



TSic 503 TO92 5V

Temperature Sensor IC

For a fully calibrated and very accurate low power temperature measurement

Benefits & Characteristics

- Fully calibrated
- Outstanding accuracy of ±0.1 K
- Very low power consumption

Illustration

Excellent long-term stability

L

Accuracy range of 40 K can be shifted (default: +5 °C to +45 °C)

L2

Technical Data

Dimensions (L / L2 x W x H in mm): 2)	17.30 / 3.81 x 4.57 x 2.3
Operating temperature range:*	-10 °C to +60 °C (-7 °C to +57 °C guaranteed)
Accuracy:*	\pm 0.1 K in the range of +5 °C to +45 °C
Resolution:*	0.034 K
Sampling rate:*	10 Hz
Supply voltage:	$V_{_{dd}}$ = 3 V to 5.5 V, high precision operation in range $V_{_{dd}}$ = 4.5 V to 5.5 V
Supply current:	typ. 30 μ A at 25 °C and V _{dd} = 3.3 V for minimal self-heating
Packaging:*	ТО92
Output signal:	Ratiometric - see application note ATTSic_E
2) For tolerances, see Application Note	

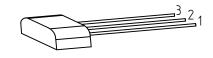


physical. chemical. biological.

Product Photo



Pin Assignment



	Pin 1	Pin 2	Pin 3
ТО92	GND	Signal	V_{dd} , Supply voltage (3 V to 5.5 V)

Absolute maximal ratings

	Min	Max
Supply voltage (V_{dd})	-0.3 V	6 V
Voltages to analog I/O – Pins (V_{SIG} , V_{GND})	-0.3 V	V _{dd} +0.3 V
Storage temperature range (T _{stor})	-10 °C	+60 °C
Non-operating temperature range		

Operating conditions

	Min	Тур	Max
Supply voltage to GND (V ⁺)	2.97 V	5 V	5.5 V
Supply current (I _{vdd}) at V _{dd} = 3.3 V, RT	25 μΑ	30 µA	60 µA
Operating temperature range (T _{amb})	-10 °C		+60 °C
Output load capacitance (C _L)			15 nF
External capacitance between $V_{\rm dd}$ and ${\rm GND^{1)}}$	100 nF (recommer	nded)	
Output load resistance between signal and GND (or $V_{\rm dd}$	47 kΩ		

 $^{\mbox{\tiny 1)}}$ Recommended as close to TSic $V_{\mbox{\tiny dd}}$ and GND-Pins as possible



physical. chemical. biological.



Temperature accuracies²⁾

T1: +5 °C to +45 °C	±0.1 K
T2: -10 °C to +60 °C	±0.2 K

²⁾ The sensor is calibrated at 5 V. The provided accuracy is applicable for a supply voltage between 4.5 V and 5.5 V. The accuracy is smaller with a supply voltage between 2.97 V and 4.5 V. For applications where the best accuracy at 3 V is requested, ask for a custom specific, 3 V calibrated device. Other TSic products with custom specific calibrations are available upon request e.g. other temperature range for high accuracy. Accuracy at delivery; the assembly method can influence the accuracy!

Order Information		
Description:	Item number:	Former main reference:
TSic 503 TO92 5V	103519	030.00115
Additional Documents		
	Document name:	
Application Note:	ATTSIC_E	



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