



## TSic 206

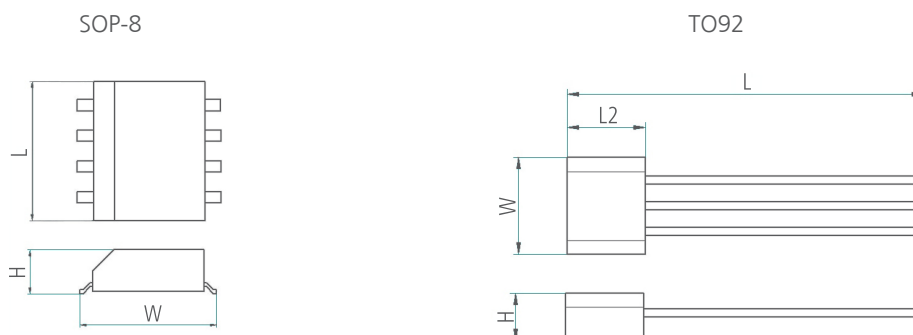
### Temperature Sensor IC

For a fully calibrated and accurate low power temperature measurement

#### Benefits & Characteristics

- Fully calibrated
- Very low power consumption
- Accuracy of  $\pm 0.5$  K
- Excellent long-term stability
- Accuracy range of 80 K can be shifted (default: +10 °C to +90 °C)

#### Illustration



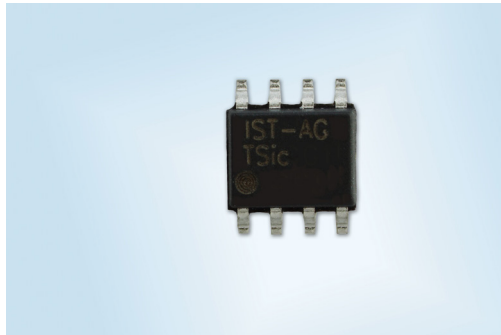
#### Technical Data

Dimensions (L / L2 x W x H in mm): <sup>2)</sup>	SOP-8	4.93 x 5.99 x 1.63
	TO92	17.30 / 3.81 x 4.57 x 2.3
Operating temperature range:*	-50 °C to +150 °C (-47 °C to +147 °C guaranteed)	
Accuracy:*	$\pm 0.5$ K in the range of +10 °C to +90 °C	
Resolution:*	0.1 K	
Sampling rate:*	10 Hz	
Supply current:	typ. 30 $\mu$ A at 25 °C and $V_{dd} = 3.3$ V for minimal self-heating	
Packaging:*	SOP-8 or TO92	
Output signal:	Digital - see application note ATTSic_E	

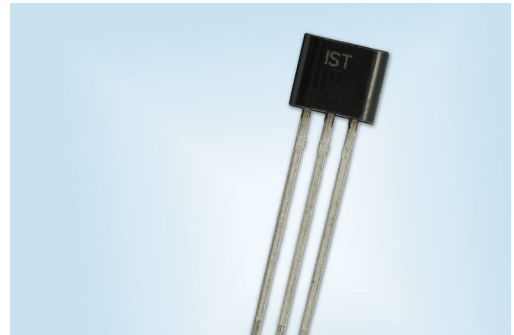
2) For tolerances, see Application Note



## Product Photo

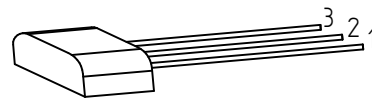
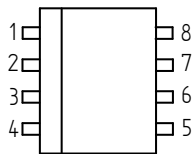


SOP-8



TO92

## Pin Assignment



	Pin 1	Pin 2	Pin 3	Pin 4
SOP-8 (3, 5, 6, 7 and 8 not connected)	$V_{dd}$ Supply voltage (3 V to 5.5 V)	Signal		GND
TO92	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 ( $T_{STOR}$ )	-20 °C	+80 °C
Non-operating temperature range	-50 °C	+150 °C

## Operating conditions

	Min	Typ	Max
Supply voltage to GND ( $V_{dd}$ )	2.97 V	5 V	5.5 V
Supply current ( $I_{V_{dd}}$ ) at $V_{dd} = 3.3$ V, RT	25 $\mu$ A	30 $\mu$ A	60 $\mu$ A
Operating temperature range ( $T_{amb}$ )	-50 °C		+150 °C
Output load capacitance ( $C_L$ )			15 nF
External capacitance between $V_{dd}$ and GND <sup>1)</sup>	100 nF (recommended)		
Output load resistance between signal and GND (or $V_{dd}$ )	47 k $\Omega$		

<sup>1)</sup> Recommended as close to TSic  $V_{dd}$  and GND-Pins as possible



## Temperature accuracies<sup>2)</sup>

T1: +10 °C to +90 °C	±0.5 K
T2: -20 °C to +110 °C	±1 K
T3: -50 °C to +150 °C	±2 K

<sup>2)</sup> 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 206 SOP-8	103482	030.00005
TSic 206 TO92	103494	030.00049

## Additional Note:

Application Note:	Document name:
	ATTSIC_E

