



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 ($\varnothing = 0.25$ 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	



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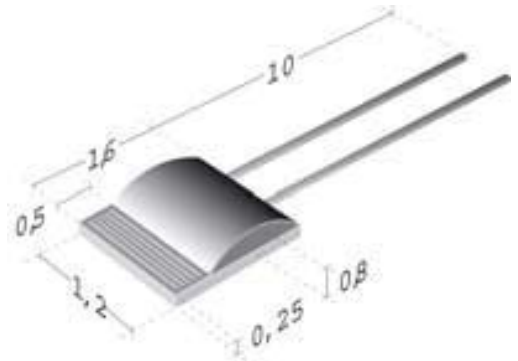
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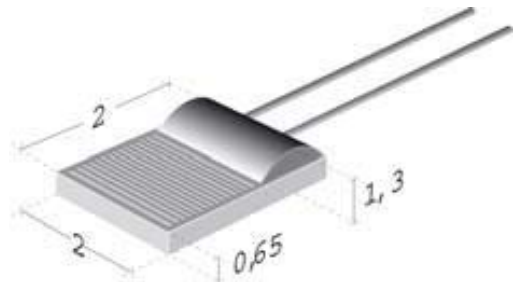
4W 161

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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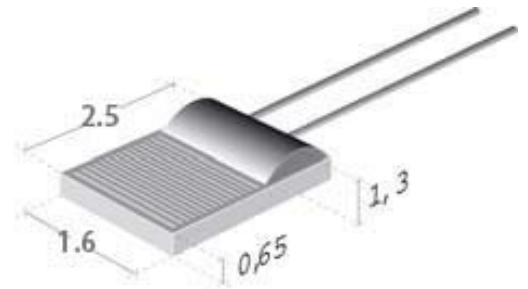
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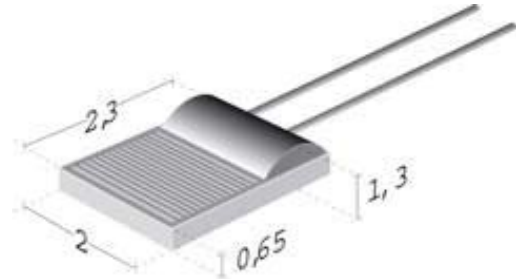
4W 216

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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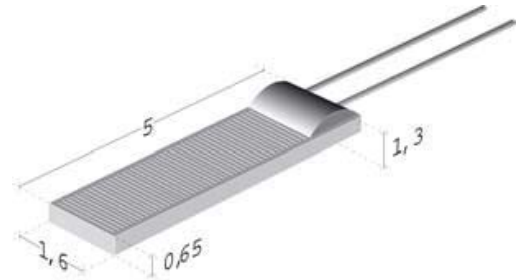
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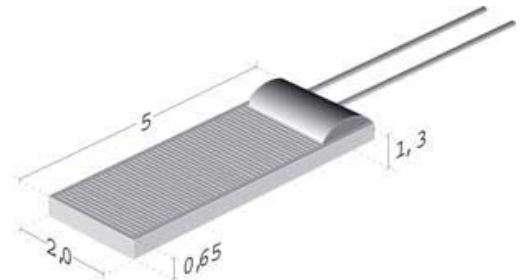
4W 516

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)	$\Delta T_w = 1.3$ at 0°C
	Air (v= 0 m/s)	$\Delta T_a = 14$ at 0°C
Response Time (s):	Water (v= 0.4 m/s)	$T_{0.5} = 0.25$
		$T_{0.63} = 0.3$
		$T_{0.9} = 0.7$
	Air (v= 1 m/s)	$T_{0.5} = 5.5$
		$T_{0.63} = 7.5$
		$T_{0.9} = 16$
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)	$\Delta T_w = 1.3$ at 0°C
	Air (v= 0 m/s)	$\Delta T_a = 14$ at 0°C
Response Time (s):	Water (v= 0.4 m/s)	$T_{0.5} = 0.25$
		$T_{0.63} = 0.3$
		$T_{0.9} = 0.75$
	Air (v= 1 m/s)	$T_{0.5} = 6$
		$T_{0.63} = 8.5$
		$T_{0.9} = 18$
Measuring Current (mA):	100 Ω :	1
	500 Ω :	0.5
	1000 Ω :	0.3
	10,000 Ω :	0.1



