

The work presents the development of a tri-axial gyroscope based on rotating combdrives acting both as capacitive sensor and capacitive actuator. The sensor is planned to work in air and it is designed to be fabricated using the PolyMUMPs process. Waferlevel measurement results indicate that a fabrication yield of greater than 92 and a vacuum level of 100 mtorr have been achieved. The fabricated inertial sensors and the customized application-specific integrated circuits are encapsulated in a 5 mm 5 mm 1.3 mm quad-flat no-leads package using the plastic molding technology. The systemlevel characterization of the developed six-DOF inertial sensors have been implemented. Several reliability tests conducted according to the relevant JEDEC standards prove that the packaged sensors are highly reliable and robust for a wide range of operating environments.