

Infineon Technologies Dresden

Through its long tradition as a home to high-tech industries Saxony has earned the nickname "Silicon Saxony." Some 20,000 high-tech jobs in the region of Dresden prove this to be true. The Dresden location of Infineon Technologies is one of the most economically successful, leading-edge chip manufacturing facilities worldwide. The fabrication (fab) plants produce integrated circuits including memory chips and sophisticated logic components, which are sold in global markets. While it was initially estimated that 1,450 employees were needed to work in the fab complex, the staff has increased to more than 4,300 people. Indirectly some 7,700 jobs in Germany can be linked with the Dresden fab of Infineon, with more than 80 percent of these jobs in the region Saxony.

Global Reference Site

Within the international manufacturing network of Infineon Technologies, the fab in Dresden is the reference site for the DRAM fab cluster, which includes production facilities in Europe, Asia, and the USA. The concept of one virtual global fab assures identical high-quality standards in all of the fabs, while reducing qualification costs and contributing to long-term competitive strength achieved by internal benchmarking and constant exchange of experience.

First Volume Production of 256 Mbit Chips

Throughout its history, the Dresden fab has repeatedly proven its excellent technological performance. In 1999, Infineon Dresden was the first chip fab in the world to begin volume production of 256 Mbit SDRAM memory chips (Synchronous Dynamic Random Access Memory), and it was only four months later that the one millionth chip was produced.

State-of-the-Art Production Methods

The fab operates a continuous production process, 24 hours a day. Each week, thousands of silicon wafers are processed using highly sophisticated production equipment in the 200 mm and 300 mm cleanrooms. Each individual wafer contains hundreds of chips, which are simultaneously processed in up to 600 steps.

State-of-the-art equipment and systems have already been designed to meet the requirements of the next product generation, the 1 GBit chip.

Ecologically Friendly Production

The Dresden fab was conceived from the outset as an ecological model semiconductor production facility. Cutting-edge environmental technology is integrated into the production systems. An exemplary concept of waste disposal and utilization as well as highly efficient treatment of exhaust air and wastewater demonstrate the company's consistent efforts for production in compliance with ecological requirements. Since July 1999, the site has been certified according to the ISO 14001/EC ecological audit regulation.

Pioneering 300

Another highlight is Dresden's pioneering work in the introduction of the new production technology based on 300 mm wafers, which was developed from 1998 to 2000 by Infineon in cooperation with Motorola. A breakthrough was achieved in September 1999, when Infineon provided its customers with the first products manufactured on 300 mm silicon wafers, processed on its pilot line. The 300 mm process technology facilitates a significant decrease in the costs per chip, since it allows the placement of about two and a half times as many chips on the wafers as on the current 200 mm technology.

The foundation stone for the 300 mm fab was laid in May 2000 and the topping-out ceremony was already held in September 2000. Volume production using 300 mm wafers started in mid-December 2001.

Both the exhibition company Leipziger-Messe GmbH and "M+W Zander", a subsidiary of Jenoptik specializing in the planning and construction of semiconductor fabs, participate in the 300 mm enterprise from Infineon. A total amount of Euro 1.1 billion will be invested in the 300 mm fab.

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Important Dates

April 1994	Founded as Siemens Microelectronics Center Dresden
October 1995	Start of the production process (16 MBit DRAMs)
August 1996	Shipment qualification of 16 Mbit DRAM
April 1998	Shipment qualification of 64 Mbit DRAM
September 1998	Foundation of a training center
September 1998	Release of the first technology for the production of logic components
April 1999	Shipment qualification of 256 Mbit DRAM on 200 mm
April 1999	Siemens Microelectronics Center Dresden becomes Infineon Technologies Dresden
September 1999	World's first product on 300 mm wafers: 64 Mbit DRAM
May 2000	Laying of the foundation stone for the 300 mm fab
September 2000	Topping-out ceremony of Infineon's 300 mm fab
April 2001	"Ready for Equipment" for the 300 mm fab
October 2001	Shipment qualification of 256 Mbit-DRAM in 0.14 micron on 200 mm

Employees Dec. 2001: 4,300

Products:	64 Mbit	since Dec.1997
	Logic products (for communications)	since March 1998
	256 Mbit	since 1999
	128 Mbit	since Feb. 2000
	1 Gbit	> 2001

Technology: 200 mm wafers, 0.2 micron – 0.14 micron and below
300 mm wafers, 0.14 micron and below

Investments:	200 mm factory:	Euro 1.5 billion
	300 mm factory:	Euro 1.1 billion