

Toshiba And SanDisk Celebrate Construction Of 300mm Wafer Fab Building For NAND Flash Memory

February 22 2005

Toshiba Corporation and SanDisk Corporation marked the completion of an advanced wafer fabrication facility at Toshiba's Yokkaichi Operations with a traditional ceremony and reception. The new fab is expected to come on line in the second half of CY2005, ahead of the original schedule, and produce NAND flash memories on 300mm wafers.

Responding to rising demand for NAND, a versatile non-volatile memory used in a wide range of digital electronic devices, Toshiba and SanDisk, strategic collaborators in NAND flash memory development and production, initiated construction of the fab in April 2004. The total investment in the new fab, called Fab 3, is expected to approach 270-billion yen (approximately US\$2.6 billion) by the end of March 2007. Flash Partners, Ltd., a Toshiba-SanDisk venture established in September 2004, 50.1% owned by Toshiba and 49.9% by SanDisk, will fund the advanced manufacturing equipment to be installed in Fab 3.

Commenting on the new facility, Mr. Masashi Muromachi, Corporate Vice President of Toshiba Corporation and President & CEO of Toshiba's Semiconductor Company, said, "We are very happy to complete the construction of this new state-of-the-art NAND flash fab in collaboration with SanDisk. We believe the NAND market will see annual growth rates over 30% from 2004 to 2008, from 700-billion yen to 2,100-billion yen, and we expect to see approximately 200% annual

growth in bit storage capacity. We expect the new fab will assure our responsiveness to growing demand for higher-density NAND flash in an increasingly strong market."

Dr. Eli Harari, president and chief executive officer of SanDisk Corporation, said, "I am greatly honored to represent SanDisk today in this milestone event. Fab 3 is a testimony to the success of the relationship between Toshiba and SanDisk, two highly innovative companies that have pioneered the flash technology that is enabling so many new applications in consumer electronics and mobile markets. With this large-scale investment, SanDisk is expressing our commitment to expanding NAND production at Toshiba and in Japan. We look forward to working together to make Fab 3 achieve its full potential as a highly competitive, leading-edge manufacturing fab in the second half of this decade."

The 300mm-wafer fab is expected to start production in the second half of CY2005 and is planned to quickly ramp up output to 10,000 wafers a month by late 2005. Capacity will then be expanded as dictated by market demand to up to 40,000 wafers a month by the first half of CY2007. Output during each phase of expansion is expected to be equally shared between Toshiba and SanDisk. The fab still has space to expand capacity, and further investment could take output to as high as 62,500 wafers a month.

At the time of production start-up, the new facility will employ 90-nanometer (nm) process technology jointly developed by Toshiba and SanDisk. The 300mm-wafer fab will migrate to the 70nm process in the first half of CY2006, ahead of the original schedule, following the first mass-production of NAND flash memory with 70nm process technology in existing Yokkaichi 200mm-wafer fab in 2005. The 300mm fab is also slated to mass-produce NAND flash memory based on 55 nm process technology in late CY2006.

Environmentally conscious design will reduce emissions of carbon dioxide and perfluorocarbons from the new clean room, while the energy consumed in wafer processing will be 30% lower than that in Toshiba's current 200mm wafer clean rooms.

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