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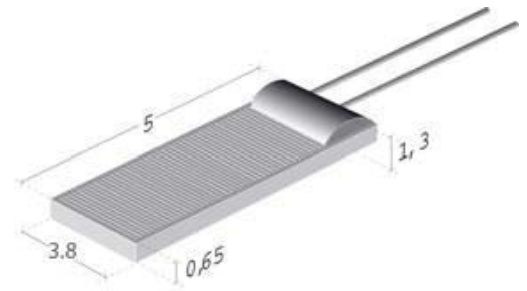
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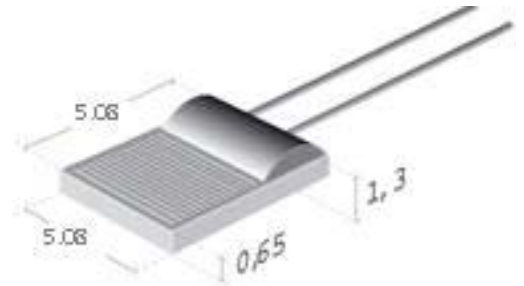
4W 538

Dimensions, LxW:	5.08 x 3.81 mm	
Nominal Resistance at 0°C (ohm):	100/1000	
Self Heating (mK):	Water (v= 0 m/s)	$\Delta T_w = 0.7$ at 0°C
	Air (v= 0 m/s)	$\Delta T_a = 10$ at 0°C
Response Time (s):	Water (v= 0.4 m/s)	$T_{0.5} = 0.35$
		$T_{0.63} = 0.4$
		$T_{0.9} = 0.9$
	Air (v= 1 m/s)	$T_{0.5} = 7.5$
		$T_{0.63} = 10$
		$T_{0.9} = 20$
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)	$\Delta T_w = 0.7$ at 0°C
	Air (v= 0 m/s)	$\Delta T_a = 9$ at 0°C
Response Time (s):	Water (v= 0.4 m/s)	$T_{0.5} = 0.4$
		$T_{0.63} = 0.5$
		$T_{0.9} = 1.1$
	Air (v= 1 m/s)	$T_{0.5} = 8$
		$T_{0.63} = 11$
		$T_{0.9} = 21$
Measuring Current (mA):	100 Ω :	1
	1000 Ω :	0.3



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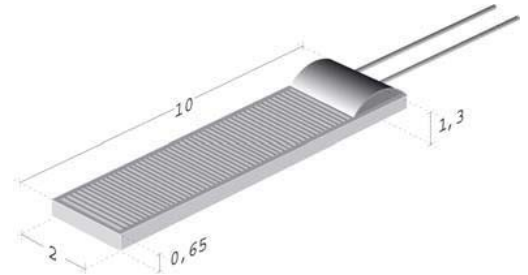
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4W 102

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)	$\Delta T_w = 0.7$ at 0°C
	Air (v= 0 m/s)	$\Delta T_a = 10$ at 0°C
Response Time (s):	Water (v= 0.4 m/s)	$T_{0.5} = 0.33$
		$T_{0.63} = 0.4$
		$T_{0.9} = 0.85$
	Air (v= 1 m/s)	$T_{0.5} = 7.5$
		$T_{0.63} = 10.5$
		$T_{0.9} = 20$
Measuring Current (mA):	100 Ω :	1
	500 Ω :	0.5
	1000 Ω :	0.3



Order Example: **P** **1K0.** **232.** **4** **W.** **B.** **010**
 1 2 3 4 5 6 7

1. Material Identification = Platinum temperature sensor
2. Resistance Value in ohm = 1000 Ω / 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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