



Platinum Temperature Sensors

4W – Product Series

Temperature Range: –200°C...+400°C

Platinum temperature sensors elements with wire connections

Technical Data

Specification:	DIN EN 60751
Temperature range:	-200°C to +400°C
Temperature Coefficient:	TCR = 3850 ppm/K
Tolerance Classes:	F 0.1 (Class Y) -50°C to +150°C F 0.15 (Class A) -90°C to +300°C F 0.3 (Class B) -200°C to +400°C F 0.6 (Class C) -200°C to +400°C 1/5 F 0.3 (Class K) on request 1/10 F 0.3 (Class K) on request
Leads:	Silver wire (Ø = 0.25 mm) Recommended connection technology: Soldering, Welding
Lead Lengths:	10 mm
Long-term stability:	Max. Drift = Less than 0.03% after 1000h at max. operating temperature
Note:	Other connection lengths on request



INNOVATIVE SENSOR TECHNOLOGY

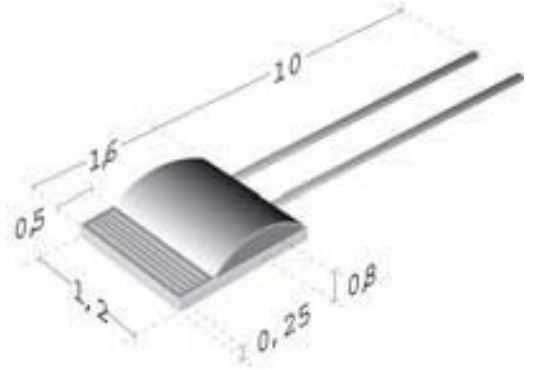
ISTAG, Industriestrasse 2, CH-9630 Wattwil, Switzerland, Phone (+)41 71 987 73 73, Fax (+)41 71 987 73 77
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4W – Product Series

Temperature Range: $-200^{\circ}\text{C} \dots +400^{\circ}\text{C}$

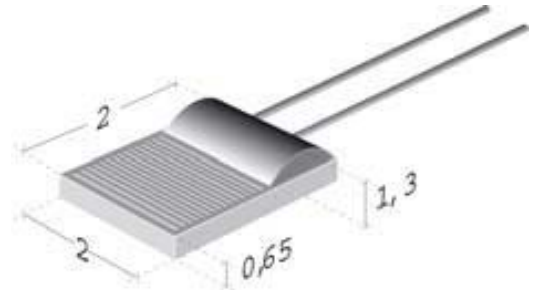
4W 161

Chip Dimensions, L x W:	1.6 x 1.2 mm	
Nominal Resistance at 0°C (ohm) :	100/500/1000	
Self Heating (mK):	Water (v= 0 m/s) Air (v= 0 m/s)	$\Delta T_w = 8.3$ at 0°C $\Delta T_a = 56$ at 0°C
Response Time (s):	Water (v= 0.4 m/s) Air (v= 1 m/s)	$T_{0.5} = 0.05$ $T_{0.63} = 0.08$ $T_{0.9} = 0.18$ $T_{0.5} = 1$ $T_{0.63} = 1.2$ $T_{0.9} = 2.5$
Measuring Current (mA):	100 Ω : 1 500 Ω : 0.5 1000 Ω : 0.3	



4W 202

Dimensions, LxW:	2.0 x 2.0 mm	
Nominal Resistance at 0°C (ohm):	100/500/1000/2000	
Self Heating (mK):	Water (v= 0 m/s) Air (v= 0 m/s)	$\Delta T_w = 3.1$ at 0°C $\Delta T_a = 31$ at 0°C
Response Time (s):	Water (v= 0.4 m/s) Air (v= 1 m/s)	$T_{0.5} = 0.11$ $T_{0.63} = 0.16$ $T_{0.9} = 0.38$ $T_{0.5} = 3.6$ $T_{0.63} = 4.9$ $T_{0.9} = 10.2$
Measuring Current (mA):	100 Ω : 1 500 Ω : 0.5 1000 Ω : 0.3 2000 Ω : 0.2	



