

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

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

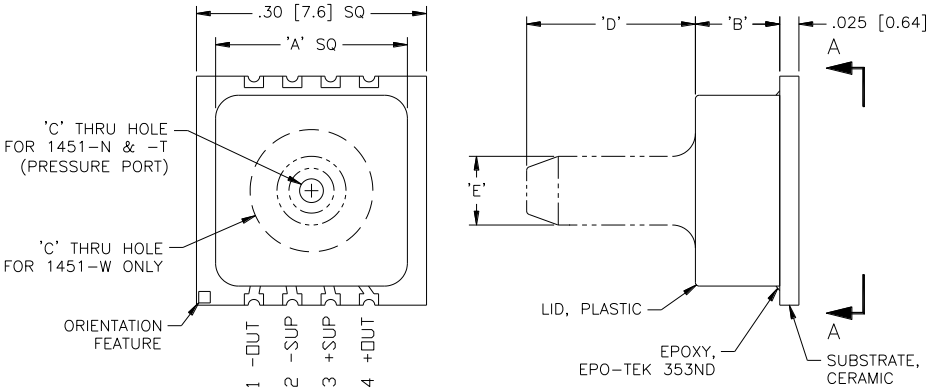
Supply Voltage: 3 Vdc
Ambient Temperature: 25°C (unless otherwise specified)

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

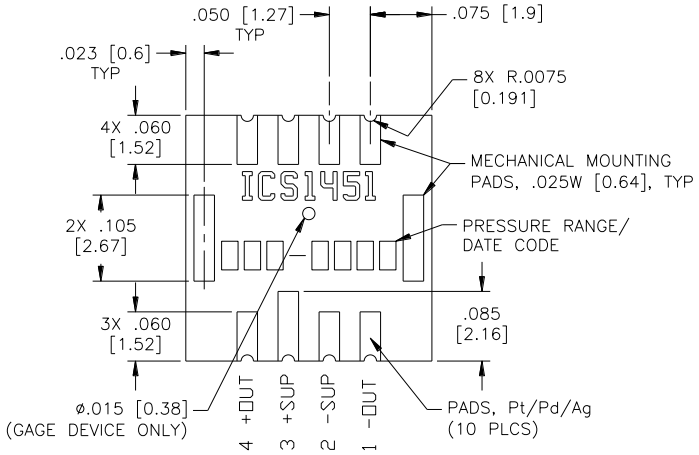
1. Ratiometric to supply voltage.
2. Best fit straight line.
3. Over the temperature range 0-50°C with respect to 25°C.
4. For a zero-to-full scale pressure step change.
5. Long term stability over a one year period with constant voltage and temperature.
6. For sensors above 100 psi, the entire sensor 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



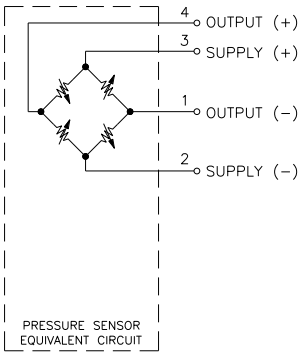
MODEL 1451 LID TABULATION			
	1451-N (NO TUBE)	1451-W (WIDE HOLE)	1451-T (TUBE)
'A'	.25 [6.4]	.25 [6.4]	.25 [6.4]
'B'	.110 [2.79]	.110 [2.79]	.110 [2.79]
'C'	ø.031 [0.78]	ø.160 [4.06]	ø.031 [0.78]
'D'	———	———	.220 [5.59]
'E'	———	———	ø.090 [2.29]

ALL DIMENSIONS ARE IN INCHES [mm]



VIEW A-A

CONNECTIONS



ORDERING INFORMATION

1451	—	015	A	—	T	F
Model Name						

Pressure Range

005	015	030
050	100	250
500		

Pressure Type

A=Absolute **G**=Gage

Pressure Port

T=Tube **N**=Narrow hole **W**=Wide hole

Coating

F=Gel Fill 'Blank'=No Fill

NORTH AMERICA

Measurement Specialties, Inc.,
a TE Connectivity company
Tel: 800-522-6752
Email: customercare.frmt@te.com

EUROPE

Measurement Specialties (Europe), Ltd.,
a TE Connectivity Company
Tel: 800-440-5100
Email: customercare.bevx@te.com

ASIA

Measurement Specialties (China) Ltd.,
a TE Connectivity company
Tel: 0400-820-6015
Email: customercare.shzn@te.com

TE.com/sensorsolutions

Measurement Specialties, Inc., a TE Connectivity company.

Measurement Specialties, TE Connectivity, TE Connectivity (logo) and EVERY CONNECTION COUNTS are trademarks. All other logos, products and/or company names referred to herein might be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

© 2015 TE Connectivity Ltd. family of companies All Rights Reserved.