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SPECIALTY SEMICONDUCTOR PACKAGING

2007 EDITION

**A Strategic Report on the Packaging of MEMS
and Other Special Semiconductor Products**

Report Coverage

■ MEMS

- ◆ Microphones
- ◆ Accelerometers/Gyroscopes
- ◆ Pressure Sensors
- ◆ Actuators
- ◆ Others

■ Image Sensors

■ Thermal Management

Report Highlights

■ Technology Reviews

■ New Product Highlights

■ Market Forecasts, 2007–2011

■ Industry Update



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Specialty Semiconductor Packaging

Synopsis

Although it is a relatively new technology, the MEMS (micro-electromechanical systems) market for actuators, accelerometers, gyroscopes, pressure sensors, and microphones has become a substantial force in the semiconductor industry. Other MEMS products also show promise.

The manufacturing processes of integrated circuits (ICs) are the model used for the manufacture of MEMS devices. Not only are MEMS being created on wafers, but they are being combined in most cases with ICs within variations of standard IC packages. As such, MEMS package assembly has become a topic of great interest to the overall semiconductor packaging industry.

Electronic Trend Publications (ETP) in its report, **Specialty Semiconductor Packaging, 2007 Edition**, uses information from semiconductor industry insiders to present the most realistic picture available regarding packaging technologies and markets for key MEMS products. In addition to MEMS devices, this report covers image sensors and thermal management.

Chapter 1 of the report explains the scope and methodology of the report, while Chapter 2 summarizes the report's key market data.

Chapter 3, **The State of the Industry**, reviews the status of the semiconductor industry as of the end of the third quarter of 2007. ETP currently believes that there are two global issues—world financial markets and energy prices—that are currently threatening the health of the worldwide semiconductor industry.

Chapter 4, **Image Sensors**, presents an overview of image sensor history and technology, followed by highlights of participating companies and their image sensor products. Forecasts are provided for

the packages used by image sensors, including units, package assembly prices, average I/O counts, average assembly costs, and package assembly revenue.

Chapter 5, **MEMS**, presents information on the sensor and actuator products that define the majority of the robust MEMS market. Products include accelerometers and gyroscopes, pressure sensors, microphones, and various actuators. Forecasts of these MEMS markets include units, package assembly prices, average I/O counts, average assembly costs, and package assembly revenue.

Chapter 6, **Thermal Management**, provides a review of current developments and recent product introductions in thermal management. Removing heat from ICs, as they become more powerful and complex, is an ever more critical issue. This chapter also includes a qualitative overview of potential markets.

Throughout chapters 4–6, the newest packaging products and latest research from numerous companies and organizations are described.

Trends in the packaging of the semiconductor products covered in this report are important to your business. **Specialty Semiconductor Packaging, 2007 Edition** will provide you with an effective and economical tool for assessing the future of these markets. Please take a few moments to review the report's outline on the following pages. The report sells for \$2495, with extra copies \$350. Each copy includes both a hardbound version and a single-user PDF file on CD-ROM. Corporate licensing is available—contact us for pricing. Order your copies today!

About the Author

Sandra Winkler is the senior analyst for IC packaging at Electronic Trend Publications (ETP). She began her analyst career as an independent consultant to the telecommunications industry nearly 20 years ago. Since 1995, Ms. Winkler has authored all of ETP's widely cited reports on IC packaging. She has spoken at numerous industry conferences and is a contributing editor for *Chip Scale Review* magazine. Ms. Winkler has an MBA from Santa Clara University.

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Analog Devices	InvenSense	Seiko Epson Corporation
ASE	Jazz Semiconductor	Semefab (Scotland) Ltd.
Atmel	Knowles Acoustics	SEMPAC
Bennington Microtechnology Center	Kyocera	Sensorcon
Bosch Automotive Electronics	Matsushita Electric Works	Silex Microsystems
Bosch Sensortec	Mems Technology	SiliconFile Technologies
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Carsem	Micralyne	Sony
Colibrys	microFAB Bremen	Spectra-Mat
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Fraunhofer Institute	Omnivision	Tronics Microsystems
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GE Sensing	Panavision	University of California at Davis
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