

# Solid State Pressure Sensor

ANALOG  
OUTPUT

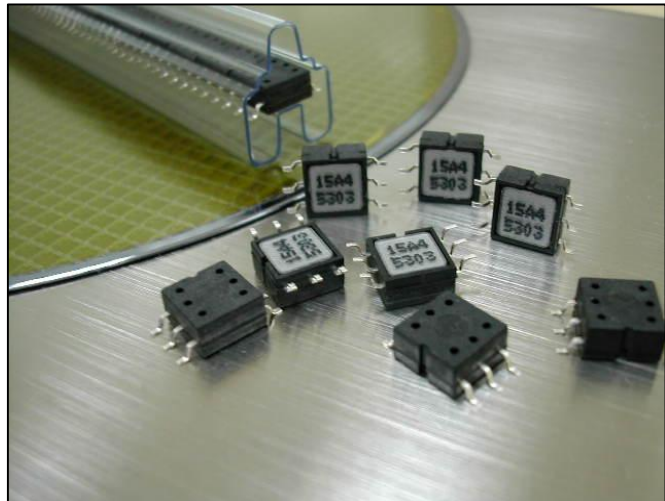
## SMP Series – Model 31A

### FEATURES

- Low Cost
- Miniature SMD
- Absolute Pressure
- Small Foot Print
- High Sensitivity

### APPLICATIONS

- Barometric Pressure
- Altimeter
- Medical Devices
- White Goods



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### DESCRIPTION

The SMP31A Series are Fully compensated high performance die in a plastic surface mount package. They are absolute pressure sensors fabricated by bonding a micromachined silicon diaphragm to Pyrex glass in a vacuum. Uniform span and offset distribution result from precise implant and etching control. The result is long-term offset stability that is suitable for barometric pressure measurement.

The output is compensated via on board signal conditioning using the latest digital ASIC technology.

The small package makes this an ideal product for customers looking for compensated absolute pressure measurement in the smallest possible surface mount package.

In order to provide maximum flexibility, the sensors are available with several custom features including pressure range, impedance and pin out configuration.

For custom products, please contact the factory.

# Characteristics

Unless otherwise specified, all parameters are measured at 5V excitation, 25 °C and 60% RH

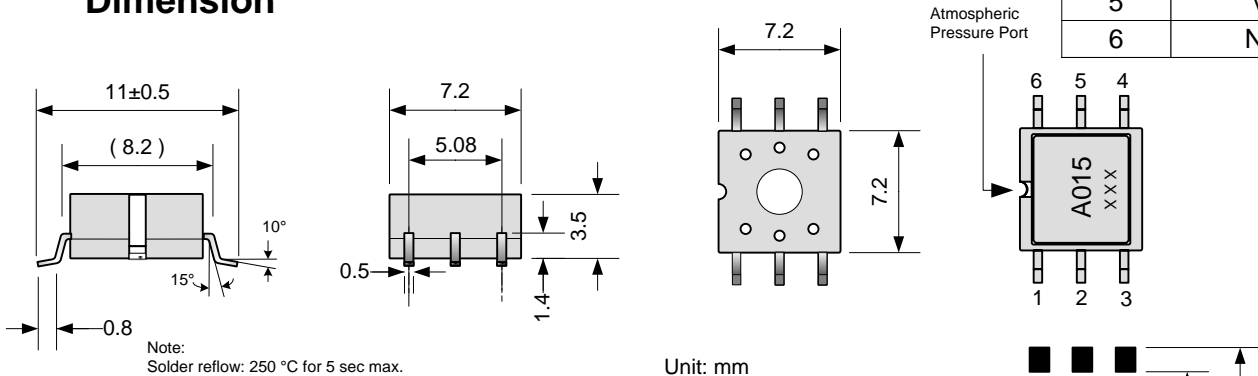
| Parameters                       | Min        | Typ   | Max        | Unit           |
|----------------------------------|------------|-------|------------|----------------|
| Supply Voltage <sup>Note 3</sup> | 2.7 to 3.3 |       | 4.5 to 5.5 | Vdc            |
| Supply Current                   |            |       | 2.5        | mA             |
| Pressure Range <sup>Note 4</sup> | 15         |       | 30         | psi            |
| Zero Output (Offset)             | 0.428      | 0.500 | 0.572      | Vdc            |
| Full Scale Output                | 4.428      | 4.500 | 4.572      | Vdc            |
| Output Current of Buffer         |            |       | 2.2        | mA             |
| Accuracy <sup>NOTE1</sup>        |            |       | 1.8        | %FS            |
| Over Pressure <sup>Note5</sup>   |            |       | 2X         | Rated Pressure |
| Response Time                    |            | 1     | 2          | ms             |
| Temp - Compensated               | 0          |       | 50         | °C             |
| Temp - Operating                 | -20        |       | +85        | °C             |
| Temp - Storage                   | -40        |       | +125       | °C             |

### Notes:

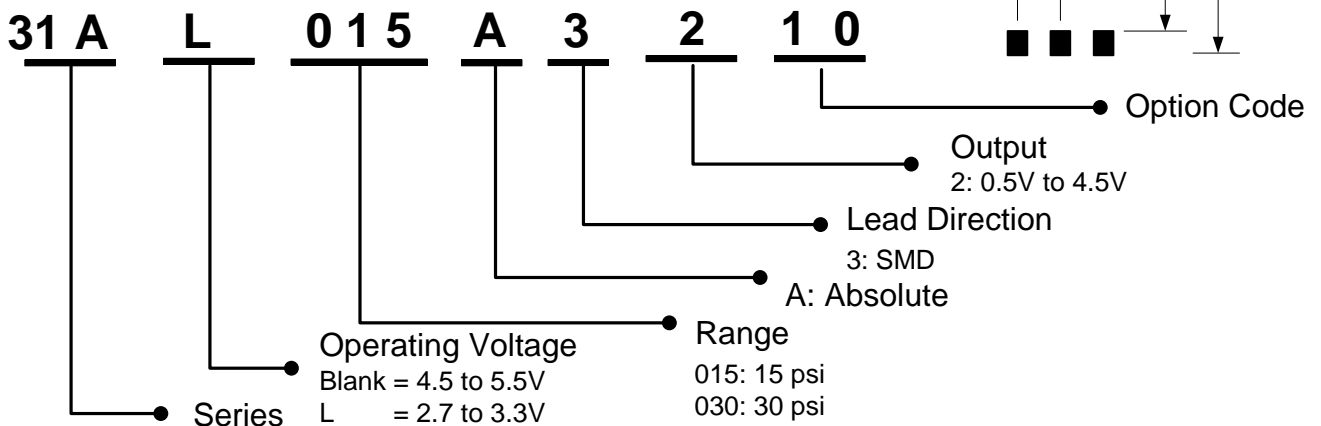
1. Accuracy includes non-linearity, hysteresis, TCS, TCO inside the compensated temperature range, Best Fit Straight Line definition
2. Wetted material contains Au, RTV, PPA, glass and silicon
3. Specify desired operating voltage range when ordering. Output is Ratiometric to supply Voltage
4. See ordering guide for list of available pressure ranges
5. Over-pressure is 1.5x for 30 psi range

| Pin # | Description     |
|-------|-----------------|
| 1     | N.C.            |
| 2     | Sig             |
| 3     | V <sub>DD</sub> |
| 4     | V <sub>SS</sub> |
| 5     | V <sub>SS</sub> |
| 6     | N.C.            |

## Dimension



## Ordering Information



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