Okmetic Oyj

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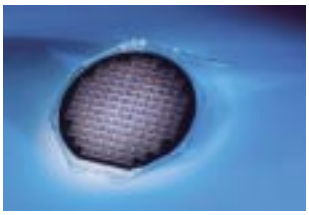
1. Okmetic in general

Okmetic is the world's leading supplier of silicon wafers for high-performance MEMS sensor manufacturing. We have acted on the MEMS-market for over twenty years and in Japan since late 1980s. Okmetic has a global customer base and sales network, productions plants in Finland and the US, and contract manufacturers in Japan and in China. Okmetic K.K. in Tokyo serves our Japanese customers and gives technical support. Our team is ready to respond to the growing demand for MEMS wafers in Japan.



Okmetic's solution is our 100-200 mm SOI product range with preprocessed structures

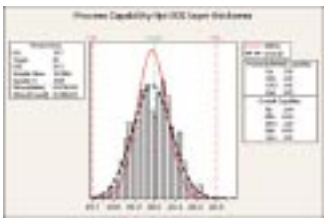
2. Products designed for MEMS sensor manufacturing

Key figures
(1 Jan – 31 Dec 2007 1,000 euro)

Net sales	64,652
Operating profit	7,121
% of net sales	11
Personnel at the end of the period	357

By developing more intelligent substrates a silicon wafer supplier can help to save costs and streamline microsystem fabrication. Okmetic BSOI (Bonded Silicon on Insulator) product family includes enhanced SOI products that meet the most demanding customer requirements. They enable the development of smaller devices, while allowing for greater freedom of design and improved yield. We supply all wafer sizes from 100 mm to 200 mm.

Okmetic BSOI wafers improve cost-efficiency across processes and boost performance. Together with modern manufacturing processes (e.g. DRIE) they provide new opportunities for innovation and exceptional design. For the most demanding designs, Okmetic 0.3-SOI wafers with tighter device layer thickness tolerance offers even more benefits in terms of device performance.



Device layer thickness variation (9 points measurements) of 150 mm SOI wafer.

Okmetic C-SOI (Cavity SOI) is a bonded SOI wafer with pre-etched cavities. Embedded under the thin silicon diaphragm, these cavities take device design to the next level. Our C-SOI solutions are optimized to fit the customer's device design.

Cavity SOI advantages

1. More freedom in element design.
2. Simplified manufacturing process
3. Improved electrical and mechanical properties
4. Integration of IC and MEMS process possible
5. Yield and material responsibilities at material supplier

Okmetic G-SOI (Gettered SOI) wafers support full CMOS-MEMS integration. Their enhanced gettering performance ensures effective binding of impurities to guarantee maximized yield and design flexibility in CMOS processes.

Gettered SOI advantages

1. Proven gettering ability
2. Better gate oxide integrity than in standard BSOI wafers
3. Compatible with CMOS processing on thick SOI
4. No impact on active layer thickness uniformity or other BSOI characteristics

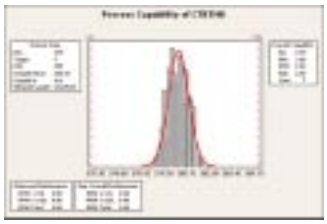
Epitaxial wafers

Okmetic epitaxial wafers offer superior layer uniformity and surface quality, as well as ideal epi thickness. In anisotropic wet etching of silicon, Okmetic epitaxial layers can be used as an etch stop in both electrochemical (N/P interface) and chemical (stress-free Ge co-doped P++) etch processes.

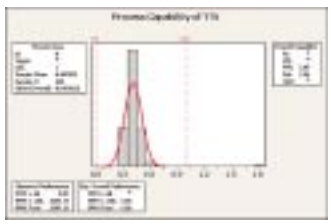
Double and single side polished wafers

Okmetic SSP (single side polished) and DSP (double side polished) wafers both feature outstanding off-orientation accuracy and MEMS-optimized crystal quality. In addition, our DSP wafers boast superior flatness and thickness variation that enable accurate bulk micromachining and double-sided lithography.

DSP wafers are also widely used as cap wafers in wafer level packaging.



Center point thickness variation of 150 mm DSP wafer.



Total thickness variation (TTV) of 150 mm ultra flat DSP wafer.

Boost performance with MEMS-optimized silicon wafers

Okmetic's way of conducting business is based on monitoring and analyzing the future needs and material solutions of our customers industries. With the widest product selection on the market, we offer silicon solutions for the rapidly growing and evolving MEMS market.

For more information please contact Okmetic K.K. and visit www.okmetic.com

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