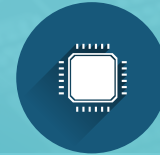


Component



Angular Rate Sensor Element FG6

Fast Facts

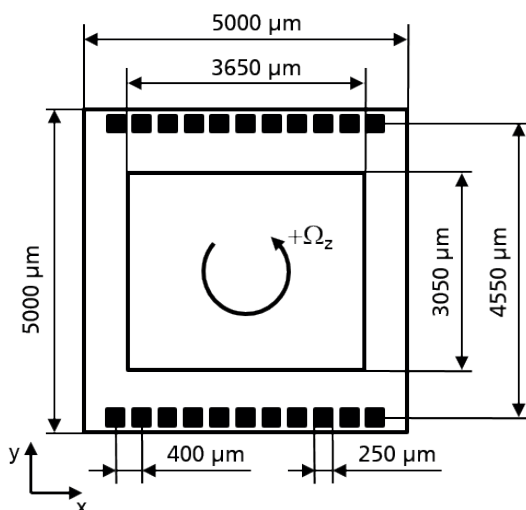
- Highly doped silicon ($0.01 \dots 0.05 \Omega\text{cm}$)
- Sensitive to angular velocity about z-axis
- Working frequency 12 kHz
- Quality factor $> 160,000$
- Differential output sensitivity $\approx 0.3 \text{ fF}/^\circ/\text{s}$

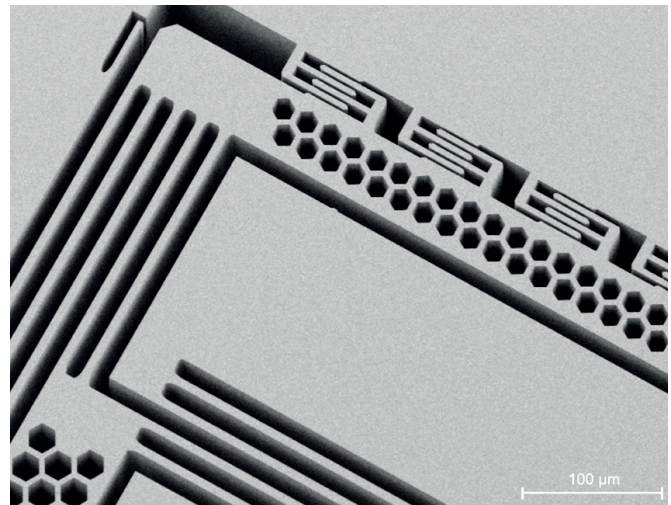
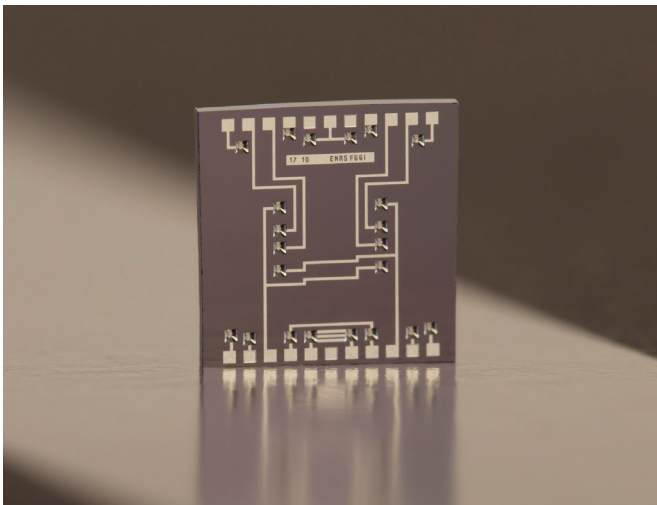
General Description

The FG6 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 full-silicon stack with a height of approx. $650 \mu\text{m}$.

Suggested Applications

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





Specifications

	Drive Mode		Sense Mode		Unit
	Exc	Det	Exc	Det	
# of Accessible Electrodes	1	2	4	2	
C0 per Electrode	7.82	1.03	1.05	3.39	pF
Sensitivity	220	30	460	1480	fF/μm

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Photo acknowledgments:
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All information contained
in this fact sheet is prelimi-
nary and subject to change.
Furthermore, the described
component is not a commer-
cial product.