

SCH16T-K20 Gyroscope and Accelerometer

6-DOF Inertial Sensor with New Stable, Low Noise Accelerometer MEMS, and Improved Gyroscope

Features

- New stable, low noise accelerometer with down to $33 \mu\text{g}/\sqrt{\text{Hz}}$ noise density and $\pm 8 \text{ g}$ measurement range
- Improved gyroscope offset over temperature
- Gyro bias instability down to $0.3 \text{ }^\circ/\text{h}$
- Advanced self-diagnostic system automatically reports sensor status in every SPI frame, leveraging over 200 internal monitoring signals
- Pin-to-pin and software compatibility with other SCH16T series sensors
- SafeSPI2.0 interface with 20-bit data frame

Technology

- The new accelerometer MEMS uses a double-differential measurement principle, familiar from Murata SCA3400 series. The MEMS enables extremely stable offset and sensitivity over time and temperature.
- Groundbreaking SCH16T MEMS gyroscope delivers ultra-low noise density and stability over temperature with improved calibration.

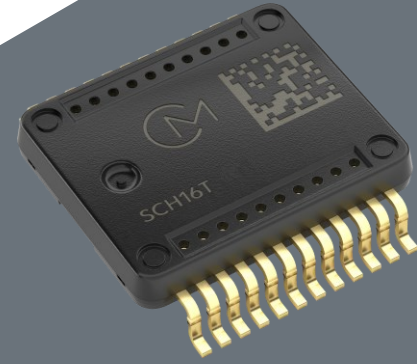
Applications

- Robotic motion control
- Camera image stabilization
- Heavy machine precision control and guidance
- Platform stabilization and levelling

Specifications

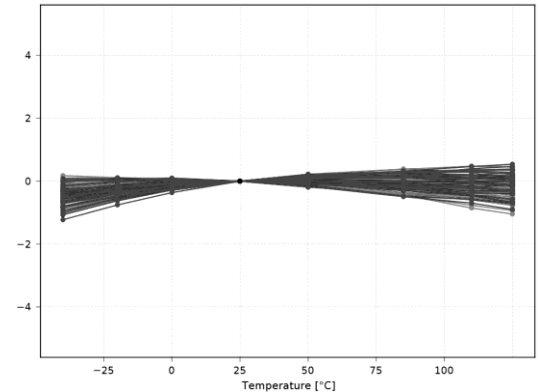
Parameter	Ω xyz	Acc xyz
Measurement range	$\pm 300 \text{ }^\circ/\text{s}$	$\pm 8 \text{ g}$
Noise density (typ)	0.0004 (XY) 0.0006 (Z) $(^\circ/\text{s})/\sqrt{\text{Hz}}$	37 (XY) 33 (Z) $\mu\text{g}/\sqrt{\text{Hz}}$
Bias instability (typ)	0.3 $^\circ/\text{h}$	13 μg
Allan deviation minimum divided by 0.664		
Operating temperature	-40 $^\circ\text{C}$ to +110 $^\circ\text{C}$	

More details: [SCH16T Website](#)



11.8 mm x 13.4 mm x 2.9 mm
(l x w x h) SOIC-24

Accelerometer, Offset error over temperature (mg)



Gyroscope, Allan deviation ($^\circ/\text{h}$)

