taped only, sensor side up (not on reel)	150078
P1K0.0805.2ST.C	IEC 60751 F0.6 (C)	packed in bags	102020
P1K0.0805.2ST.C.S	IEC 60751 F0.6 (C)	taped on reel (sensor side up)	150039
P1K0.0805.2ST.C.S	IEC 60751 F0.6 (C)	taped on reel (sensor side down)	102024



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