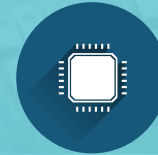


Component



Angular Rate Sensor Element FG5

Fast Facts

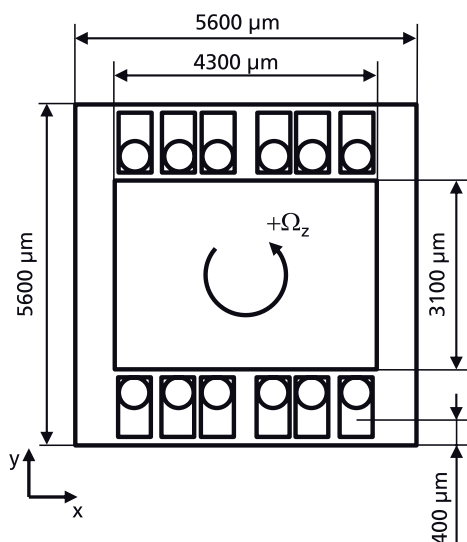
- Highly doped silicon (0.01 ... 0.05 Ωcm)
- Sensitive to angular velocity about z-axis
- Working frequency 12 kHz
- Quality factor > 180,000
- Differential output sensitivity $\approx 0.3 \text{ fF}/^\circ/\text{s}$

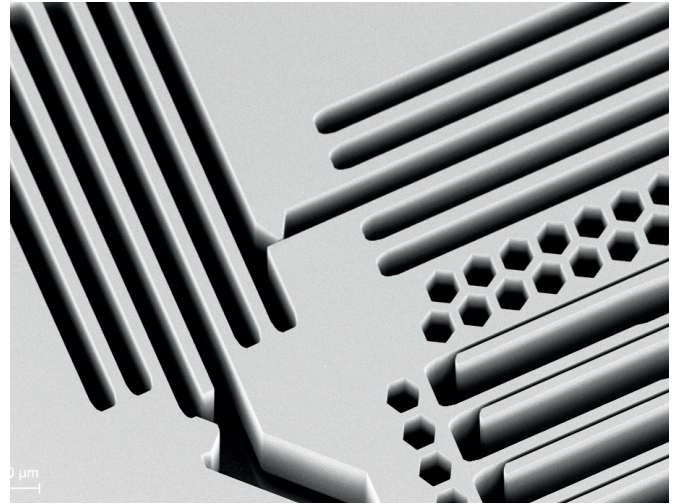
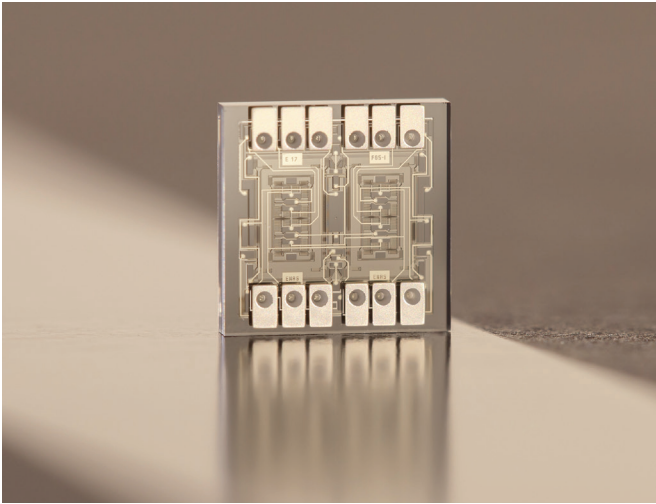
General Description

The FG5 is a micromechanical sensor element for the measurement of rotational velocity about the z-axis. The MEMS sensor element consists of a tuning fork mechanical structure with double decoupled drive and sense modes. The primary mode (drive) is excited in anti-phase x-direction. The secondary mode (sense) is a movement in y-direction. With the presence of an external rate about the z-axis, the precession of the Coriolis masses lead to an anti-phase movement in y-direction which is the measure for the angular rate signal. The working principle of the vibrating mass gyroscope is based on capacitance changes. The MEMS itself is a Glass-Si-Glass stack with a height of approx. 750 μm .

Suggested Applications

- Inertial measurement units
- North finding
- Navigation
- Medicine (motion tracking)





Specifications

	Drive Mode		Sense Mode		Unit
	Exc	Det	Exc	Det	
# of Accessible Electrodes	2	2	4	2	
C0 per Electrode	3.93	0.47	0.89	2.86	pF
Sensitivity	110	13	380	1240	fF/μm

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All information contained in this fact sheet is preliminary and subject to change. Furthermore, the described component is not a commercial product.

