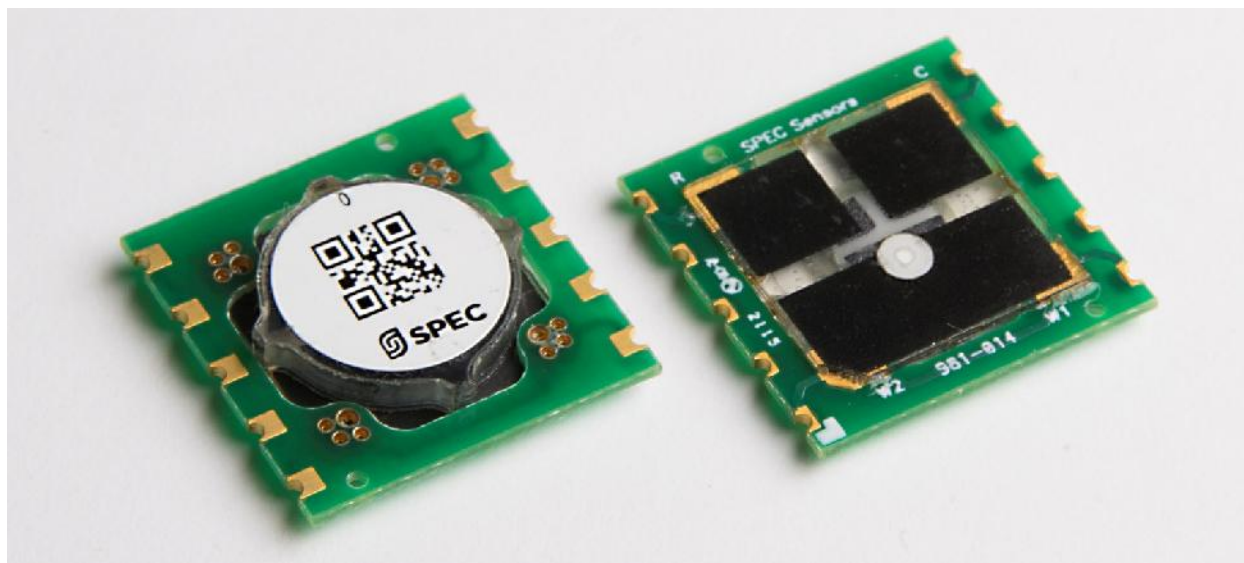


# IAQ\_100 C Package 110-802

February 2016

## 15x15 Indoor Air Quality Sensor 100 ppm C Package 110-802



### DESCRIPTION

SPEC Sensors' IAQ\_100 is a Screen Printed ElectroChemical sensor component specifically designed for the broad detection of gases associated with poor air quality: sulfides, alcohols, ammonia, odorous gases, and Carbon Monoxide.

### BENEFITS

- Zero Power Sensor
  - Sensor Circuit - < 10 uW max
- Cold operation - No Heating required
- Rugged Design- Not poisoned by sulfides, chlorides, NH3
- Stable Response– Not affected by humidity, CO2, N2, Ar, most saturated hydrocarbons, hexane
- Small Size& Low Profile - 20x20x3 mm
- Sensitive - In the ppm range
- Easy to Use - Linear Response
- Long Life - 10 years expected life
- Fast Response - < 20 seconds
- ROHS Compliant

### APPLICATIONS

- Bad Air Quality Detection
- Indoor Air Monitor
- Air Purifier Controls
- Weather Stations
- Internet of Things
- Smart Homes
- Early Fire Detection
- Leak Detection
- HVAC Ventilation Control

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## SPECIFICATIONS

<b>Measurement Range</b>	0 to 100 ppm (calibrated as CO equivalents)
<b>Response Time to 90%</b>	< 20 seconds typical
<b>Sensitivity</b>	12 +/- 3 nA/ppm (CO equivalents)
<b>Expected Operating Life</b>	> 5 years (10 years @ 23+/-3C; 40+/-10% RH)
<b>Operating Temperature Range</b>	-10 to 40 C (0 to 40 C continuous)
<b>Operating Humidity – non-condensing</b>	0 to 100% RH (15 to 95% continuous)
<b>Power Consumption</b>	< 50 uW circuit & ambient gas dependent
<b>Zero Drift (Over Temperature Range)</b>	+/- 2 ppm (CO equivalents)
<b>Lower Detection Limit</b>	0.1 ppm CO (depends on the gas & electronics)

## CROSS SENSITIVITY

This sensor exhibits sensitivity to a wide range of gases. The following table lists the relative response of common gases.

