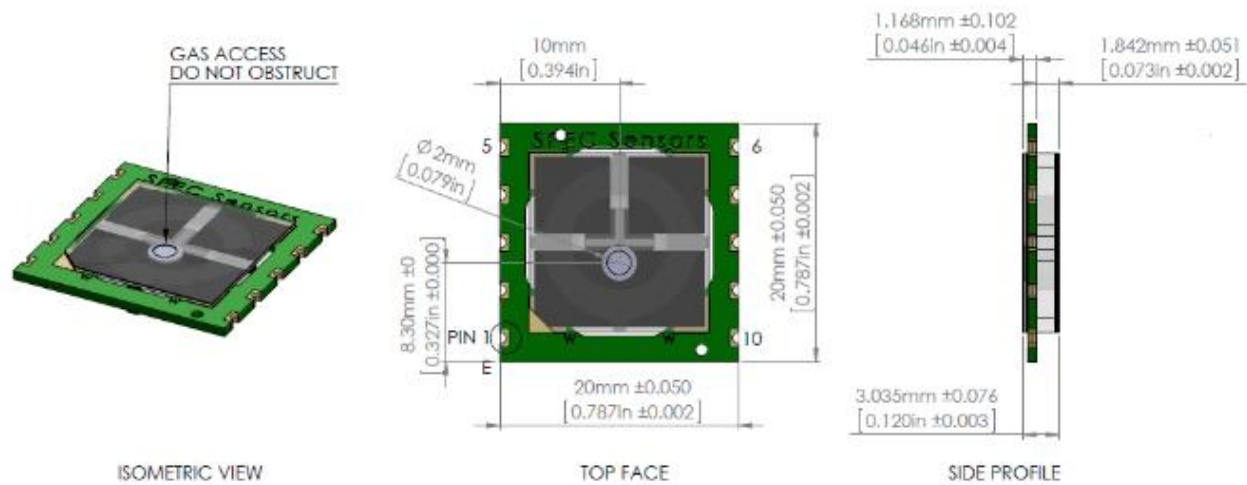


**15x15 Ethanol Sensor 1000 ppm Package 110-205**

**BENEFITS**

- Small Size with Low Profile (20x20x3 mm)
- Long Life (10 years expected life)
- Fast Response
- Low Power Consumption
- Individually Calibrated (NIST Traceable)
- ROHS Compliant

**APPLICATIONS**

- Law Enforcement Breathalyzers
- Evidential Breath Alcohol Testing
- Portable Breath Alcohol Tester
- Personal Breathalyzers

**DESCRIPTION**

SPEC's Screen Printed ElectroChemical sensor technology revolutionizes the current state of the art, enabling new applications in consumer and industrial safety monitoring.

SPEC's printed sensors offer the performance of the best quality electrochemical sensors at a fraction of the price. SPEC's printed sensors are also ultra-thin, offering easy integration into wireless, portable, and networked solutions. These sensors are ideal for health, environmental, industrial and residential monitoring, because of their high performance, low cost and small size.

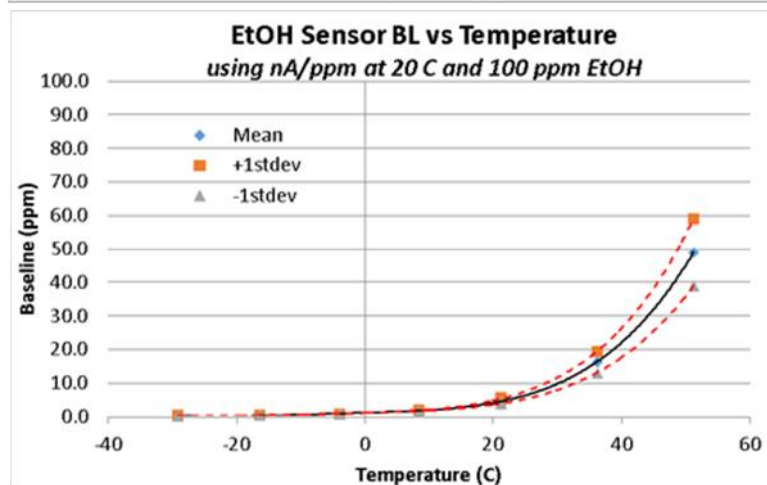
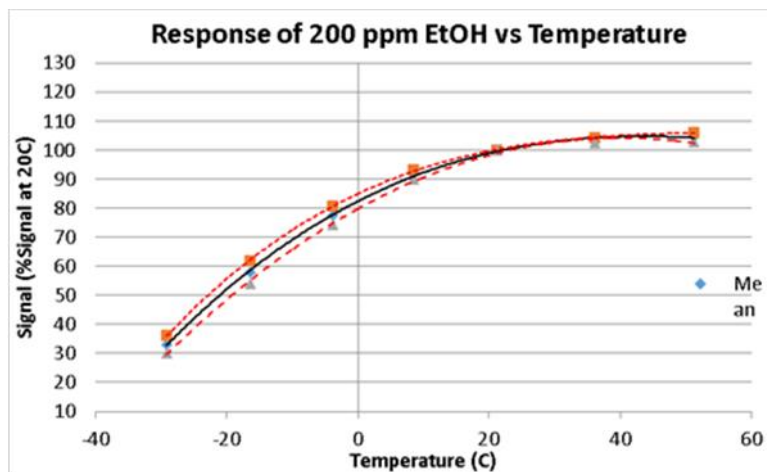
<b>Measurement Range</b>	0 to 1000 ppm
<b>Lower Detectable Limit</b>	< 5 ppb (instrumentation dependent)
<b>Repeatability</b>	< +/- 3 % of reading
<b>Response Time</b>	< 180 seconds typical
<b>Sensitivity @ 100 mV bias</b>	15 +/- 6 nA/ppm
<b>Expected Operating Life</b>	> 5 years (10 years @ 23+/-3C; 40+/-10% RH)
<b>Operating Temperature Range</b>	-30 to 50 C (-20 to 40 C continuous)
<b>Operating Humidity Range – non-condensing</b>	0 to 100% RH (15 to 95% continuous)
<b>Power Consumption</b>	circuit & ambient Ethanol dependent

