



# SM5391-BBE-S-001-000 Differential Pressure Sensor

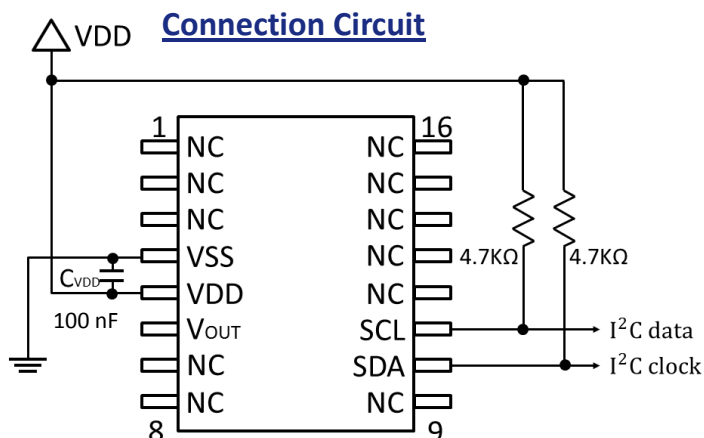
The SM5391-BBE-S-001-000 is a 16-bit digital & analog, low pressure MEMS sensor offering state-of-the-art pressure transducer technology and CMOS mixed signal processing technology to produce a differential, fully conditioned, multi-order pressure and temperature compensated sensor in JEDEC standard SOIC-16 package with dual horizontal ports. The complete datasheet (40DS5860) and I2C Application Note (40AN7000) will be also available by contacting SMI Sales at (408) 577-0100 or [sales@si-micro.com](mailto:sales@si-micro.com).

Part number SM5391-BBE-S-001-000 is shipped in sticks and part number SM5391-BBE-T-001-000 is shipped in Tape and Reel.

## Sensor Specification

All parameters are specified at VDD = 3.3 V DC supply voltage at 25°C, unless otherwise noted.

| No. | Characteristic                      | Symbol              | Minimum | Typical | Maximum | Units  |
|-----|-------------------------------------|---------------------|---------|---------|---------|--------|
| 1   | Supply Voltage                      | VDD                 | 3.0     | 3.3     | 3.6     | V      |
| 2   | Supply Current                      | IDD                 |         | 4.5     |         | mA     |
| 3   | Calibration Pressure                | $P_{MIN} / P_{MAX}$ | -1      |         | 1       | psi    |
| 4   | Compensated Temperature             | $T_{COMP}$          | -20     |         | 85      | °C     |
| 5   | Digital Pressure Output @ $P_{MIN}$ | $DOUT_{MIN}$        |         | -26214  |         | Counts |
| 6   | Digital Pressure Output @ $P_{MAX}$ | $DOUT_{MAX}$        |         | 26214   |         | Counts |
| 7   | Digital Full Scale Span             | DFS                 |         | 52428   |         | Counts |
| 8   | Resolution (Digital Output)         |                     |         | 16      |         | Bits   |
| 9   | Update Rate                         |                     |         | 2000    |         | S/sec  |
| 10  | Bandwidth                           | BW                  |         | 125     |         | Hz     |
| 11  | Digital Output Accuracy             | DACC                | -1      |         | +1      | %FS    |
| 12  | Analog Pressure Output @ $P_{MIN}$  | $AOUT_{MIN}$        |         | 10      |         | %VDD   |
| 13  | Analog Pressure Output @ $P_{MAX}$  | $AOUT_{MAX}$        |         | 90      |         | %VDD   |
| 14  | Analog Full Scale Span              | AFS                 |         | 80      |         | %VDD   |
| 15  | Analog Output Accuracy              | AACC                | -1.5    |         | +1.5    | %FS    |



## Pinout table

| Pin No. | Pin function            | Pin No. | Pin function |
|---------|-------------------------|---------|--------------|
| 1       | NC                      | 9       | NC           |
| 2       | NC                      | 10      | SDA          |
| 3       | NC                      | 11      | SCL          |
| 4       | VSS                     | 12      | NC           |
| 5       | VDD                     | 13      | NC           |
| 6       | VOUT<br>(analog output) | 14      | NC           |
| 7       | NC                      | 15      | NC           |
| 8       | NC                      | 16      | NC           |

\*For package dimension information, please refer to the complete datasheet.