

24PC SMT Series *(mbar)*

Unamplified, uncompensated pressure sensors

FEATURES

- 0...50 mbar to 0...1 bar gage or differential
- High impedance bridge
- True surface mount miniature package
- Usable for wet/wet applications⁸

SERVICE

All media compatible with

- | | |
|-------------|--------------------------|
| port 1: | - polyphthalamide |
| | - silver-filled silicone |
| | - silicon nitride |
|
port 2: | - polyphthalamide |
| | - fluor-silicone |
| | - silicon |



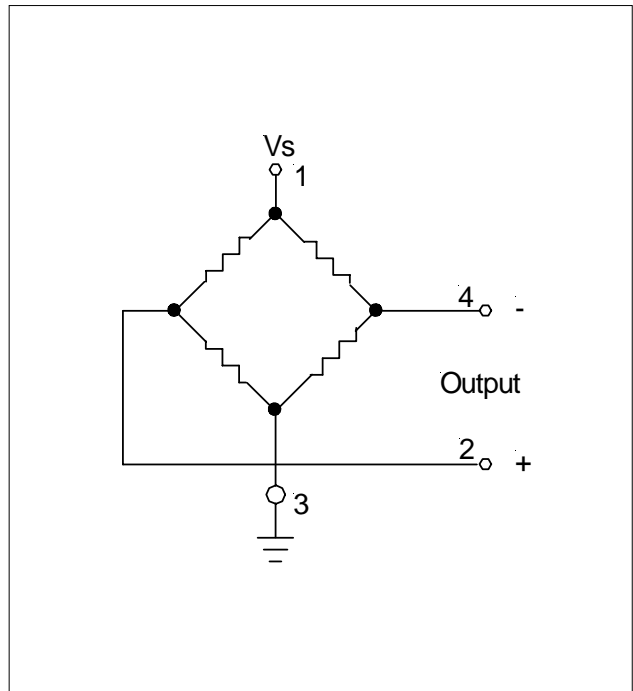
Scale: 1 cm
1/2 inch

SPECIFICATIONS

Maximum ratings

Supply voltage	12 V
Temperature limits	
Storage	-55 to +100°C
Operating	-40 to +85°C
Lead temperature (10 sec. soldering)	260°C
Humidity limits	0...100 %RH
Vibration (0 to 2000 Hz) (qualification tested)	20 g sine
Mechanical shock (qualification tested)	50 g
Proof pressure ¹	
24PC0050DSMT	1.4 bar
24PC0100DSMT	1.4 bar
24PC0250DSMT	1.4 bar
24PC01K0DSMT	3.0 bar

ELECTRICAL CONNECTION



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PRESSURE SENSOR CHARACTERISTICS

$V_s = 10.0 \pm 0.01 \text{ V}$, $t_{\text{amb}} = 20^\circ\text{C}$ (unless otherwise noted)

Part number	Operating pressure	Full-scale span ²			Sensitivity typ.
		Min.	Typ.	Max.	
24PC0050DSMT	0 - 50 mbar	21 mV	33 mV	44 mV	650 $\mu\text{V}/\text{mbar}$
24PC0100DSMT	0 - 100 mbar	43 mV	65 mV	87 mV	650 $\mu\text{V}/\text{mbar}$
24PC0250DSMT	0 - 250 mbar	61 mV	83 mV	105 mV	333 $\mu\text{V}/\text{mbar}$
24PC01K0DSMT	0 - 1000 mbar	159 mV	218 mV	276 mV	220 $\mu\text{V}/\text{mbar}$

COMMON PERFORMANCE CHARACTERISTICS

$V_s = 10.0 \pm 0.01 \text{ V}$, $t_{\text{amb}} = 25^\circ\text{C}$ (unless otherwise noted)

Characteristics	Min.	Typ.	Max.	Unit
Zero pressure offset	-30		+30	mV
Temperature effects (0 - 50°C) ⁴	Offset	± 2.0		
	Span		-2000	ppm/°C
Temperature effects on bridge impedance ⁴		+2200		
Linearity (P2 > P1, BSL) ³		± 0.25		% span
Repeatability and hysteresis ⁵		± 0.15		
Long term stability ⁷		± 0.5		
Input impedance	4.0	5.0	6.0	k Ω
Output impedance	4.0	5.0	6.0	
Response time ⁶			1.0	ms

Specification notes:

- The maximum specified pressure which may be applied to the sensor without causing a permanent change in the output characteristics.
- Span is the algebraic difference between the output voltage at full-scale pressure and the output at zero pressure. Span is ratiometric to the supply voltage.
- Linearity (BSL), the deviation of measured output at constant temperature (25°C) from "Best Straight Line" determined by three points, offset pressure, full-scale pressure and half full-scale pressure.

$$\left[V_{\frac{1}{2} \text{ full scale}} - \left\{ \frac{V_{\text{full scale}} - V_{\text{offset}}}{(\text{full scale pressure})} \times (\frac{1}{2} \text{ full scale pressure}) + V_{\text{offset}} \right\} \right] : 2 (V_{\text{full scale}}) \times 100 \%$$

