

### General description

HPSD 6000 is a barometric pressure transducer. Signal conditioning consist of complete temperature compensation and adjusted amplifier in single, programmable ASIC. High performance and accuracy enables use of this transducer in many applications. Programmable temperature compensation provides 1% total error over -10 to 85°C temperature range. Transducer packed in compact package has been designed for a typical supply voltage of 5 V and an operating temperature range -40 to +125°C, covering commercial, industrial and automotive applications.

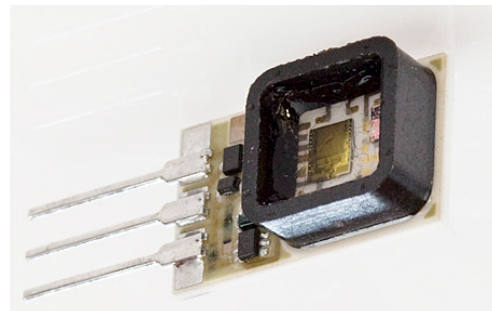
The model HPSD 6000 is designed for THT mount assembly for pressure range 1 bar absolute.

### Features

- Single 5 V supply voltage
- Easy to use package
- Standard 0.5 to 4.5 V voltage output
- Digital I2C output available
- Wide compensated range (-10 to 85°C)
- Total accuracy 1% over (-10 to 85°C), all effects included (maximum)
- High performance OEM applications
- Absolute pressure configuration

### Applications

- Altimeters
- Medical instrumentation
- Air pressure sensing
- Process control



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## Types overview

Pressure range	650 to 1150 mbar	750 to 1100 mbar	800 to 1200 mbar	700 to 1300 mbar
ID group	HPSD 6000-650M	HPSD 6000-750M	HPSD 6000-800M	HPSD 6000-700M
V <sub>OUT</sub>	0.5 to 4.5 V	0.5 to 4.5 V	0.5 to 4.5 V	0.5 to 4.5 V
Temp. ranges	Operating: -40 to 125°C Compensated: -10 to 85°C Storage: -40 to 125°C			
Over pressure <sup>1)</sup>	3 bar	3 bar	3 bar	3 bar
Burst pressure <sup>2)</sup>	5 bar	5 bar	5 bar	5 bar

