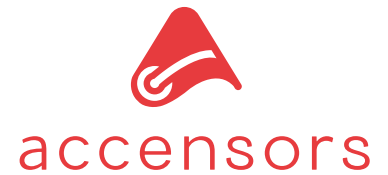


Datasheet (preliminary)

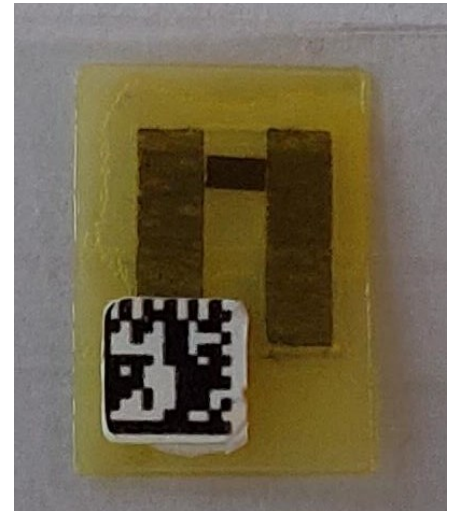
SMD foil temperature electrode Tp01



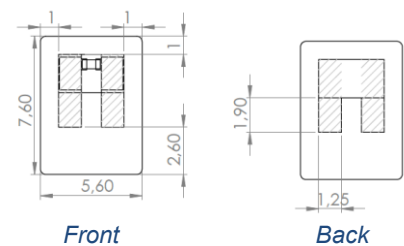
The SMD foil temperature electrode Tp01 is designed for determination of the temperature using a 4-wire-measurement setup.

The readings are taken by applying a constant current of less than 1 mA and measuring the voltage, which changes due to the temperature dependent change of the electrical resistance.

A 2-wire-measurement is also possible but might lead to less accurate results due to resistance of the connection leads (not part of the SMD foil temperature electrode).



Technical Data	
Dimensions	L x W in mm
Whole sensor foil	7.6 x 5.6
Connection pad (per pad)	1.9 x 1.25
Change in resistance	~ 2.6 Ω / °C
Set-up time (time till stable output)	~ 2 min
Response time (t ₉₀)	< 30 sec
Lifetime (in use)	t.b.d.

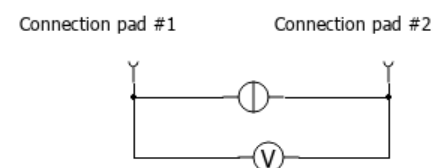


TRL 7



MRL 7

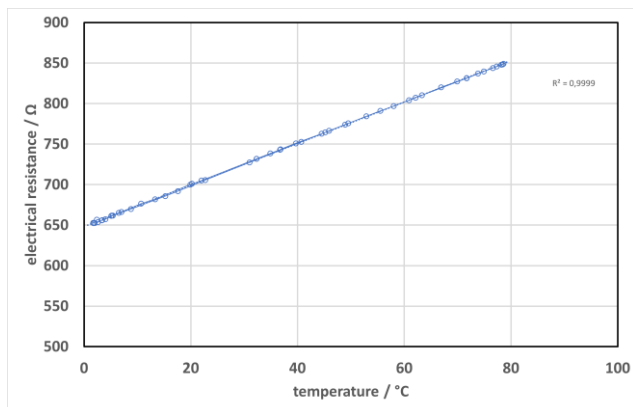
All mechanical dimensions are valid at 25 °C ambient temperature, if not differently indicated. All data except the mechanical dimensions only have information purposes and are not to be understood as assured characteristics. Technical changes without previous announcement as well as mistakes reserved. Load with extreme values during a longer period can affect the reliability. Typing errors and mistakes reserved. Product specifications are subject to change without notice.



Schematic example for a measuring circuit using a 4-wire-setup

Datasheet (preliminary)

SMD foil temperature electrode Tp01



Example output: electrical resistance dependency of the temperature and linear approximation



Technology Readiness Level

TRL 0	TRL 1	TRL 2	TRL 3	TRL 4	TRL 5	TRL 6	TRL 7	TRL 8	TRL 9	
Idea unproven concept no testing has been performed.	Problem Solving Core principles are explored and observed but no experimental proof available.	Concept Generation Concept & application have been explored.		Proof of concept Prototype Testing done on core mechanisms and function	Rough Working-Prototype Tested in intended environment	Prototype Field Trials Tested in intended environment close to expected performance	Pre-Production Prototype Operating in operational environment at precommercial scale.	First Production Runs Manufacturing issues solved.	Full Commercial-Production Technology available for consumers.	
	<ul style="list-style-type: none"> Concepts identified Research carried out and refined Technology development Identify material concerns 			<ul style="list-style-type: none"> Early indications of materials identified Manufacturing feasibility determined Manufacturing processes identified 	<ul style="list-style-type: none"> Characteristics identified Early supply chain assessment 	<ul style="list-style-type: none"> Initial trade studies Quality thresholds established 	<ul style="list-style-type: none"> Assessed supply chain BOM in development Materials being tested Demonstrate supply chain BOM Draft 	<ul style="list-style-type: none"> Establish multiple sources Pilot line builds validated Materials proven Quality characteristics validated BOM finalised 	<ul style="list-style-type: none"> Continous process improvements Materials in control Quality validated with LRIP articles Make/buy supports 	<ul style="list-style-type: none"> Monitor and manage all key characteristics at a Six Sigma level
	<p>Prior Consultancy Knowledge As a consultancy, having worked on successful solutions for many industries, the first 3 manufacturing readiness levels are tackled and kept in mind by our early sage product-development stages.</p>			<p>Small Scale Prototype Crude prototypes to test technology</p>	<p>Refine Manufacturing Strategy Identification of enabling technologies and components.</p>	<p>Prototype Development Manufacturing processes have been defined but requires design for manufacturing</p>	<p>Design for Manufacturing Manufacturing detailing is underway.</p>	<p>Pilot Line Demonstration Manufacturing processes are proved</p>	<p>Manufacturing Production Getting the quality, costs and performance on target.</p>	<p>Manufacturing Management Applied Six Sigma to the production</p>
	MRL 1	MRL 2	MRL 3	MRL 4	MRL 5	MRL 6	MRL 7	MRL 8	MRL 9	MRL 10

LEVEL EXIT CRITERIA



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Manufacturing Readiness Level