

## **Thin Wafer Processing And Dicing Equipment - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)**

Market Report | 2025-04-28 | 120 pages | Mordor Intelligence

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### **Report description:**

The Thin Wafer Processing And Dicing Equipment Market size is estimated at USD 0.77 billion in 2025, and is expected to reach USD 1.05 billion by 2030, at a CAGR of 6.35% during the forecast period (2025-2030).

### **Key Highlights**

- The increasing efforts to make electronic packaging highly resourceful due to the enormous demand for electronic components owing to amplified usage have made electronic packaging useful in a myriad of applications. These factors are driving the growth of the semiconductor and IC packaging market.
- One of the major factors expected to boost the demand for thin wafer processing and dicing equipment in the coming years is the growing demand for three-dimensional integrated circuits, which are widely used in miniature semiconductor devices such as memory cards, smartphones, smart cards, and various computing devices.
- Three-dimensional circuits are becoming more popular in multiple space-constrained applications, such as portable consumer electronics, sensors, MEMS, and industrial products because they improve overall product performance in terms of speed, durability, low power consumption, and lightweight memory.
- Due to the widespread availability of low-cost cloud computing solutions, the expanding use of server and data center systems across various enterprises and industries is likely to fuel demand for logic devices like microprocessors and digital signal processors. In addition, as the number of IoT-enabled linked devices grows, the utilization of microprocessors also increases. Thin wafers are increasingly employed in these devices to enable effective temperature management and enhance performance. Such factors are responsible for the growth of the market.
- Silicon wafers have long been used as a fabrication platform in microelectronics and MEMS. The silicon-on-insulator substrate is a unique variation of the standard silicon wafer. Two silicon wafers are glued together using a bond layer of silicon dioxide with a thickness of about 1-2  $\mu\text{m}$  to make these wafers. One silicon wafer gets flattened down to 10-50  $\mu\text{m}$  in thickness. The application

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will determine the exact thickness of the coating.

- The cost of building state-of-the-art thin wafer foundries has increased exponentially, which puts pressure on the market. The number of semiconductor manufacturers has consolidated in recent times. Performance boosts are slowing down, making specialized thin wafers increasingly attractive. The design decisions that enable thin wafers to be universal may be sub-optimal for some computing tasks.
- Various developments in semiconductor research further create opportunities for the market. For instance, in April 2023, Rapidus officially joined Imec's Core Partner Program, marking a significant stride in sustainable collaboration with Imec in advanced semiconductor research. This move reinforced their commitment to long-term collaboration and advancement in the semiconductor domain.

## Thin Wafer Processing And Dicing Equipment Market Trends

### Increasing Need for Miniaturization of Semiconductors is Expected to Drive the Market

- According to the Consumer Technology Association, in the US, retail sales of consumer electronics were expected to grow marginally between 2022 and 2024, with the total value exceeding USD 500 billion. This would increase the demand for wafers to develop electronic products. The demand for consumer electronics products, along with other end users such as healthcare and automotive semiconductor IC manufacturers, is forcing them to reduce the size of ICs. It has, therefore, given rise to miniaturization in the market, which is expected to experience a surge in its demand during the forecast period.
- Across geographies, the fabless business model is the major contributor to the prominent position of various Asian countries in semiconductor sales worldwide. Fabless firms typically outsource fabrication to pure-play foundries and outsourced assembly and test (OSAT) firms.
- According to Fujifilm, the miniaturization of semiconductor devices continues as the increasing use of AI, IoT, and next-generation communication standard '5G' and the advancement of autonomous driving technology are expected to increase the demand for and performance of semiconductors. The factors mentioned above have led to the rise in demand for small and lightweight consumer devices that rely on 3D circuit architecture built onto ultra-thin silicon wafers in order to perform at peak capacity.
- These wafers are extremely thin and flat. At the same time, miniaturization has resulted in the need to integrate several features on a single chip. Due to large-sized wafers (with a diameter of up to 12 inches), there is a new trend in wafer technology.
- In December 2023, Samsung Electronics and ASML Holding NV announced a collaborative investment of USD 760 million to establish an advanced Research and Development (R&D) facility in South Korea. The primary objective of this facility is to enhance semiconductor manufacturing processes, with a specific focus on utilizing ASML's cutting-edge EUV technology. This strategic partnership is crucial for Samsung's goal of commercializing 2-nanometer chips by 2025, building on the successful mass production of 3 nm chips in the preceding year.