## Performance characteristics

$$T_{AMB} = 25^{\circ}\text{C}$$

$$V_{CC} = 5 \text{ V, unless otherwise noted}$$

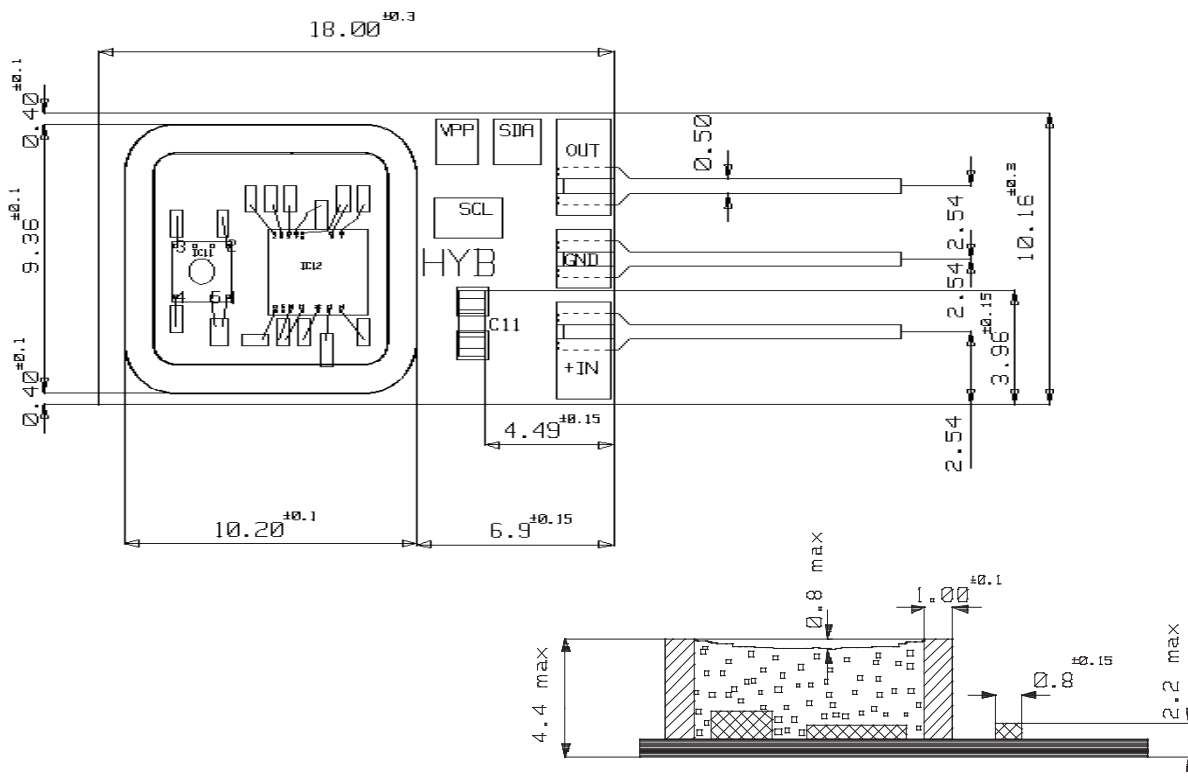
Parameter	Symbol	Min.	Type	Max.	Unit
<b>Power supply</b>					
Supply voltage	V <sub>CC</sub>	4.75		5.25	V
Current consumption	I <sub>CC</sub>		4	6.5	mA
<b>Analog output (pressure) <sup>3)</sup></b>					
Offset voltage <sup>4)</sup>	V <sub>O</sub>	0.45	0.50	0.55	V
Full scale output (FSO) <sup>5)</sup>	V <sub>FS</sub>	4.45	4.50	4.55	V
Full scale span (FSS) <sup>6)</sup>	V <sub>FSO</sub>	3.95	4.00	4.05	V
Accuracy (pressure) @ 25°C <sup>8)</sup>	E <sub>a</sub>			±0.8	%FSO
Total accuracy (pressure) @ -10 to 85°C <sup>9)</sup>	E <sub>t</sub>			±1	%FSO
Repeatability <sup>10)</sup>	E <sub>r</sub>		±0.05		% FSO
Nonlinearity & pressure hysteresis (BFSL) <sup>11)</sup>	E <sub>l</sub>		±0.1	±0.3	% FSO
Load resistance	R <sub>L</sub>	2		∞	k
Media compatibility		See spec. note <sup>11)</sup>			
Weight	W		9		g

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### Specification notes

- 1) Over pressure is the maximum pressure which may be applied without causing damage to the sensing element.
- 2) Burst pressure is the maximum pressure which may be applied without causing leakage damage to the sensing element.
- 3) Analog output signal is ratiometric to power supply  $V_{cc}$ , digital signal is not ratiometric to the power supply.
- 4) Offset voltage is the voltage output at zero pressure.
- 5) Full scale output is the voltage output at full pressure range.
- 6) Full scale span is the algebraic difference between the output at full scale pressure range and offset.
- 7) Accuracy includes all effects (offset, span, nonlinearity, pressure hysteresis and repeatability) at room temperature and represents maximum deviation of transducer signal from ideal characteristic.
- 8) Total accuracy includes all effects (offset, span, nonlinearity, pressure hysteresis and repeatability) included with all temperature effects of offset and span. It describes overall error and represents maximum deviation of transducer signal from ideal characteristic in compensated temperature range from 0 to 70°C.
- 9) Repeatability is defined as typical deviation of the output signal after 10 pressure cycles.
- 10) Nonlinearity is defined as the BFSL (best fit straight line) across entire pressure range.
- 11) Media compatibility: clean, dry and noncorrosive gases to silicon, RTV, ceramics  $Al_2O_3$ , epoxy, polymer.

### Outline dimensions and pinout



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**Ordering guide**

Transducer type	Pressure range	Pressure type
HPSD 6000	650M	A
	750M	
	800M	
	700M	

Pressure range	
650M	650 to 1150 mbar
750M	750 to 1100 mbar
800M	800 to 1200 mbar
700M	700 to 1300 mbar

Pressure type	
A	Absolute

Other configurations possible on special request.

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