

SCL3300

## MEMS 3-axis Inclinometer

A small surface mounted MEMS sensor offering best-in-class characteristics for inclination measurements.



Size



7.6 x 3.3 x 8.6 mm

Murata Electronics Ref.: SCL3300fl\_1

### Features

- 3-axis inclination sensor with digital true inclination angle output
- Four user selectable measurement modes for sensor performance optimization for different applications and their requirements
- Ultra-low noise density for high measurement resolution
- Mechanically damped sensing element design for excellent vibration robustness
- Extensive self-diagnostic features
- SPI digital interface
- 40 °C to +125 °C operating range
- Proven capacitive 3D-MEMS technology

### Applications

SCL3300 is targeted at applications demanding high stability with tough environmental requirements.

Typical applications include:

- Leveling
- Tilt sensing
- Machine control
- Structural health monitoring
- Inertial measurement units (IMUs)
- Robotics
- Positioning and guidance systems

### Typical Performance Overview

| Parameter                     | SCL3300-D01      |               |                                                          |            |
|-------------------------------|------------------|---------------|----------------------------------------------------------|------------|
| Operating Range               | -40°C ... +125°C |               |                                                          |            |
| Supply voltage                | 3.0V ... 3.6V    |               |                                                          |            |
|                               |                  | Range:        | Sensitivity:<br>Acceleration output / Inclination output | Bandwidth: |
| Measurement Mode Options      | 1                | ± 1.8g / ±90° | 6000 LSB/g / 182 LSB/°                                   | 40 Hz      |
|                               | 2                | ± 3.6g / ±90° | 3000 LSB/g / 182 LSB/°                                   | 70 Hz      |
|                               | 3, 4             | ± 0.9g / ±10° | 12 000 LSB/g / 182 LSB/°                                 | 10 Hz      |
| Offset Temperature Error      | ±0.005°/°C       |               |                                                          |            |
| Sensitivity Temperature Error | ±0.3%            |               |                                                          |            |
| Noise density                 | Mode 4           | 0.001°/√(Hz)  |                                                          |            |