



Semiconductor Insights Recognizes Toshiba with 2005 INSIGHT Award for Most Innovative Non-Volatile Memory

<http://www.tmcnet.com/submit/2005/May/1141995.htm>

OTTAWA --(Business Wire)-- May 9, 2005 -- Semiconductor Insights (SI), the leader in technical and patent analyses of integrated circuits and structures, today announced that it has awarded Toshiba's 4Gb multi-level cell (MLC) NAND flash in 90nm process the 2005 INSIGHT Award for Most Innovative Non-Volatile Memory. This category is co-sponsored by Semico Research Corporation. The Toshiba device is the first 4Gb monolithic flash seen by SI, and arguably the only one in the market. As well, Toshiba is the second vendor to successfully realize commercial flash production at the 90nm node, following Samsung. "Toshiba has really surpassed itself by producing the first single chip, 4Gb flash device," said Edward Keyes, Vice President and CTO for SI. "Equally impressive is their use of two bits per cell technology at the leading edge 90nm technology node. Normal practice for MLC vendors is to hedge their bets and hold back one generation."

Keys to the flash market are density, cost, and read/write performance. There are two rival flash technologies - NAND and NOR. NAND offers large storage capacity at a cost effective price, while NOR delivers high-speed code execution. The battle for market dominance between NAND and NOR hinges on the evolving and converging mobile device market which is seeking solutions with advantages from both technologies. "No other semiconductor market is growing as fast as NAND is today," said Jim Handy, Director of Nonvolatile Memory Services at Semico. "NAND became the second-largest memory after DRAM in Q1 of this year. This market is only open to serious contenders with great technology and superb manufacturing. Semiconductor Insights' technology analysis shows that Toshiba shines in those areas."

SI recently analyzed Toshiba's TH58NVG3D4BTGI0 2-stacked, 4Gb 90nm MLC NAND flash. SI's analysis revealed a die size of 137mm², making Toshiba the current density leader in flash and neutralizing its closest NAND competitor, a 90nm 2Gb single bit cell (SBC) flash with a 144mm² die size from Samsung. "With a leading edge density and process technology, Toshiba's 4G NAND flash is extremely well positioned in the rapidly growing and highly competitive consumer device market", said Keyes. "This device is a significant milestone for Toshiba's flash program and creates a roadmap for the future."

Finally, in recognition of the cost-performance leadership displayed by Spansion's 1.8-volt 256Mb MirrorBit NOR flash in 110nm process, SI has awarded Spansion with an honorable mention in this category.

For a complimentary Insight Report on the Toshiba or Spansion flash devices, please visit www.semiconductor.com.

BACKGROUND INFORMATION:

About the INSIGHT Awards

<http://www.semiconductor.com/insightawards/index.asp>

About Semiconductor Insights

http://www.semiconductor.com/about_si/index.asp