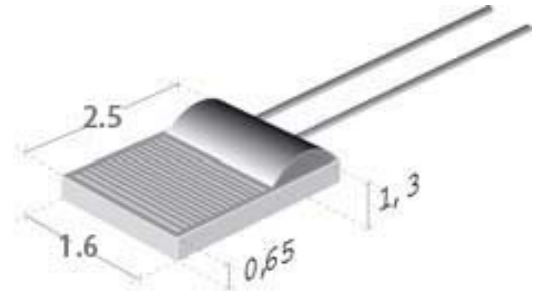
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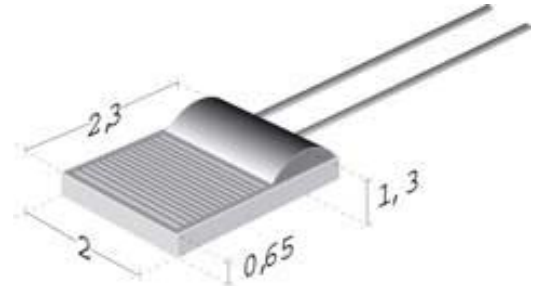
4W 216

Dimensions, LxW:	2.5 x 1.6 mm	
Nominal Resistance at 0°C (ohm):	100	
Self Heating (mK):	Water (v= 0 m/s)	$\Delta T_w = 2.8$ at 0°C
	Air (v= 0 m/s)	$\Delta T_a = 28$ at 0°C
Response Time (s):	Water (v= 0.4 m/s)	$T_{0.5} = 0.12$ $T_{0.63} = 0.18$ $T_{0.9} = 0.42$
	Air (v= 1 m/s)	$T_{0.5} = 4$ $T_{0.63} = 5.4$ $T_{0.9} = 11$
Measuring Current (mA):	100 Ω : 1	



4W 232

Dimensions, LxW:	2.3 x 2.0 mm	
Nominal Resistance at 0°C (ohm):	100/500/1000/2000	
Self Heating (mK):	Water (v= 0 m/s)	$\Delta T_w = 2.5$ at 0°C
	Air (v= 0 m/s)	$\Delta T_a = 25$ at 0°C
Response Time (s):	Water (v= 0.4 m/s)	$T_{0.5} = 0.15$ $T_{0.63} = 0.2$ $T_{0.9} = 0.55$
	Air (v= 1 m/s)	$T_{0.5} = 4.5$ $T_{0.63} = 6$ $T_{0.9} = 12$
Measuring Current (mA):	100 Ω : 1 500 Ω : 0.5 1000 Ω : 0.3 2000 Ω : 0.2	



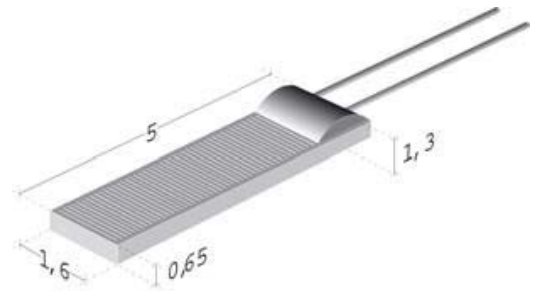
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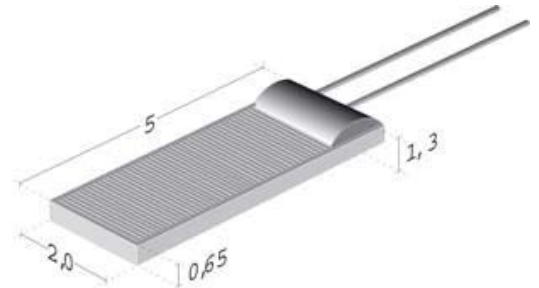
4W 516

Dimensions, LxW:	5.0 x 1.6 mm	
Nominal Resistance at 0°C (ohm):	100/500/1000/2000	
Self Heating (mK):	Water (v= 0 m/s) Air (v= 0 m/s)	$\Delta T_w = 1.3$ at 0°C $\Delta T_a = 14$ at 0°C
Response Time (s):	Water (v= 0.4 m/s) Air (v= 1 m/s)	$T_{0.5} = 0.25$ $T_{0.63} = 0.3$ $T_{0.9} = 0.7$ $T_{0.5} = 5.5$ $T_{0.63} = 7.5$ $T_{0.9} = 16$
Measuring Current (mA):	100 Ω : 1 500 Ω : 0.5 1000 Ω : 0.3 2000 Ω : 0.2	



4W 520

Dimensions, LxW:	5.0 x 2.0 mm	
Nominal Resistance at 0°C (ohm):	100/500/1000/ 10,000	
Self Heating (mK):	Water (v= 0 m/s) Air (v= 0 m/s)	$\Delta T_w = 1.3$ at 0°C $\Delta T_a = 14$ at 0°C
Response Time (s):	Water (v= 0.4 m/s) Air (v= 1 m/s)	$T_{0.5} = 0.25$ $T_{0.63} = 0.3$ $T_{0.9} = 0.75$ $T_{0.5} = 6$ $T_{0.63} = 8.5$ $T_{0.9} = 18$
Measuring Current (mA):	100 Ω : 1 500 Ω : 0.5 1000 Ω : 0.3 10,000 Ω : 0.1	



