

• **OEM SILICON PRESSURE SENSOR DIE**

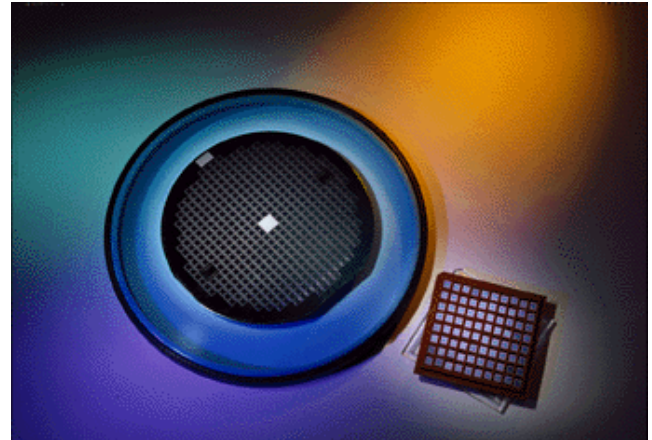
**DESCRIPTION**

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.

Custom pressure ranges available in high-volume applications. Field-shield, high stability parts are also available on a custom-bases.



**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

# SM5102

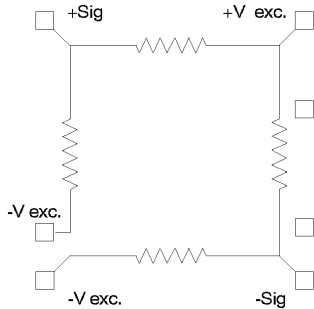
## CHARACTERISTICS FOR SM5102 - SPECIFICATIONS

All parameters are measured at 5.000V supply at room temperature, unless otherwise specified.

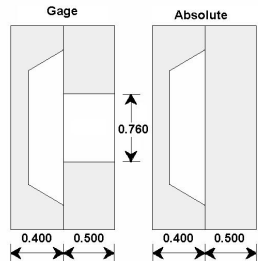
	Min	Typ	Max	Units	Notes
Excitation Voltage	0	5	10	V	1
Excitation Current	0	1.5	3	mA	
Span (FS Range)					2
5 psi	75	100	125	mV	
15 psi	115	145	175	mV	
30 psi	130	165	195	mV	
60 psi	130	180	220	mV	
100 psi	130	200	250	mV	
300 psi	130	220	275	mV	
Offset	-50	0	50	mV	
TC Span	-24	-19	-15.5	%FS/100 °C	3
TC Offset	-7	-1	+7	%FS/100 °C	
TC Resistance	24	27.5	33	%/100 °C	
Linearity	-0.3	±0.05	0.3	%FS	4
Bridge Impedance	2.70	3.15	4.00	kohm	
Proof Pressure	3X			Rated FS	
Burst Pressure	5X			Rated FS	
Operating Temperature	-40		125	°C	
Storage Temperature	-55		150	°C	

**Notes:**

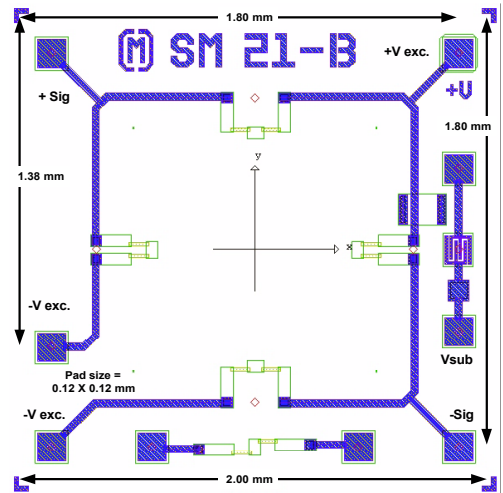
1. Bridge may be driven with positive or negative voltage as long as Vsub is not connected. Positive output for positive pressure applied to circuit side of die when bridge is driven with positive voltage.
2. Measured at 5V constant voltage excitation.
3. Measured from 0 to 70 C
4. Defined as best straight line.



Positive output for pressure applied to the top (circuit) side of the sensor



Die dimensions in mm

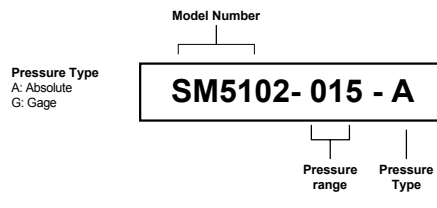


**SM5102 die (2 mm square as sawn).**

Covered under USA Mask-Copyright and may be covered under US Patent Numbers 5,812,047 and 6,089,099

See separate Application Notes for typical range of variation in Saw dimensions.

**ORDERING INFORMATION:**



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**Pressure Ranges**

PSI	5102
5	005
15	015
30	030
60	060
100	100
300	300

Custom ranges available in high volumes