

Three-dimensional Integrated Circuit (3D IC/Chip) & Through-Silicon Via (TSV) Interconnects Market - Global Forecast & Trend Analysis (2011 - 2016)

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Abstracts

Three-dimensional Integrated Circuit (3D IC/Chip) & Through-Silicon Via (TSV) Interconnects Market - Global Forecast & Trend Analysis (2011 - 2016)

3D IC/Chip & TSV Interconnects Market - Global Forecast & Trend Analysis (2011 - 2016) By Technology (Substrate, Bonding Techniques, Process Realization, Fabrication), Products (Memory, LED, Sensor, MEMS, Power & Analog Components) & Applications (Mobile Devices, Processors, ICT, Networking, Automotive, Defense)

The gradual migration towards 3D ICs with TSVs happened with accelerated demand for higher bandwidths, reduced power consumption, and higher density. 3D IC technology and its integration with through silicon vias (TSVs) have been witnessing significant commercial strides in the past two years. This is mainly attributed to the high efficiency of the solution and the guaranteed return on investment (ROI) to the investors.

Improved performance, reduced timing, and form factor motivation serve as key drivers for adoption of 3D IC and TSV interconnect solutions. On the other hand, thermal and testing issues and high cost involved largely restrain the growth of the market. In terms of revenue generation, Asia is observed to hold the highest share of around 40%, followed by North America with 35%.

Amongst the different end-products that utilize 3D ICs and TSV interconnects, memories and sensors are expected to provide the largest market owing to improvements in design that can be achieved and the growing demand for such enhanced designs in a wide variety of applications. With respect to the application

sectors, consumer electronics sector largely contributes to the overall growth of the market. In the near future, it is expected that newer applications such as hybrid memory, graphics processor unit, low density parity check decoder, and cell broadband engine will emerge and serve as potential markets for 3D ICs and TSV interconnects.

The global 3D IC market is expected to grow from \$2.21 billion in 2009 to \$6.55 billion in 2016 at a CAGR of 16.9% from 2011 to 2016. The companies in this market need to efficiently balance their expenditure between capacity expansion and technology advancement. This is considered critical since the market for 3D ICs is yet to gain complete recognition and its successful penetration into different end-user segments is largely governed by the R&D initiatives.

IntSim is an open-source CAD tool to simulate 2D and 3D-ICs. It can be used for predicting 2D/3D chip power, die size, number of metal levels, and optimal sizes of metal levels based on various technology and design parameters. Users can also study scaling trends, and use IntSim to optimize their chip designs.

Scope of the report

The 3D IC Chip and TSV interconnect market research report categorizes the global market on the basis of the different manufacturing approaches, use of these ICs in different end-products, use of these in various applications and geographical analysis; forecasting revenue and analyzing trends in the market.

On the basis of manufacturing approaches

The two types of substrates used in the process include silicon on insulator and bulk silicon. Based on the bonding technique employed, the different types include die to die, die to wafer, wafer to wafer, direct bonding, adhesive bonding, and metallic bonding. The different vias processing techniques include via first, via middle, and via last. The different fabrication technologies include beam recrystallization, wafer bonding, silicon epitaxial growth and solid phase crystallization. The market trend for these approaches is discussed.

On the basis of product

The product market is segmented into memories, LEDs, sensors, power and analog components, micro electro mechanical systems (MEMS), and others. The market trend for these products is discussed.

On the basis of applications

The application market is segmented into military, aerospace and defense, consumer electronics, information and communication technology, automotive, and others. The market trend for these applications is discussed.

On the basis of geography

North America

Europe

Asia

ROW

Each section will provide market data, market drivers, trends and opportunities, key players, and competitive outlook. This report will also provide market tables for covering the sub-segments and micro-markets. In addition, it provides more than 20 company profiles covering all the sub-segments.

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