



## 23 AND 33

### 1psi

#### SPECIFICATIONS

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

The 23 and 33 are temperature compensated, piezoresistive silicon pressure sensors packaged in a TO-8 configuration. It provides excellent performance and long-term stability.

Integral temperature compensation is provided over a range of 0-50°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 the 23 and 33 standard datasheets for information on products with operating pressures greater than 1 psi.

**FEATURES**

- ◆ TO-8 Package
- ◆ 0°C to 50°C Compensated
- ◆ Temperature Range
- ◆ ±0.3% Non Linearity
- ◆ 1.0% Interchangeable Span
- ◆ (provided by gain set resistor)
- ◆ Solid State Reliability

**APPLICATIONS**

- ◆ Medical Instruments
- ◆ Process Control
- ◆ Factory Automation
- ◆ Leak Detection
- ◆ Airspeed Measurement
- ◆ Level Detection

**STANDARD RANGES**

Range	23 psig	33 psid
0 to 1	◆	◆

## PERFORMANCE SPECIFICATIONS

Supply Current: 1.5mA

Ambient Temperature: 25°C (unless otherwise specified)

PARAMETERS	PRESSURE RANGE 0 – 1 psi			UNITS	NOTES
	MIN	TYP	MAX		
Span	65	100	150	mV	1
Zero Pressure Output	-2		2	mV	
Pressure Non Linearity	-0.3	±0.2	0.3	%Span	2
Pressure Hysteresis	-0.05	±0.01	0.05	%Span	
Input & Output Resistance	2500	4400	6000	Ω	
Temperature Error – Span	-1.0	±0.5	1.0	%Span	3
Temperature Error – Zero	-1.0	±0.5	1.0	%Span	3
Thermal Hysteresis – Zero		±0.1		%Span	3
Supply Current		1.5	2.0	mA	
Response Time (10% to 90%)		1.0		mS	4
Output Noise (10Hz to 1kHz)		1.0		μV p-p	
Insulation Resistance (50 Vdc)	50			M Ω	5
Long Term Stability (Offset & Span)		±0.2		%Span	6
Pressure Overload			10	psi	
Compensated Temperature	0		50	°C	
Operating Temperature	-40		+125	°C	
Storage Temperature	-50		+150	°C	
Weight			3	grams	
Solder Temperature	250°C Max 5 Sec.				
Media	Non-Corrosive Dry Gases Compatible with Silicon, Pyrex, RTV, Gold, Nickel, and Aluminum				

## Notes

1. Ratiometric to supply current.
2. Best fit straight line.
3. Maximum temperature error between 0°C and 50°C with respect to 25°C.
4. For a zero-to-full scale pressure step change.
5. Minimum distance between case and pins.
6. Long term stability over a one year period with constant current and temperature.

DIMENSIONS ARE IN INCHES [mm]



4 OUTPUT (+)

5 SUPPLY (+)

10 OUTPUT (-)

6 SUPPLY (-)

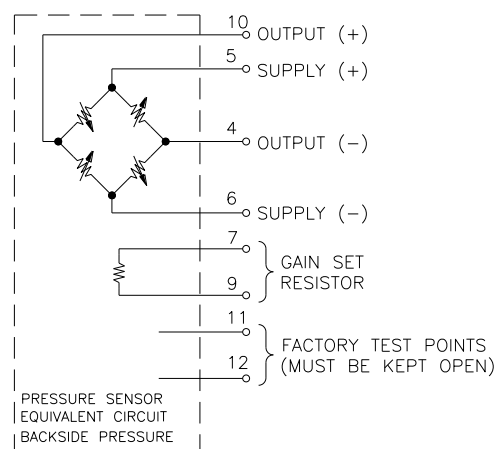
7 } GAIN SET

9 } RESISTOR

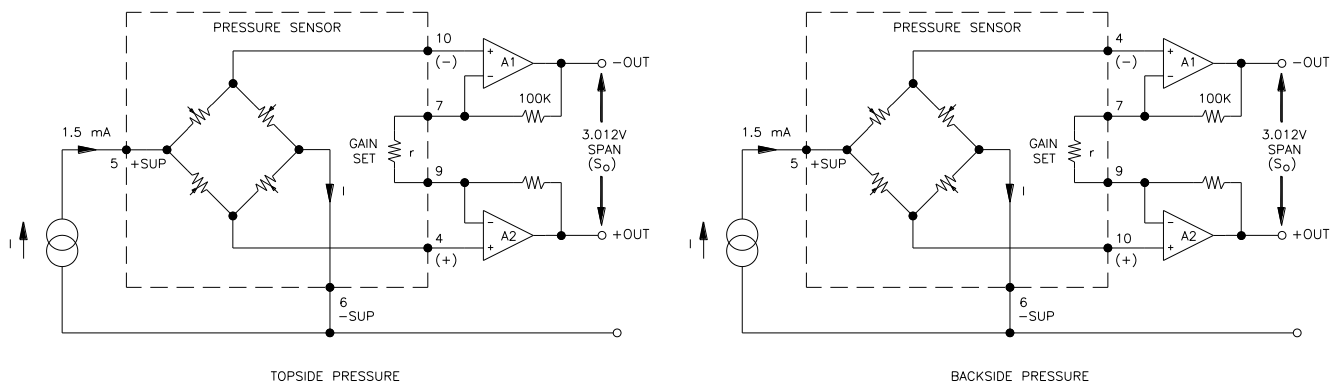
11 } FACTORY TEST POINTS

12 } (MUST BE KEPT OPEN)

PRESSURE SENSOR  
EQUIVALENT CIRCUIT  
TOPSIDE PRESSURE

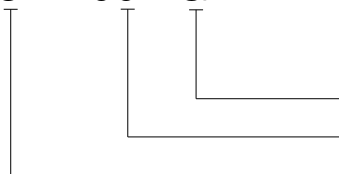


## APPLICATION SCHEMATIC



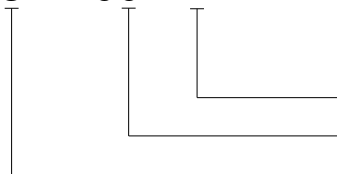
## ORDERING INFORMATION

23A - 001 G



Type (G = Gage)  
Pressure Range  
Model

33A - 001 D



Type (D = Differential)  
Pressure Range  
Model

## NORTH AMERICA

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