## Electrical Specifications

| Parameter | Conditions | Value |
|---|---|---|
| Average current[10] | Update interval 2 s | 19 mA |
| Max. current | During measurement | 75 mA |
| DC supply voltage ($Vdd_{min}$ - $Vdd_{max}$) | Min. and max. criteria to operate SCD30 | 3.3 V – 5.5 V |
| Interface | - | UART (Modbus Point to Point), PWM and $I^2C$ |
| Input high level voltage ($V_{IH}$) | Min. and max. criteria to operate SCD30 | 1.75 V – 5.5 V |
| Input low level voltage ($V_{IL}$) | Min. and max. criteria to operate SCD30 | - 0.3 V – 0.9 V |
| Output low level voltage ($V_{OL}$) | $I_{IO}$ = +8 mA, Max. criteria | 0.4 V |
| Output high level voltage ($V_{OH}$) | $I_{IO}$ = -6 mA, Min. criteria | 2.4 V |

**Table 4** SCD30 electrical specifications

## Operation Conditions, Lifetime and Maximum Ratings

| Parameter | Conditions | Value |
|---|---|---|
| Temperature operating conditions | Valid for $CO_2$ sensor. | 0 – 50°C |
| Humidity operating conditions | Non-condensing. Valid for $CO_2$ sensor. | 0 – 95 %RH |
| DC supply voltage | Exceeding specified range will result in damage of the sensor. | - 0.3 V – 6.0V |
| Voltage to pull up selector-pin | Max criteria | 4.0 V |
| Storage temperature conditions | Exceeding specified range will result in damage of the sensor. | - 40°C – 70°C |
| Maintenance Interval | Maintenance free when ASC field-calibration algorithm[11] is used. | None |
| Sensor lifetime | - | 15 years |

**Table 5:** SCD30 operation conditions, lifetime and maximum ratings

[10] Average current including idle state and processing. Other update rates for small power budgets can be selected via the digital interface.
[11] $CO_2$ concentrations < 400 ppm may result in sensor drifts. For proper function of ASC field-calibration algorithm SCD30 has to be exposed to air with 400 ppm regularly.

## 2 Package Outline Drawing

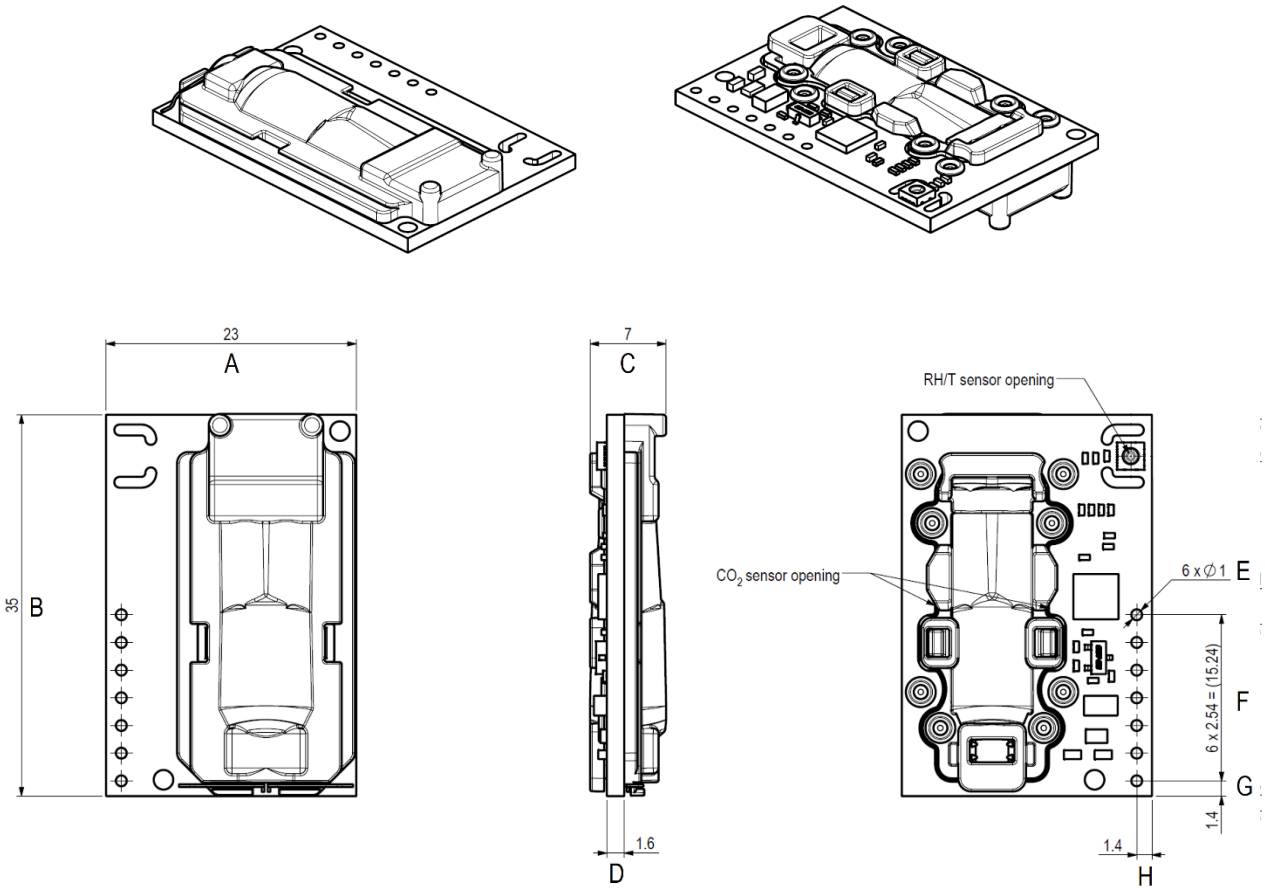


**Figure 1** Product outline drawing of SCD30. Pictures on the left show top-view, pictures on the right bottom-view.

Sensor height is 7 mm at the thickest part of SCD30. The weight of one SCD30 sensor is 3.4 g.

**Table 6**: Nominal dimensions and tolerances SCD30

| Dimension | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| Nominal [mm] | 23.00 | 35.00 | 7.00 | 1.60 | 1.00 | 15.24 | 1.40 | 1.40 |
| Tolerance [mm] | ± 0.20 | ± 0.20 | ± 0.70 | ± 0.20 | ± 0.15 | ± 0.30 | ± 0.15 | ± 0.15 |