

- **OEM ABSOLUTE SILICON PRESSURE SENSOR DIE FOR HARSH ENVIRONMENTS**
- **REAR ENTRY FOR PROTECTION OF THE PIEZORESISTIVE BRIDGE NETWORK – ONLY SILICON AND GLASS EXPOSED**

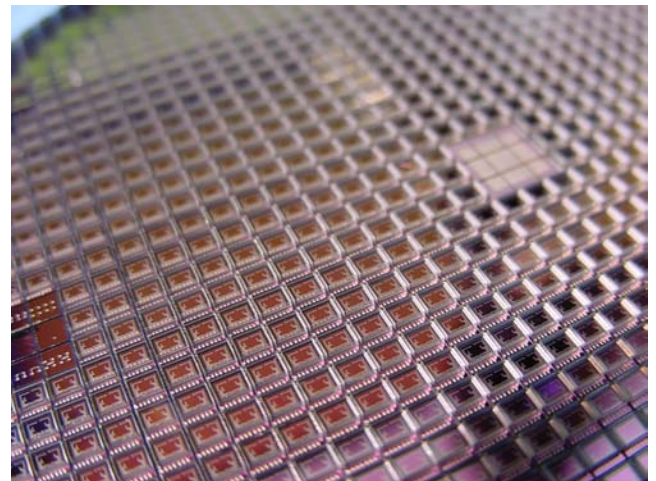
## **DESCRIPTION**

The SM5112 is a silicon micro-machined, piezoresistive pressure-sensing chip. The SM5112 is designed for harsh environments where absolute pressure needs to be accurately measured. These devices are available in full-scale ranges from 15 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.



## **FEATURES**

- High Volume, Low Cost
- Absolute Version
- Constant Current or Constant Voltage Drive
- Millivolt Output
- 15, 30, 60, 150 and 300 PSI Ranges Available

## **APPLICATIONS**

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

# SM5112

## CHARACTERISTICS FOR SM5112 - SPECIFICATIONS

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

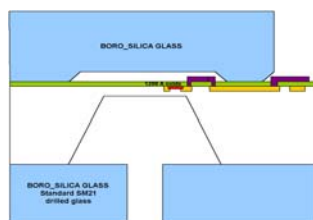
	Min	Typ	Max	Units	Notes
Excitation Voltage	0	5	10	V	1
Excitation Current	0	1.5	3	mA	
Span (FS Range)					2
15 psi	75	125	150	mV	
30 psi	85	125	150	mV	
60 psi	85	125	150	mV	
150 psi	100	145	195	mV	
300 psi	100	145	195	mV	
Offset	-50	0	50	mV	
TC Span	-24	-19	-15.5	%FS/100 °C	3
TC Offset	-15	2	+15	%FS/100 °C	
TC Resistance	17	26	31	%/100 °C	
Linearity	-0.3		0.3	%FS	4
Bridge Impedance	4.0	5.0	6.0	kohm	
Proof Pressure	3X			Rated FS	
Burst Pressure	5X			Rated FS	
Operating Temperature	-40		125	°C	
Storage Temperature	-55		150	°C	

Notes:

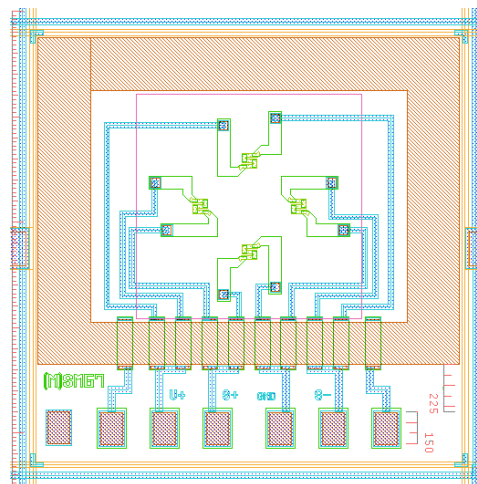
1. Bridge may be driven with positive or negative voltage as long as Vsub is not connected. Positive output for positive pressure applied to bottom side of die when bridge is driven with positive voltage.
2. Measured at 5V constant voltage excitation.
3. Measured from 0 to 70 C
4. Defined as best straight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

Pin	Function
1	Subs
2	N/C
3	Vext+
4	Sig+
5	Gnd
6	Sig-
7	N/C

Pin-out from Left to Right in accompanying figure.



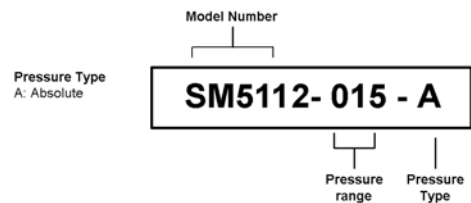
Cross-section of SM5112  
Back port hole is 0.8 mm. Silicon is 0.4 mm; top and bottom glass is 0.5 mm



Top view of SM5112 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

### ORDERING INFORMATION:



### Pressure Ranges

PSI	5112
15	015
30	030
60	060
150	150
300	300

Custom ranges available in high volumes

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