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MEMS-Chip Business Struggles with Growing Pains

Sales to nearly double by 2013 after slipping 13% in 2009.

The big, bright market potential of semiconductors built with microelectromechanical systems (MEMS) technology is indisputable. Annual sales of MEMS-based sensor and actuator devices are expected to nearly double in four years, reaching \$7.3 billion in 2013, according to IC Insights' new *Special Study: MEMS 2010—A Realistic Look Beyond the Hype*. However, it's erroneous to portray the burgeoning MEMS segment as a utopian market opportunity, says the 80+ page report, which reviews factors that have impaired MEMS sales growth in recent years and provides a detailed forecast of revenues, unit shipments, and average selling prices (ASPs) for sensor and actuator product categories through 2013.

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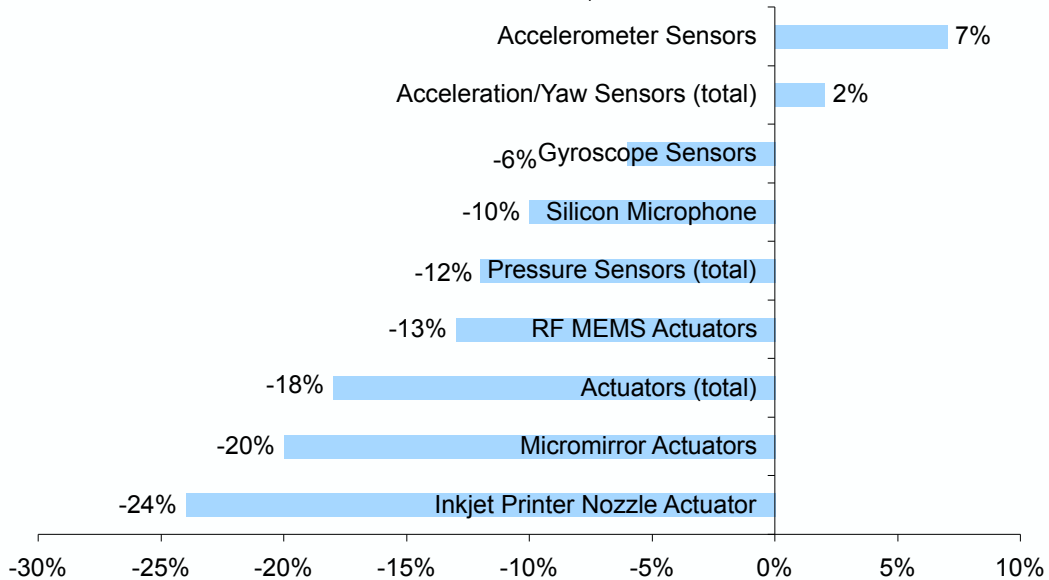
Rob Lineback
Sr. Market Research Analyst
IC Insights, Inc.
Phone: +1-817-731-0424
Email: rob@icinsights.com

To be certain, 2009 was the first major setback for the MEMS-based semiconductor market since it began spreading into high-volume commercial systems applications from its traditional base in military/aerospace and automotive electronics. IC Insights' new report shows worldwide sales of MEMS-based sensors and actuators falling 13% in 2009 to an estimated \$3.8 billion from \$4.4 billion in 2008. The drop is mostly due to the effects of the severe economic recession that pounded the entire semiconductor industry starting in 4Q08.

