

HPSA 1000 Pressure Transducer

General description

Pressure transducer model HPSA 1000 is a SMT pressure sensing device with close bridge configuration for mounting on PCB board or other substrate.

High performance and accuracy enables use of this transducer in many applications, and with its compact and handy design is very suitable for users. This transducer is suitable for any type of application with dry air or non-corrosive gases.

The model HPSA 1000 family consists of pressure ranges from 50 mbar up to 7 bar.

Features

- Low cost
- Easy to use package – SMD (surface mount device)
- Compact and light weight
- High sensitivity
- High-performance, stable silicon chip and package
- Industrial temperature operating range (-25 to 85°C)
- Gage and absolute configurations

Applications

- Medical instrumentation
- Respirators
- Air flow monitoring
- Process control
- Leak detection
- Pneumatic controls
- Altimeters



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HPSA 1000 Pressure Transducer

Types overview

 $T_{AMB} = 25^{\circ}\text{C}$
 $V_{CC} = 5\text{ V}$, unless otherwise noted

Pressure range	10 mbar (0,15 psi)	20 mbar (0,3 psi)	50 mbar (0,8 psi)	100 mbar (1,5 psi)
ID group	HPSA 1000-010M	HPSA 1000-020M	HPSA 1000-50M	HPSA 1000-100M
V_{OUT}	30 to 80 mV	30 to 80 mV	30 to 80 mV	30 to 80 mV
$V_{OFS(MAX)}$	-90 mV +25 mV	-90 mV +25 mV	-90 mV +25 mV	-90 mV +25 mV
Temp. ranges	Operating: -25 to 85°C Storage : -40 to 125°C			
Over pressure	100 mbar	200 mbar	500 mbar	1 bar
Burst pressure	150 mbar	300 mbar	750 mbar	1.5 bar

Pressure range	350 mbar (5 psi)	1 bar (15 psi)	2 bar (30 psi)	4 bar (60 psi)	7 bar (100 psi)
ID group	HPSA 1000-350M	HPSA 1000-001B	HPSA 1000-002B	HPSA 1000-004B	HPSA 1000-007B
$V_{OUT}^{3)}$	30 to 80 mV	90 to 150 mV	90 to 150 mV	90 to 150 mV	120 to 180 mV
$V_{OFS(MAX)}^{3,4)}$	-90 mV +25 mV	-90 mV +25 mV	-90 mV +25 mV	-90 mV +25 mV	-90 mV +25 mV
Temp. range	Operating: -25 to 85°C Storage: -40 to 125°C				
Over pressure ¹⁾	1 bar	3 bar	6 bar	8 bar	14 bar
Burst pressure ²⁾	1,7 bar	5 bar	10 bar	12 bar	21 bar

Performance characteristics

 $T_{AMB} = 25^{\circ}\text{C}$
 $V_{CC} = 5\text{ V}$, unless otherwise noted

Parameter	Min.	Type	Max.	Unit
Excitation current		1	3	mA
Excitation voltage		5	10	V
Bridge resistance	2,7		4	kΩ
TC Span (0 to 70°C)	-2500	-1900	-1500	ppm/°C
TC Offset (0 to 70°C)	-25	0	25	μV/V/°C
TC Resistance (0 to 70°C)	2400	2900	3300	%FS/°C
Pressure hysteresis & nonlinearity ⁵⁾		0,2	0,5	%FS
Media compatibility	See spec. note ⁶⁾			

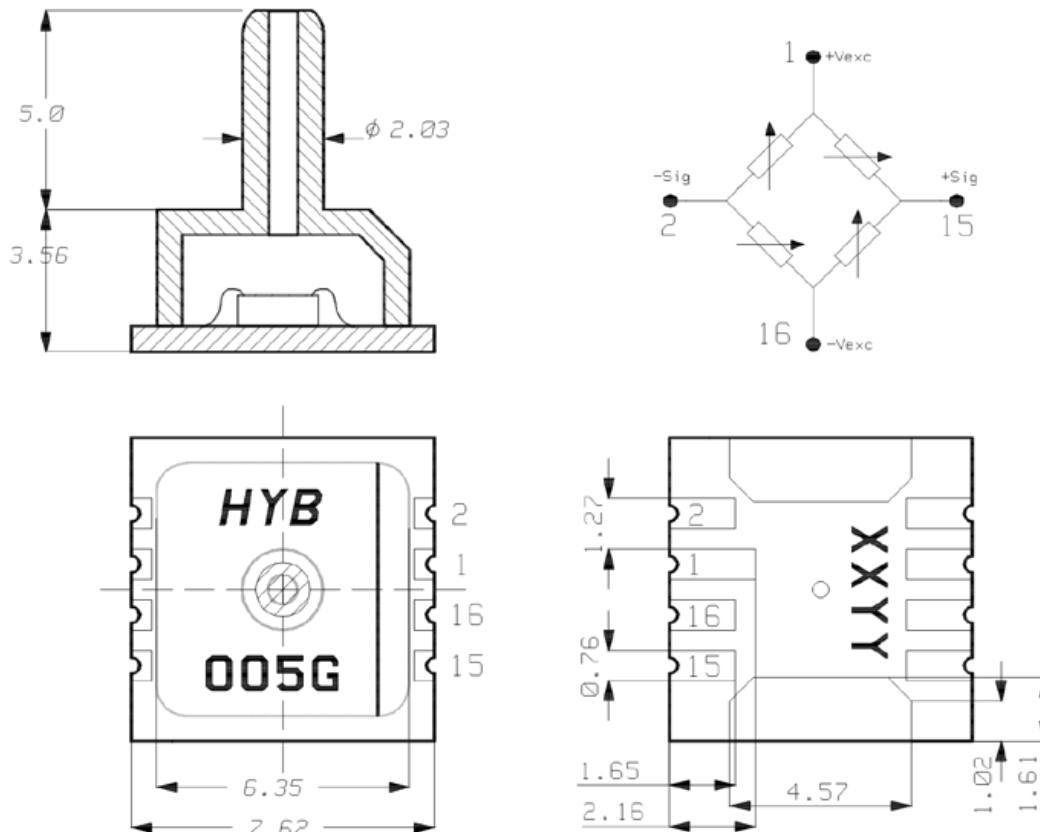
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Specification notes

- 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} .
- 4) Offset voltage is the voltage output at zero pressure.
- 5) Nonlinearity is defined as the BFSL (best fit straight line) across entire pressure range.
- 6) All noncorrosive gases to silicon, RTV, gold, ceramics Al_2O_3 , polymer.

Outline dimensions and pinout



Note: Output polarity is defined for positive pressure on pressure port.

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Ordering guide

Transducer type	Pressure range	Pressure type	Port type
HPSA 1000	010M	A	T
	020M	G	H
	050M		
	100M		
	350M		
	001B		
	002B		
	004B		
	007B		

Pressure range		Pressure type	
010M	10 mbar	A	Absolute (for $p \geq 1$ bar)
020M	20 mbar	G	Gage
050M	50 mbar		
100M	100 mbar		
350M	350 mbar		
001B	1 bar		
002B	2 bar		
004B	4 bar		
007B	7 bar		

Port type	
T	Tube
H	Hole (without pressure tube)

Other configurations possible on special request.

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