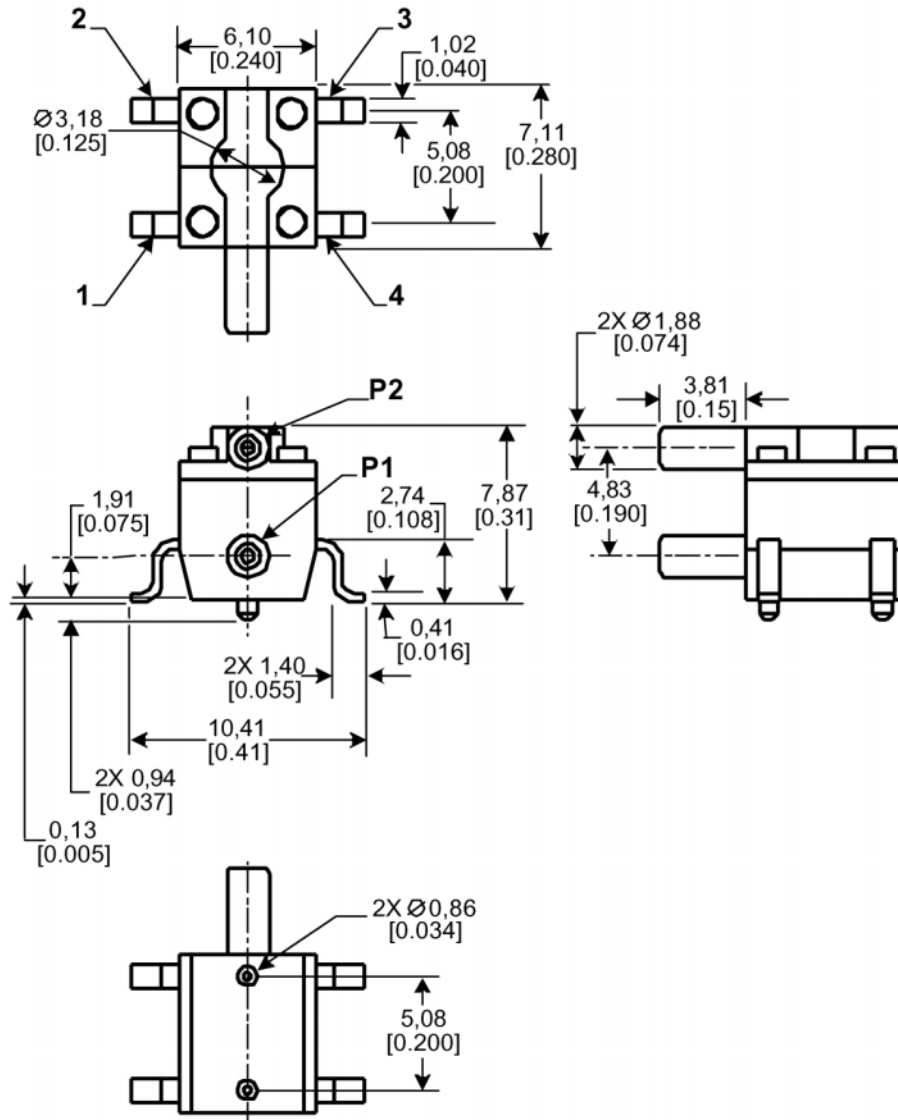
where: V = measured value for each device

- Error band of the offset voltage, span or bridge impedance in the specified temperature range, relative to the 25°C reading.
- Repeatability, the deviation in output readings for successive application of any given input pressure (all other conditions remaining constant). Hysteresis, the error defined by the deviation in output signal obtained when a specific pressure point is approached first with increasing pressure, then with decreasing pressure or vice versa (all other conditions remaining constant).
- Response time for 0 to full-scale pressure step change, readings taken at 10 % and 90 % of full-scale pressure.
- Long term stability of offset and span over a period over one year.
- The sensors might be used on both ports, for media compatible with the components, specified under "Service" (page 1).

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OUTLINE DRAWING



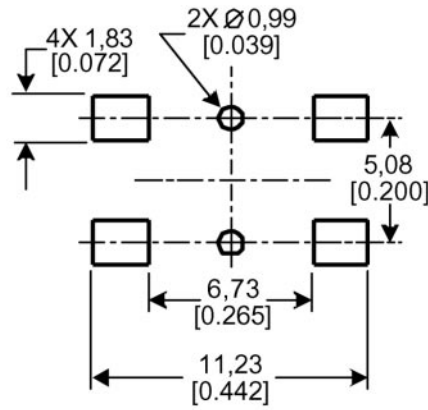
mass: 0.5 g

dimensions in mm (inches)

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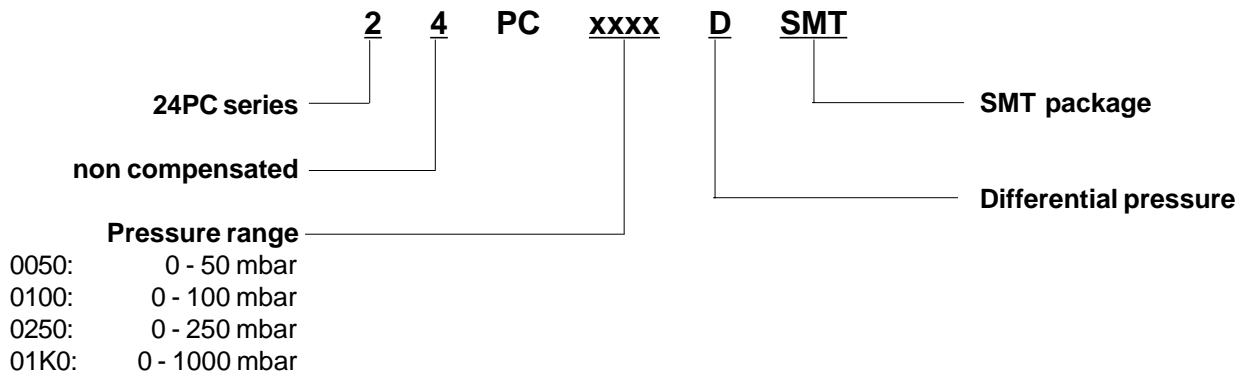
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SUGGESTED LAND PATTERN



dimensions in mm (inches)

ORDERING INFORMATION



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