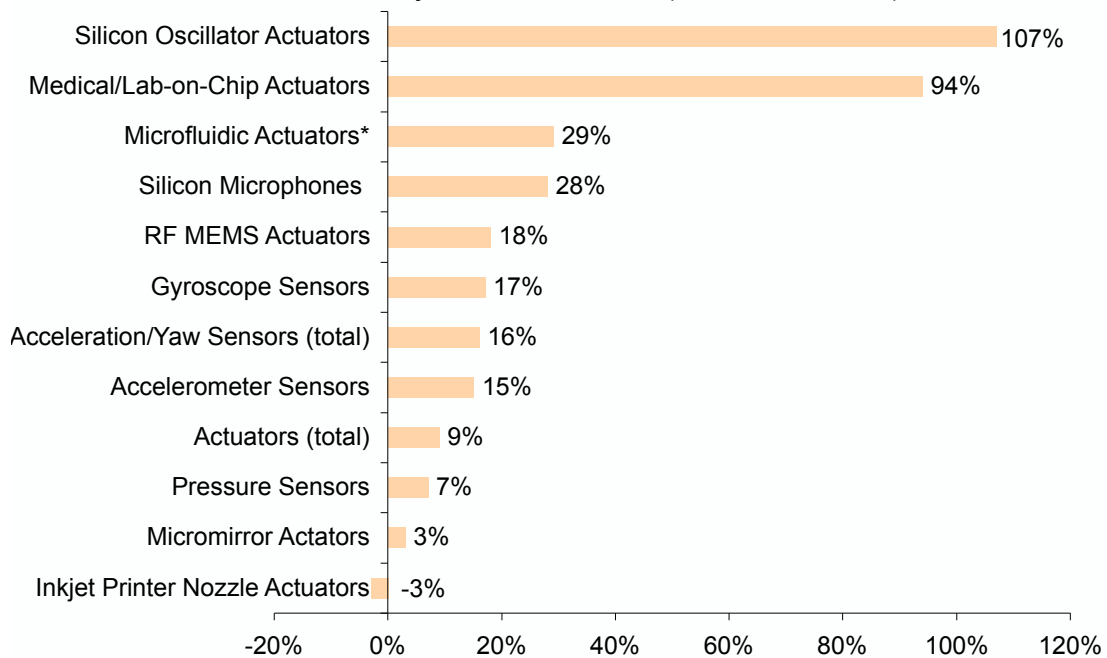
MEMS-based semiconductor sales are expected to rebound 17% in 2010 to \$4.4 billion, followed by strong 21% and 22% increases in 2011 and 2012, respectively, according to the new report. Figure 1 ranks the sales performances of MEMS-product categories in 2009 and compares that to the report's projected 2008-2013 compound annual growth rates (CAGR). The MEMS market overall is expected to increase by a CAGR of nearly 11% between 2008 and 2013 compared to a CAGR of just 6% for IC revenues, based on IC Insights' forecast.

How MEMS Sales Performance Stacks Up

2009 Sales Growth Forecast for MEMS-Based Products with Sales Over \$100M



Projected Annual Sales (CAGR 2008-2013)



Source: IC Insights

*Excludes printer nozzles & med/lab devices

Figure 1

While the stage is set for strong increases in MEMS product sales during the next four years, it is important to recognize that this fledgling market segment remains vulnerable to periods of oversupply and price erosion—just like any other integrated circuit or discrete semiconductor category. The new report shows that prior to 2009, the MEMS sensor/actuator segment suffered sales declines in two of the

previous four years (in 2005 and 2007) strictly due to market/inventory corrections and steep price erosions in several key MEMS product categories. These two down years for MEMS sales occurred when overall semiconductor revenues grew in 2005 and 2007. In recession-battered 2009, MEMS-based devices and ICs are expected to share equally in the pain of the semiconductor downturn with both markets forecast to decline 13%. MEMS chip sales suffered greatly in 2009 because key automotive and new consumer applications have been hit especially hard by the global economic downturn.

IC Insights' 2010 MEMS report says the expanding MEMS market continues to face growing pains as suppliers attempt to serve new high-volume commercial systems applications. Ironically, a major challenge facing the MEMS semiconductor segment is the amount of attention and wafer-production capacity that's being heaped onto the business worldwide. With traditional IC categories seeing a slowdown in annual growth rates since the late 1990s, more major semiconductor companies, pure-play IC foundries, and wafer fab equipment suppliers are shifting attention to the MEMS arena in order to boost revenues. The entry of large device suppliers into market segments pioneered by MEMS start-up companies is radically changing the dynamics of many emerging niches. In many cases, the increased competition is intensifying pricing pressure in product categories that have promised substantial annual revenue growth rates.

Report Details

IC Insights' new *Special Study: MEMS 2010—A Realistic Look Beyond the Hype* is an 80+ page report with 60+ figures and detailed analyses of trends and growth rates of MEMS-based sensors and actuator products through 2013. The report is available for \$1,490. Additional individual copies of the report sell for \$495 each. The study is also available under a multi-user corporate license for \$2,590. Visit <http://www.icinsights.com/prodsrvs/specialstudies/mems/> for more information.

About IC Insights

IC Insights, Inc., based in Scottsdale, Arizona USA, is dedicated to providing high-quality, cost-effective market research for the semiconductor industry. Founded in 1997, IC Insights offers coverage of global economic trends, the semiconductor market forecast, capital spending and fab capacity trends, product market details, and technology trends, as well as complete IC company profiles and evaluations of end-use applications driving demand for ICs.

Web Site: www.icinsights.com • **Phone:** +1-480-348-1133 • **E-mail:** info@icinsights.com