### Asia-Pacific is Expected to Hold the Largest Market Share

- The Asia-Pacific is the largest and fastest-growing semiconductor market in the world. Significant demand for smartphones and other consumer electronics devices from countries such as China, the Republic of Korea, and Singapore encourages many vendors to set up regional production establishments.
- China's various market players are focusing on expanding business through acquisitions and mergers. For instance, in December 2023, Chinese semiconductor design companies teamed up with Malaysian chip packaging firms to assemble high-end graphics processing units (GPUs). Unisem, the majority of which is owned by China's Huatian Technology, and other Malaysian

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chip packaging companies noticed an uptick in business and inquiries from their Chinese partners. Companies like Xfusion and StarFive from China planned to expand their operations in Malaysia.

- Given the changing dynamics in the global semiconductor industry, other countries like Vietnam and India are also trying to become alternatives for chip manufacturing services. This shift shows that Chinese companies are choosing to assemble their chips outside China, reducing geopolitical risks and making it easier to reach markets outside the country.
- Japan occupies an essential position in the semiconductor industry as it is home to several major manufacturers and the electronics industry. The government is expected to investigate the potential for bringing major chip makers into the country. Meanwhile, Japanese organizations are considered significant suppliers of the most critical materials consumed in semiconductor manufacturing and packaging. For Japanese suppliers, Japanese exchange rates and high production costs make materials more expensive and open up opportunities for other suppliers for low-end applications.
- The growing electronics manufacturing sector in Australia and the increasing adoption of advanced devices among various end-user industries influence market growth. The sales of televisions and smartphones have primarily driven the increase in consumer electronics.
- In December 2023, the University of Sydney Nano Institute unveiled a new chip designed like LEGO blocks, featuring improved bandwidth. This compact silicon semiconductor chip smoothly combines electronics with photonic components. The breakthrough will significantly increase radio-frequency (RF) bandwidth and enhance the precision of managing information within the chip. Utilizing advanced silicon photonics technology, the chip has integration capabilities for various semiconductor systems, all within a width of less than 5 millimeters.
- The growth trajectory of fully autonomous automobiles is heavily influenced by factors in Asia-Pacific, including technology advancements, consumer willingness to accept fully automated vehicles, pricing, and suppliers' and OEMs' capacity to address significant concerns about vehicle safety. According to these factors, the automotive and semiconductor industries always concentrate on enhancing technologies, negotiating raw material prices, and combining cars with reliable technology.

#### Thin Wafer Processing And Dicing Equipment Industry Overview

The market for thin wafer processing and dicing is semi-consolidated and comprises very few major players, such as Disco Corporation, Panasonic Corporation, Nippon, and Pulse Motor Taiwan. The market still faces considerable challenges in the manufacturing processes of thin wafers. The above-mentioned factor has led to a slower entry of new players into the market. Nevertheless, the constant innovations and R&D efforts of market players help maintain a competitive edge. Therefore, competitive rivalry in the market is moderate.

- March 2024: Hitachi High-Tech Corporation announced the launch of the LS9300AD, a new system for inspecting the front and back sides of non-patterned wafer surfaces for particles and defects. In addition to the conventional dark-field laser scattering detection of foreign material and defects, the LS9300AD is equipped with a new DIC (Differential Interference Contrast) inspection function that enables the detection of irregular defects, even shallow, low-aspect microscopic defects. LS9300AD has the wafer edge grip method and rotating stage used in conventional products to enable front and backside wafer inspection.
- November 2023: Corning Inc. sold its German laser technology business to Suzhou Delphi Laser in China. The agreement involved Suzhou Delphi Laser acquiring the complete stake in the division known as Corning Laser Technologies.

#### Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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