Gas	ppm	Typical Response (as ppm CO)
Carbon Monoxide	100	100
Hydrogen Sulfide	100	370
Ozone	100	-70
Nitrogen Dioxide	100	-50
Sulfur Dioxide	100	70
Ethanol	100	140
Nitric Oxide (NO)	100	80
Chlorine	100	-50
n-Heptane	100	0
Ammonia	100	1
Methane	100	0
Saturated Hydrocarbons	100	0

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## IMPORTANT PRECAUTIONS

All sensor designs are made for air monitoring @ 1 atm +/- 0.2 atm. Because applications of use and device implementation are outside our control, SPEC Sensors cannot guarantee performance in a given device or application, and disclaims any and all liability therefore. **Customers should test under their own conditions to ensure the sensors are suitable for their requirements.**

Contact the factory to discuss specific concerns that might damage the sensor performance or life.

- 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 may address this concern)

## MARKING INFORMATION

All gas sensors are tested and marked at the SPEC Sensors factory. Sensors include a label with an alpha-numeric code and a two-dimensional bar code. The codes include the information indicated in the table below.

	Unique Serial Number	Sensor Part Number	Target Gas	Date Code (YYMM)	Sensitivity Code (nA/ppm)
Alpha-Numeric Code:	110201 CO 1501 5.57				
2D Code:	010715010101 110201 CO 1501 5.57				

## STORAGE CONDITIONS

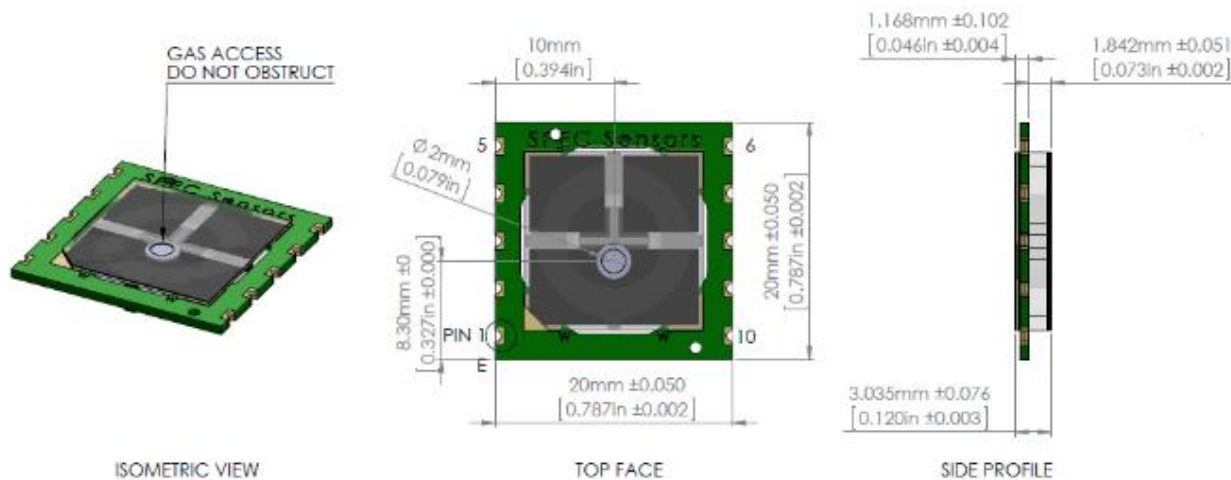
The calculated shelf life for sealed, packaged components is 12 months from the pack seal date, when stored in the factory-sealed bag under the following conditions:

- A. Temperature: 5 to 25 °C
- B. Relative Humidity: 20 to 80%
- C. Pressure: 1 ± 0.2 atm
- D. Storage Time: 12 months

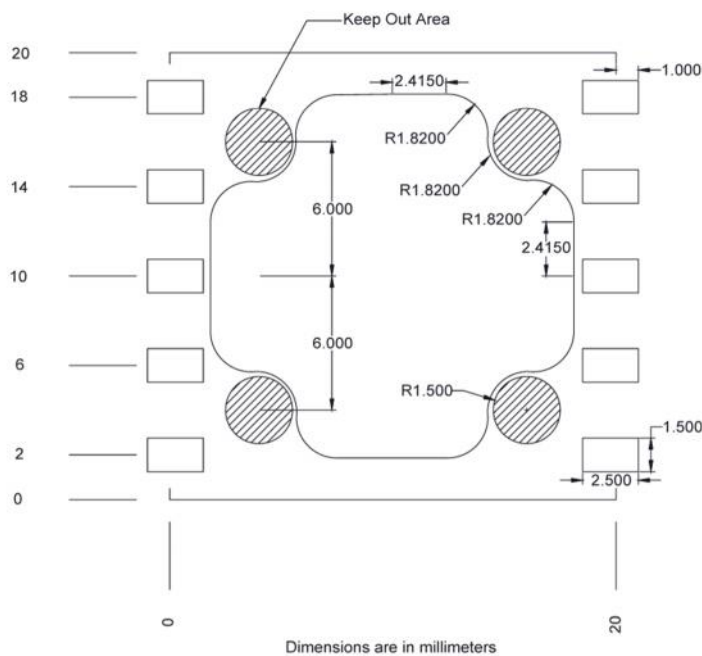
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## DIMENSIONS



## 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