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MEMS Sensor/Actuator Growth Rate to Double in Next Five Years

New applications in consumer and portable systems accelerate sales, says new report

New motion-control user interfaces on consumer electronics and drop-detection/protection features in portable systems are helping to accelerate the growth of semiconductor devices built with microelectromechanical systems (MEMS) technology. Worldwide sales of MEMS-based semiconductor sensors and actuators are now expected to increase at a compound annual growth rate (CAGR) of 19% between 2007 and 2012, reaching \$9.7 billion in five years compared to \$4.1 billion in 2007, according to IC Insights' new *2008 Optoelectronics, Sensors, and Discretes (O-S-D) Report*. The forecast growth rate is a significant increase from the 9% CAGR between 2003 and 2007.

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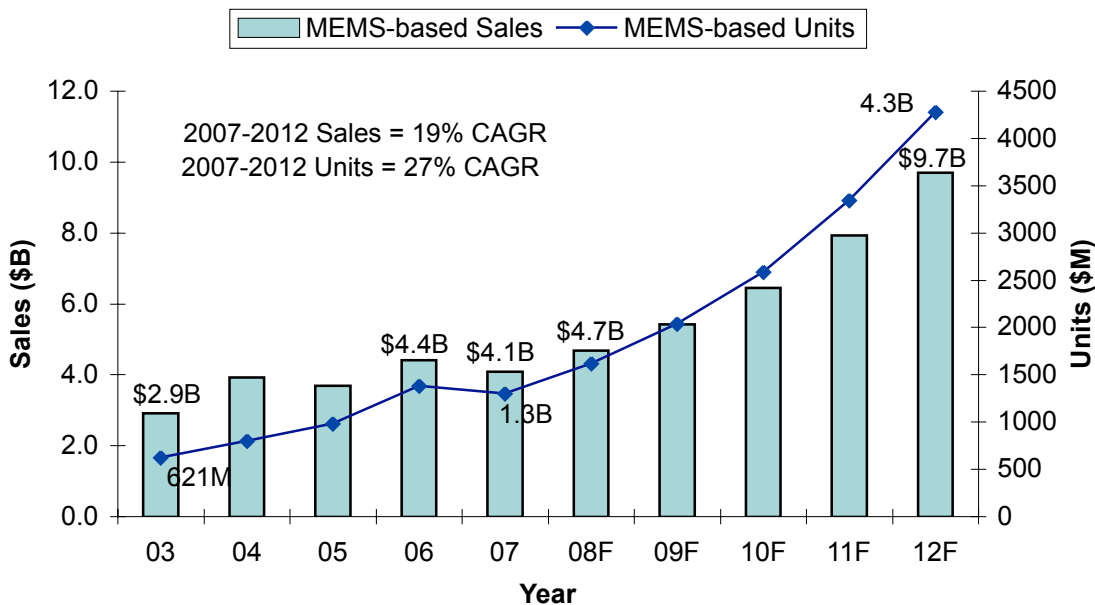
The *2008 O-S-D Report* shows that 80% of today's \$5 billion semiconductor sensor/actuator market is served by devices built with MEMS technology. In these devices, tiny MEMS structures perform transducer functions for taking measurements or initiating physical actions. Among these devices are pressure sensors, accelerometers, gyroscope chips, solid-state microphones, silicon MEMS oscillators, and a broad range of actuators, such as inkjet nozzles, micro-mirror display devices, biochips, and radio-frequency (RF) filters, including surface-acoustic-wave (SAW) components.

Until recently, MEMS-based devices—such as accelerometers and pressure sensors—have been heavily dependent upon the automotive market for growth, but new, high-volume applications in consumer products, cell phones, and other portable systems have significantly increased the potential for sales worldwide. For instance, a growing number of video-game controllers are using low-cost accelerometers and gyroscope devices to operate virtual reality software instead of traditional joysticks and buttons. In multimedia cell phones and digital music players, "shake control" is made possible with new accelerometers that integrate special functions for recognition of sudden movement as user inputs and control. Accelerometers are also being used in portable systems to detect freefall and take immediate action to protect hard-disk drives from damage whenever units are dropped.

IC Insights' new report concludes that unit shipments of MEMS-based sensors and actuators will rise at a CAGR of 27% between 2007 and 2012, reaching 4.3 billion devices in five years compared to 1.3 billion in 2007 (Figure 1). In this same period, total sensor/actuator unit shipments are forecast to increase at a CAGR of 23%, with 12.1 billion devices being shipped in 2012 compared to 4.3 billion in 2007. Overall, the sensor/actuator market is expected to reach \$11.9 billion, counting all types of technologies.

MEMS-based actuators accounted for 54% of the \$5.1 billion sensor/actuator market in 2007, according to the *O-S-D Report*, which breaks down the large actuator category by device types and applications. Actuator sales are forecast to grow at a CAGR of nearly 20% in the 2007-2012 timeframe and will \$6.8 billion in 2012 compared to \$2.8 billion in 2007. Meanwhile, the acceleration/yaw-sensor category will get a major boost from consumer and portable systems applications using low-cost accelerometers in the coming years. This sensor category's growth rate is expected to slightly exceed that of actuators and reach \$2.0 billion by 2012 compared to \$811 million in 2007, based on the *O-S-D Report's* forecast.

MEMS-based Sensor & Actuator Growth



Source: WSTS, IC Insights

Figure 1

Report Details

The 2008 edition of the O-S-D Report extends IC Insights' coverage of the semiconductor industry with detailed analysis of trends and growth rates in the optoelectronics, sensors/actuators, and discretes market segments. The 260-page 2008 report is available for \$2,190 in either a three-ring binder or CD-ROM format. Additional individual copies of the CD-ROM or binder sell for \$495 each. The report is also available under a multi-user corporate license for \$5,490.

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.

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