

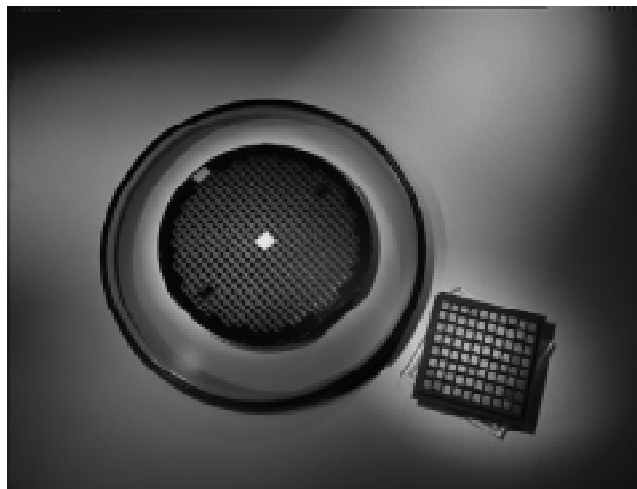
October 1997-1

DESCRIPTION

The SM5102 is a silicon micro-machined, piezoresistive pressure sensing chip. These devices are available in full-scale ranges from 5 to 300 psi and are ideal for OEM and high volume applications.

Provided in die form, these sensors can be mounted on ceramic or PC board substrates as part of an OEM system. They also may be packaged into proprietary, or application specific sensor lines.

Die are probed, inked and diced, and shipped on tape or in waffle packs.



FEATURES

- High Volume, Low Cost
- Gage and Absolute Versions
- Constant Current or Constant Voltage Drive
- Millivolt Output
- 5, 15, 30, 60, 100 and 300 psi Ranges Available

APPLICATIONS

- Altimeters
- Tire Gauges
- Medical Instrumentation
- Industrial Sensors
- Diving Modules
- Home Appliances

CHARACTERISTICS

All parameters are measured at 5V excitation at room temperature unless otherwise specified.

Parameter	Min	Typ	Max	Units
Excitation Voltage	0	5	10	V
Excitation Current	0	1.5	3	mA
Span (FS Range) ¹				
5 psi	75	100	125	mV
15 psi	115	145	175	mV
30 psi	130	165	195	mV
60 psi	130	180	220	mV
100 psi	130	200	250	mV
300 psi	130	220	275	mV
Offset	-50	0	50	mV
TC Span ²		-22 ± 5		%FS/100°C
TC Offset ²		± 7		%FS/100°C
TC Resistance		28 ± 5		%/100°C
Linearity ³	-0.3	± 0.05	0.3	%FS
Bridge Impedance	2.7	3.3	4	kΩ
Proof Pressure	3X			Rated FS
Burst Pressure	5X			Rated FS
Operating Temperature	-40		85	°C
Storage Temperature	-55		125	°C

Notes:

¹ Measured at 5V constant voltage excitation.

² Measured from 0 to 70°C.

³ Defined as best fit straight line.

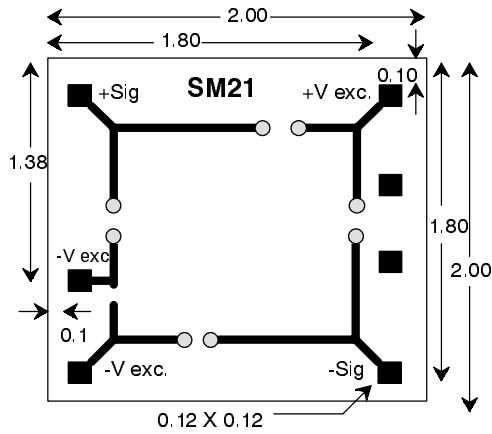


Figure 1. Layout

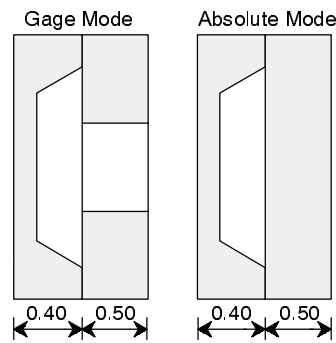


Figure 2. Side View

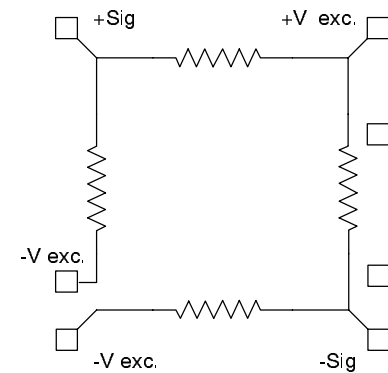


Figure 3. Schematic

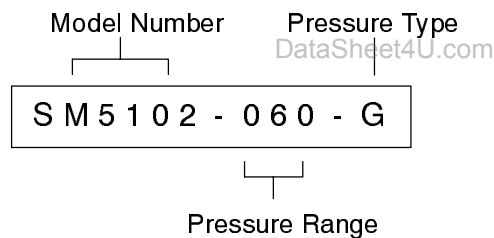
Note:

- All dimensions in millimeters.

ORDERING INFORMATION

Pressure Type

A: Absolute
G: Gage



Pressure Range

Ord. Info	psi	BAR	kPa	Hg ¹ (mm)	H ₂ O ² (inches)	H ₂ O ³ (mm)
005	5	0.345	34.47	258.6	138.4	3515.4
015	15	1.034	103.42	775.7	415.2	10546.1
030	30	2.068	206.84	1551.5	830.4	21092.2
060	60	4.137	413.68	3102.9	1660.8	42184.3
100	100	6.895	689.47	5171.5	2768	70307.2
300	300	20.684	2068.41	15514.5	8304	210921.6

¹ At 0° C

² At 39° F

³ At 4° C

Special Configurations are available. Contact EXAR Corporation for more information.

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