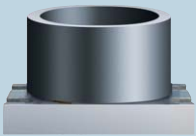




Product Brief 2009



Pressure Sensor Chips

for Barometric Measurements in Consumer Applications

The **C33** pressure-sensor chip is a miniaturized expansion of the versatile C32 series and is specially designed for use in high volume applications. The new chip requires no glass substrate for absolute barometric pressure measurements. The result is a very flat insertion height of only 0.4 mm at a footprint of 1 x 1 mm². Optimized for pressure measurements of between 300 and 1200 mbar, it reaches typical nonlinearities of only 0.2% FS at a sensitivity of 20 mV/V/bar.

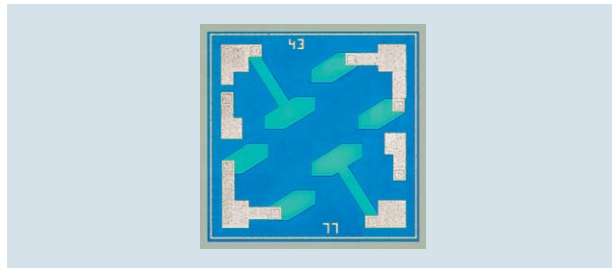
To permit simple processing, two SMD-capable packaged versions of the pressure-sensor chip are available:

The **ASB1200E** pressure transducer with a footprint of 3 x 3 mm² and a height of 1.7 mm protects the C33 chip from moisture thanks to a gel film in a specifically developed package.

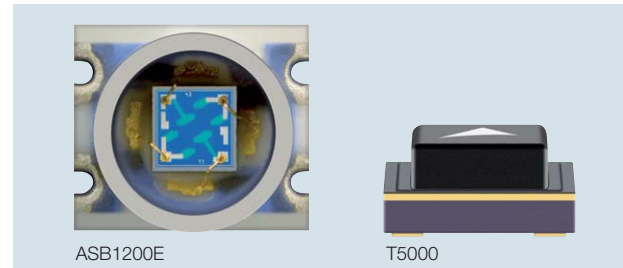
The **T5000** in a CSMP™ package with dimensions of 1.7 x 1.7 x 0.9 mm³ represents an innovation in the miniaturization of barometric pressure transducers and is particularly suitable for automated production.

The **ASB1200E** and **T5000** give new scope to future equipment generations, especially in the sector of portable electronics. Thus, watches, mobile phones or navigation systems can be used to measure the altitude via the air pressure.

Technical Data



Pressure sensor chip C33

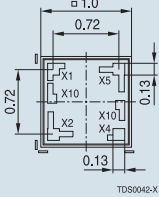
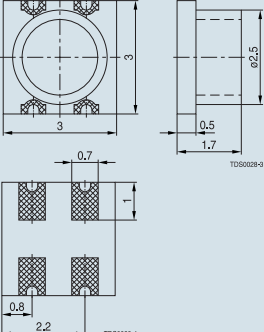
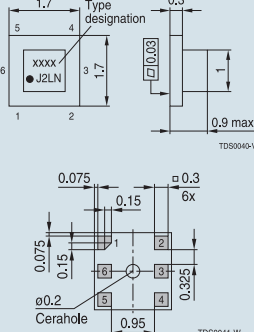


ASB1200E

T5000

Transducer ASB1200E in SMD package and T5000 in CSMP™ technology

Characteristics

Pressure measurement	Absolute	Absolute	Absolute
Measurement media	Inert gases	Humid inert gases	Inert gases
Output signal	mV, not calibrated, not temperature-compensated		
Pressure from	Front side	Front side	Front side
Construction / type	C33 	ASB1200E 	T5000 

Dimensions

Chip size / footprint	mm	1 x 1	3 x 3	1.7 x 1.7
Total height (max.)	mm	0.4	1.7	0.9
Flange diameter	mm	–	2.5	–

Maximum ratings

Storage temperature T_{st}	°C	-40 ... +150	-40 ... +125	-40 ... +125
Operating temperature T_a	°C	-40 ... +135	-40 ... +85	-40 ... +85
Supply voltage (max.) V_{DD}	V	10	10	10

Temperature characteristics $V_{DD} = 5 V$

Temperature coefficients α_{RS} of the bridge resistance (typ.) β_{RS}	$10^{-3}/K$ $10^{-6}/K^2$	2.4 6.0	2.4 6.0	2.4 6.0
Temperature coefficients α_{RS} of the bridge sensitivity (typ.) β_S	$10^{-3}/K$ $10^{-6}/K^2$	2.0 6.0	2.0 6.0	2.0 6.0

Characteristics $T_a = 25 ^\circ C, V_{DD} = 5 V$

Bridge resistance (min./max.) R_S	k Ω	2.6 ... 4.0	2.6 ... 4.0	2.6 ... 4.0
Offset voltage (min./max.) V_0	mV	-25 ... +50	-25 ... +50	-25 ... +50
Nonlinearity (typ.) L	%FS	0.2	0.2	0.2
Output span (typ.) V_{SP}	mV	120	120	120
Rated pressure p_r	bar	1.2	1.2	1.2
Soldering temperature	°C	–	260; 10 s	260; 10 s
Ordering code		Upon request	Upon request	Upon request

Important information: Some parts of this publication contain statements about the suitability of our products for certain areas of application. These statements are based on our knowledge of typical requirements that are often placed on our products. We expressly point out that these statements cannot be regarded as binding statements about the suitability of our products for a particular customer application. It is incumbent on the customer to check and decide whether a product is suitable for use in a particular application. This publication is only a brief product survey which may be changed from time to time. Our products are described in detail in our data sheets. The Important Notes (www.epcos.com/ImportantNotes) and the product-specific warnings and cautions must be observed. All relevant information is available through our sales offices.