**CROSS SENSITIVITY**

Gas/Vapor	Concentration	Typical Response PPM NO2
Methane	500 ppm	< 5
Ammonia	100 ppm	< 5
Nitrogen Dioxide	10 ppm	< 5
Hydrogen Sulfide	25 ppm	63.2
Carbon Monoxide	400 ppm	251.4
Ozone	5 ppm	< 5
Sulfur Dioxide	20 ppm	11.6
Nitric Oxide (NO)	50 ppm	54.5
Chlorine	10 ppm	-14.3
n-Heptane	500 ppm	-12.6

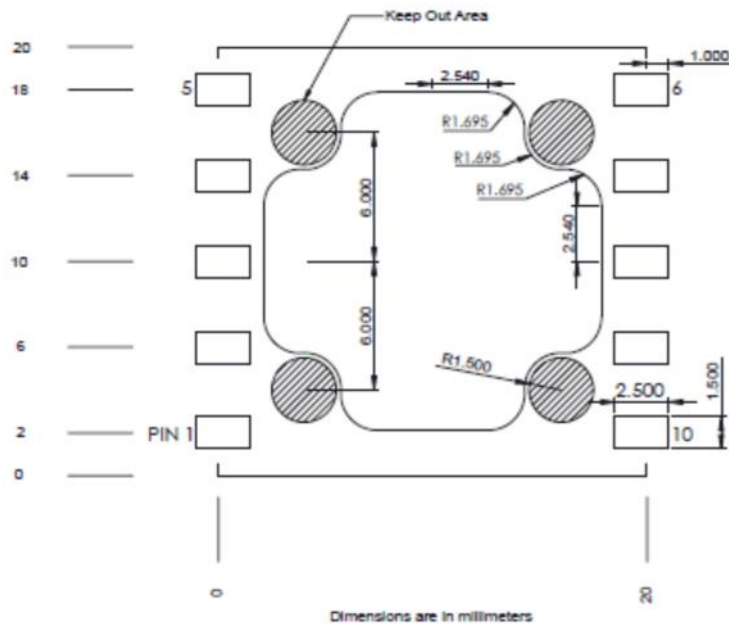
**TEMPERATURE EFFECT**

Temperature fluctuations have a predictable, easily compensated effect on the sensor signal. The figures at below shows the typical Temperature dependency the output and baseline of 3SP\_Ethanol\_1000 sensors under constant humidity of 40-50 % RH. This is a very uniform and repeatable effect, easily compensated for in hardware or software.



**MARKING INFORMATION**

Sensors have serial numbers printed with individual NIST Traceable calibration data printed on each sensor. (CO version shown)


**PCB LAYOUT GUIDELINES**


PIN	CONNECTION
1	WORKING
2	NC
3	NC
4	NC
5	REFERENCE
6	COUNTER
7	NC
8	NC
9	NC
10	WORKING

**IMPORTANT PRECAUTIONS**

All sensor designs are made for air monitoring @ 1 atm +/- 0.2 atm. As applications of use are outside our control, all information is given without legal responsibility. Customers should test under their own conditions to ensure the sensors are suitable for their requirements. Contact the factory to discuss any application beyond human breathable air to discuss specific concerns.

- Condensation and Water (1)
- Salt Water Contamination (1)
- High Temperature Operation (> 70C) for more than 1 month
- Low Humidity Operation (< 15% RH) for more than 3 months
- High Bias voltage
- Highly contaminated air over a prolonged period
- High levels of particles or soot (unless proper filtering is provided)

(1) Use of porous PTFE membrane or filter cap will address this concern)