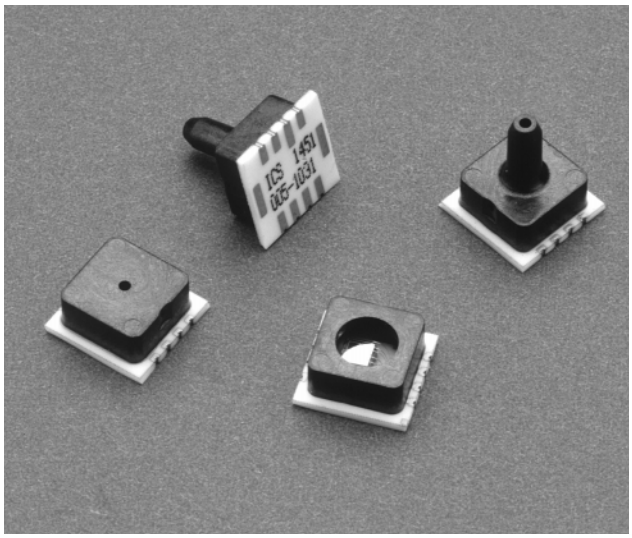
Model 1451

PC Board Mountable Pressure Sensor
0-60 mV Output
Gage and Absolute Pressure
Low Cost

- Altitude Measurement
- Barometric Pressure
- Medical Instrumentation
- Consumer Appliances
- Tire Pressure



FEATURES

- Surface Mount Package
- ±0.25% Pressure Non-linearity
- 3 Pressure Port Options
- Solid State Reliability
- Low Power

STANDARD RANGES

Range	psia	psig
0 to 5	●	●
0 to 15	●	●
0 to 30	●	●
0 to 50	●	●
0 to 100	●	●
0 to 250	●*	
0 to 500	●*	

* N and W option only

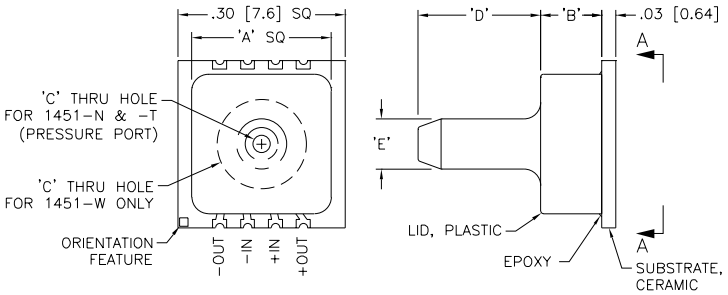
DESCRIPTION

The Model 1451 is a piezoresistive silicon pressure sensor packaged in a surface mount configuration. It is intended for high volume applications where small size, light weight, low cost, and compatibility with automated assembly equipment are required.

The pressure sensor is available with a gage or absolute pressure sensing chip that is attached to a surface mountable ceramic substrate. A cap is attached to the ceramic substrate, protecting the chip and providing the pressure port.

The devices are shipped in plastic anti-static shipping tubes for use with automated production equipment. The drawing shows a standard tube version. Caps are also available with a narrow hole or a large hole to interface with the pressure media.

DIMENSIONS



MODEL 1451 LID TABULATION			
	1451-N (NARROW HOLE)	1451-W (WIDE HOLE)	1451-T (TUBE)
'A'	.25 [6.4]	.25 [6.4]	.25 [6.4]
'B'	.110 [2.79]	.110 [2.79]	.110 [2.79]
'C'	ø.031 [0.78]	ø.160 [4.06]	ø.031 [0.78]
'D'	———	———	.220 [5.59]
'E'	———	———	ø.090 [2.29]

ALL DIMENSIONS ARE IN INCHES [mm]

PERFORMANCE SPECIFICATIONS

Supply Voltage: 3 VDC
Ambient Temperature: 25°C (Unless otherwise specified)

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Full Scale Output Span	30	60	120	mV	
Zero Pressure Output	–25		25	mV	
Pressure Non-linearity	–0.25		0.25	% Span	1
Pressure Hysteresis	–0.1		0.1	% Span	
Input & Output Resistance	3500	5000	6000	Ω	
Temperature Coefficient - Span		–0.20		%/°C	2
Temperature Coefficient - Zero		+0.05		%/°C	2
Temperature Coefficient - Resistance		+0.25		%/°C	2
Thermal Hysteresis - Zero	–0.2		0.2	% Span	2
Supply Voltage		3	12	Volts DC	
Response Time (10% to 90%)		1.0		msec	3
Output Noise		1.0		µV p-p	4
Insulation Resistance (50 VDC)	50			MΩ	
Long Term Stability		0.5		±% Span/year	
Pressure Overload			3X	Rated	
Operating Temperature	–40°C to +125°C				
Storage Temperature	–50°C to +150°C				
Media	Non-Corrosive Gases				
Weight	0.3 g				

Notes

1. Best Fit Straight Line.
2. Over the temperature range 0-50°C with respect to 25°C.
3. For a zero-to-full scale pressure step change.
4. 10 Hz to 1 kHz.

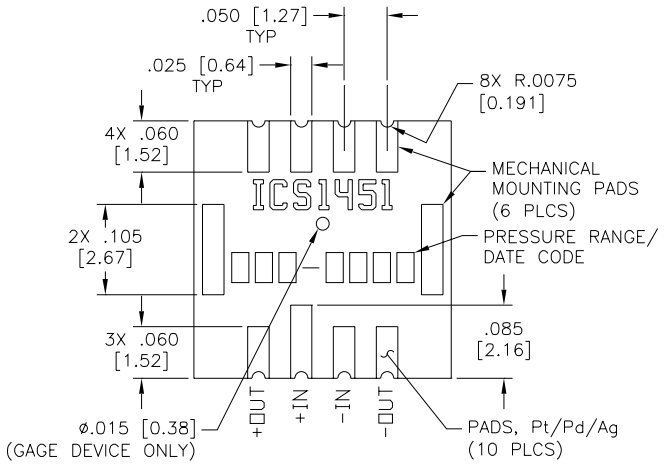
ORDERING INFORMATION

1451 - 015 A - T

- T: Port (T = Tube, N = Narrow Hole, W = Wide Hole)
- A: Type (A = Absolute, G = Gage)
- 015: Pressure Range
- 1451: Model

CONNECTIONS

Bottom View (View A-A)



April 2000

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