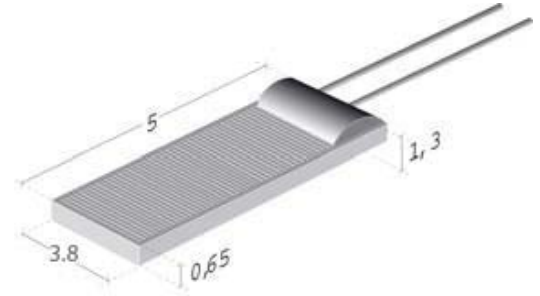
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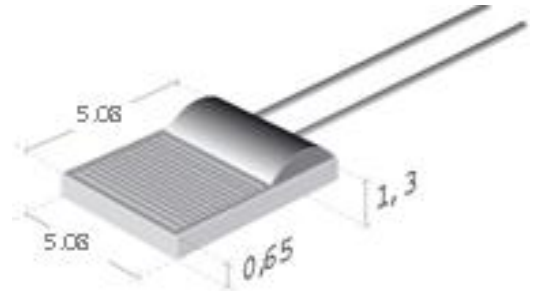
4W 538

Dimensions, LxW:	5.08 x 3.81 mm	
Nominal Resistance at 0°C (ohm):	100/1000	
Self Heating (mK):	Water (v= 0 m/s) Air (v= 0 m/s)	$\Delta T_w = 0.7$ at 0°C $\Delta T_a = 10$ at 0°C
Response Time (s):	Water (v= 0.4 m/s) Air (v= 1 m/s)	$T_{0.5} = 0.35$ $T_{0.63} = 0.4$ $T_{0.9} = 0.9$ $T_{0.5} = 7.5$ $T_{0.63} = 10$ $T_{0.9} = 20$
Measuring Current (mA):	100 Ω : 1 1000 Ω : 0.3	



4W 505

Dimensions, LxW:	5.08 x 5.08 mm	
Nominal Resistance at 0°C (ohm):	100/1000	
Self Heating (mK):	Water (v= 0 m/s) Air (v= 0 m/s)	$\Delta T_w = 0.7$ at 0°C $\Delta T_a = 9$ at 0°C
Response Time (s):	Water (v= 0.4 m/s) Air (v= 1 m/s)	$T_{0.5} = 0.4$ $T_{0.63} = 0.5$ $T_{0.9} = 1.1$ $T_{0.5} = 8$ $T_{0.63} = 11$ $T_{0.9} = 21$
Measuring Current (mA):	100 Ω : 1 1000 Ω : 0.3	



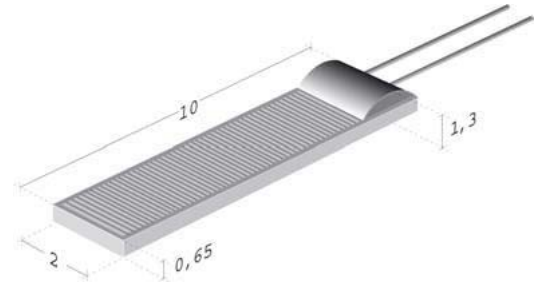
INNOVATIVE SENSOR TECHNOLOGY

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4W 102

Dimensions, LxW:	10.0 x 2.0 mm	
Nominal Resistance at 0°C (ohm):	100/500/1000	
Self Heating (mK):	Water (v= 0 m/s) Air (v= 0 m/s)	$\Delta T_w = 0.7$ at 0°C $\Delta T_a = 10$ at 0°C
Response Time (s):	Water (v= 0.4 m/s) Air (v= 1 m/s)	$T_{0.5} = 0.33$ $T_{0.63} = 0.4$ $T_{0.9} = 0.85$ $T_{0.5} = 7.5$ $T_{0.63} = 10.5$ $T_{0.9} = 20$
Measuring Current (mA):	100 Ω: 1 500 Ω: 0.5 1000 Ω: 0.3	



Order Example: **P** 1**K0.** 2**32.** 4 **W.** **B.** 0**10**
 1 2 3 4 5 6 7

1. Material Identification = Platinum temperature sensor
2. Resistance Value in ohm = 1000Ω / 0°C
3. Chip Dimension = 2.3 x 2.0 mm
4. Temperature Range = -200 °C to +400°C
5. Extension = Wire Connections
6. Tolerance Class = DIN EN 60751 F 0.3 (former Class B)
7. Connection length = 10 mm



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