





- PC Board Mountable Pressure Sensor
- 0-100 mV Output
- Current Excitation
- · Gage and Differential
- Temperature Compensated

# **DESCRIPTION**

The 27 and 37 UltraStable™ are high performance, temperature compensated, piezoresistive silicon pressure sensors packaged in a TO-8 configurations. It uses Measurement Specialties' proprietary UltraStable™ die to provide excellent performance and long-term stability over wide temperatures.

Gage and differential pressure ranges from 0-15 to 0-250 psi are available. Integral temperature compensation is provided over a range of -20°C to +85°C using laser-trimmed resistors. An additional laser-trimmed resistor is included to normalize pressure sensitivity variations by programming the gain of an external differential amplifier. This provides sensitivity interchangeability of  $\pm 1\%$ .

Please refer to Models 23 and 33 for information on products with operating pressures less than 0-15 psi.

## **FEATURES**

- TO-8 Package
- -20°C to +85°C Compensated Temperature Range
- ±0.1% Non Linearity
- 1.0% Interchangeable Span (provided by gain set resistor)
- Solid State Reliability

## **APPLICATIONS**

- Medical Instruments
- Process Control
- Factory Automation
- Handheld Calibrators
- Environmental Control

## STANDARD RANGES

Range	Model 27 psig	Model 37 psid
0 to 15	•	•
0 to 30	•	•
0 to 50	•	•
0 to 100	•	•
0 to 250		•





# PERFORMANCE SPECIFICATIONS

Supply Current: 1.5 mA

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES	
Span	75	100	150	mV	1	
Zero Pressure Output	-2		2	mV		
Pressure Non Linearity	-0.1	±0.05	0.1	%Span	2	
Pressure Hysteresis	-0.1	±0.01	0.1	%Span		
Input Resistance	2200	4000	5800	Ω		
Output Resistance		4200		Ω		
Temperature Error – Span	-0.5	±0.3	0.5	%Span	3	
Temperature Error – Zero	-0.5	±0.1	0.5	%Span	3	
Temperature Coefficient – Resistance		0.15		%/°C	3	
Thermal Hysteresis – Zero		±0.05		%Span	3	
Short Term Stability (Offset & Span)		±0.05		%Span	4	
Long Term Stability (Offset & Span)		±0.1		%Span	5	
Supply Current	0.5	1.5	2.0	mA		
Response Time (10% to 90%)		1.0		mS	6	
Output Noise (10Hz to 1kHz)		1.0		μV p-p		
Pressure Overload			3X	Rated	7	
Compensated Temperature	-20		+85	°C		
Operating Temperature	-40		+125	°C		
Storage Temperature	-50		+150	°C		
Weight			3	grams		
Solder Temperature	250°C Max 5 S	ec.				
Media	Non-Corrosive Dry Gases Compatible with Silicon, Pyrex,					

Non-Corrosive Dry Gases Compatible with Silicon, Pyrex, RTV, Gold, Nickel, and Aluminum

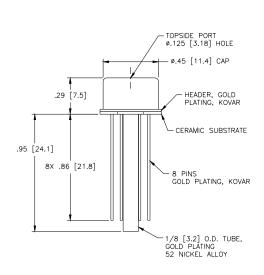
#### Notes

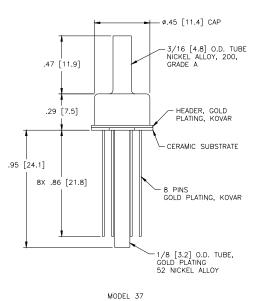
- 1. Ratiometric to supply current. For 250 psi devices, the minimum span value is 62 mV.
- Best fit straight line.
- 3. Maximum temperature error between -20°C and +85°C with respect to 25°C.
- 4. Short term stability over 7 days with constant current and temperature.
- 5. Long term stability over a one year period with constant current and temperature.
- 6. For a zero-to-full scale pressure step change.
- 7. For topside applications, 2X maximum for 250 psi device. For backside applications, 3X not to exceed 100 psi on all ranges



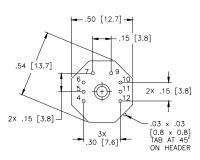
# **DIMENSIONS**

DIMENSIONS ARE IN INCHES [mm]

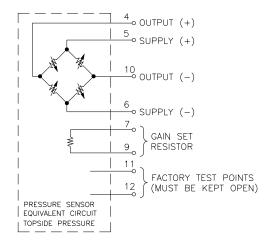


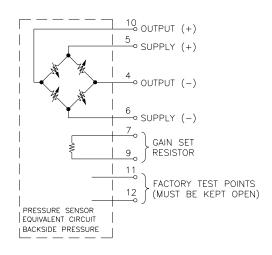


MODEL 27



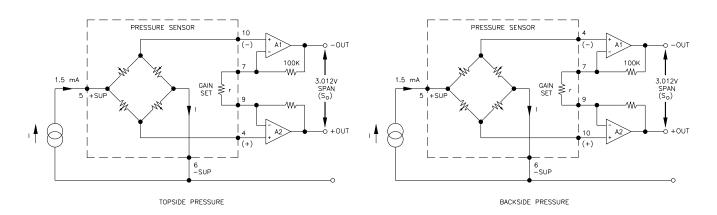
# **CONNECTIONS**



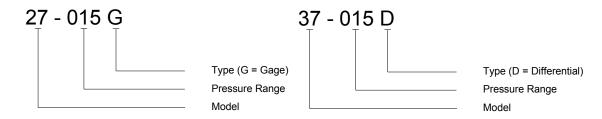




# **APPLICATION SCHEMATIC**



# **ORDERING INFORMATION**



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