

## MS1451

### SPECIFICATIONS

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

The MS1451 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 plastic 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. Ports are also available with a narrow hole or a large hole to interface with the pressure media.

## FEATURES

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

## APPLICATIONS

Altitude Measurement  
Barometric Pressure  
Medical Instrumentation  
Consumer Appliances  
Tire Pressure

## STANDARD RANGES

Range	psia	psig
0 to 5		W, N, T
0 to 15	W, N, T	W, N, T
0 to 30	W, N, T	W, N, T
0 to 50	W, N, T	W, N, T
0 to 100	W, N, T	W, N, T
0 to 250	W, N	
0 to 500	W, N	

Port Options:

W = Wide Hole (Gel Fill option available), N = Narrow Hole, T = Tube

## PERFORMANCE SPECIFICATIONS

Supply Voltage: 3 Vdc

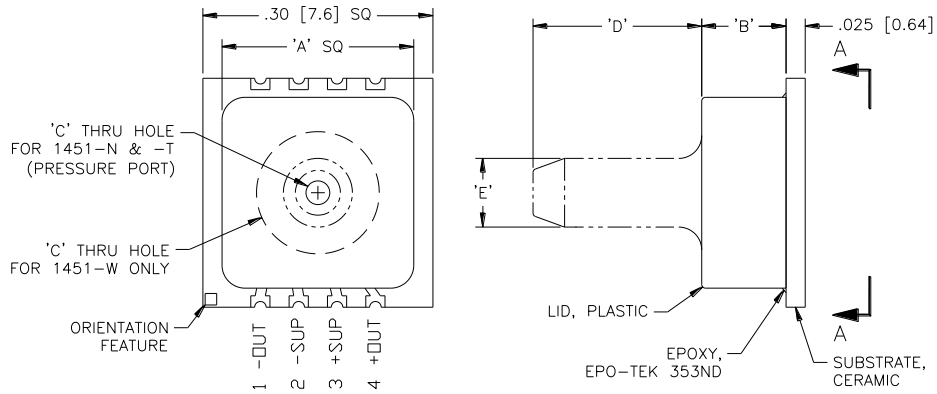
Ambient Temperature: 25°C (unless otherwise specified)

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Span	30	60	120	mV	1
Zero Pressure Output	-25		25	mV	
Pressure Non Linearity	-0.25		0.25	%Span	2
Pressure Hysteresis	-0.1		0.1	%Span	
Input & Output Resistance	3500	5000	6000	Ω	
Temperature Coefficient – Span		-0.13		%/°C	3
Temperature Coefficient – Zero		0.05		%/°C	3
Temperature Coefficient – Resistance		0.15		%/°C	3
Thermal Hysteresis – Zero	-0.2		0.2	%Span	3
Supply Voltage		3.0	12.0	Vdc	
Response Time (10% to 90%)		1.0		mS	4
Output Noise (10Hz to 1kHz)		1.0		μV p-p	
Long Term Stability (Offset & Span)		0.5		%Span	5
Pressure Overload			3X	Rated	6
Operating Temperature	-40		+125	°C	
Storage Temperature	-50		+150	°C	
Weight			0.3	grams	
Soldering Temperature	250°C Max 5 Sec.				7
Media	Non-Corrosive Dry Gases Compatible with Silicon, Pyrex, RTV, Gold, LCP (Liquid Crystal Polymer), and Aluminum				

## Notes

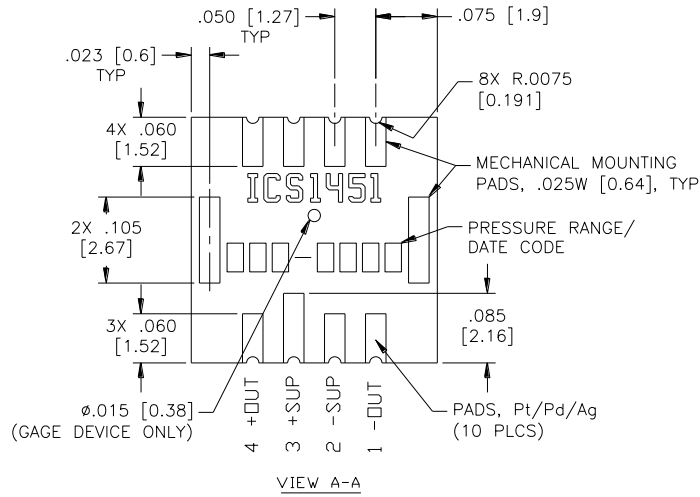
1. Ratiometric to supply voltage.
2. Best fit straight line.
3. Over the temperature range 0-50°C with respect to 25°C.
4. For a zero-to-full scale pressure step change.
5. Long term stability over a one year period with constant voltage and temperature.
6. For sensors above 100 psi, the entire sensor is required to be inside the pressure chamber.
7. For mounting instructions, please refer to the application note "Mounting Instructions for SMT Pressure Sensors."

DIMENSIONS

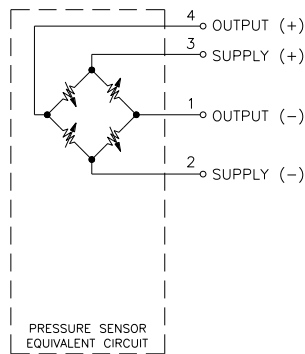


MODEL 1451 LID TABULATION			
	1451-N (NO TUBE)	1451-W (WIDE HOLE)	1451-T (TUBE)
'A'	.25 [6.4]	.25 [6.4]	.25 [6.4]
'B'	.110 [2.79]	.110 [2.79]	.110 [2.79]
'C'	∅.031 [0.78]	∅.160 [4.06]	∅.031 [0.78]
'd'			.220 [5.59]
'E'			∅.090 [2.29]

ALL DIMENSIONS ARE IN INCHES [mm]



CONNECTIONS



ORDERING INFORMATION

<b>1451</b>	—	<b>015</b>	<b>A</b>	—	<b>T</b>	<b>F</b>
<b>Model Name</b>						
<b>Pressure Range</b>						
005	015	030				
050	100	250				
500						
<b>Pressure Type</b>						
A=Absolute		G=Gage				
<b>Pressure Port</b>						
T=Tube	N=Narrow hole		W=Wide hole			
<b>Coating</b>						
F=Gel Fill		'Blank'=No Fill				