High-end Semiconductor Packaging - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 100 pages | Mordor Intelligence

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Report description:

The High-end Semiconductor Packaging Market size is estimated at USD 42.53 billion in 2025, and is expected to reach USD 85.91 billion by 2030, at a CAGR of 15.1% during the forecast period (2025-2030).

The continuous advancements in integration, energy efficiency, and product characteristics because of the growing demand across various end-user verticals of the industry and the use of packaging for improving the performance, reliability, and cost-effectiveness of electronic systems accelerate the market's growth.

Key Highlights
- Packaging protects an electronic system from radio frequency noise emission, electrostatic discharge, mechanical damage, and cooling. The rise in the semiconductor industry worldwide is one of the major factors driving the growth of the semiconductor packaging market. In addition, in February 2023, the Semiconductor Industry Association (SIA) announced global semiconductor industry sales totaled USD 574.1 billion in 2022, the highest-ever annual total and an increase of 3.3% compared to the previous year's total of USD 555.9 billion.
- Furthermore, the rise of IoT and AI and the proliferation of complex electronics drive the high-end application segment in the consumer electronics and automotive industries. Due to these factors, more advanced semiconductor packaging technologies are being adopted to sustain demand. The growing research activities in the sector further bolstered the market's demand.
- Furthermore, the semiconductor packaging market is expected to expand due to multiple long-term growth drivers, like 5G, IoT, automotive, and HPC. For instance, the Government of India approved a USD 10 billion incentive package to build a complete semiconductor ecosystem, including fabs, home-grown chip design, and compound semiconductor plants.
- Moreover, the COVID-19 pandemic significantly impacted the electronics industry, with semiconductor supply chain issues and the chip shortage affecting the industry for some time. However, the growing investments in the semiconductor industry and

increased establishments of semiconductor manufacturing facilities worldwide are anticipated to propel the market's growth in the post-pandemic era.

High-end Semiconductor Packaging Market Trends

Consumer Electronics Sector is Expected to Boost the Market

- The consumer electronics sector is significantly investing in the semiconductor packaging market. Growth of the smartphone, rising wearable and smart device adoption, and increasing consumer IoT device penetration in applications like smart homes are a few of the influential factors influencing the segment's growth. According to Ericsson, smartphone mobile network subscriptions worldwide reached nearly 6.6 billion in 2022, and they are predicted to exceed 7.8 billion by 2028.
- Additionally, markets for smartwatches and smart speakers have become extremely popular in recent years due to the growing number of features and functionalities they can offer due to sophisticated semiconductor components. As a result, the demand for Wi-Fi and Bluetooth chips increased dramatically. Consumer electronics manufacturers also use semiconductor components to equip their products with IoT and AI models, enhancing user experience and making products brighter.
- For instance, in March 2023, Huawei planned to launch its foldable smartphone with a significant battery upgrade in the coming years. The device will feature an upgrade to its battery. Further, Huawei is expected to use a high-silicon anode material to enhance the smartphone's battery capacity, which is expected to be 5,060 mAh.
- Personal computers and laptops are now essential for young consumers who are heavily invested in technology. In addition, over the next ten years, innovation and advancement in the electronics sector are anticipated to drive semiconductor packaging sales. Sales of semiconductor packaging are expected to increase globally in both developing and developed markets due to the introduction of IoT and AI.
- Intel Corporation and the University College London (UCL) have collaborated to introduce a new touchless computer that can be operated and controlled by gesturing the hands and face. Higher power dissipation, faster speeds, higher pin counts, smaller footprints, and lower profiles are all constant demands in the electronics market. Semiconductor miniaturization and integration have resulted in lighter, smaller, and more portable appliances such as smartphones, tablets, and emerging IoT devices.

North America to Experience Significant Market Growth

- The semiconductor sector in the United States and Canada has maintained a significant position in key future technologies, such as AI, quantum computing, and sophisticated wireless networks like 5G.
- For instance, as per GSMA, 5G will become the lead network technology in the United States by 2025. The increasing implementation of 5G networks coincides with the growing demand for more immediate high-performance computing appliances, for which semiconductors form a critical element.
- The US government has significantly invested in boosting the penetration of advanced technologies, bolstering the demand for high-end semiconductor packaging. The US Senate announced the Facilitating American-Built Semiconductors (FABS) Act, which may provide tax incentives to semiconductor manufacturers. The bill may establish a 25% investment tax credit for semiconductor manufacturing investments in equipment or fabs.
- Furthermore, the United States is one of the largest markets for electric vehicles, and the country has also recorded rapid growth in EV sales in recent years. More than 377,000 EVs were sold in the country in Q4 2023, registering a 34% increase from Q4 2022, according to Alliance for Automotive Innovation.
- Many regulations have been implemented in recent years to promote the use of electric vehicles in the country. For instance, New York state lawmakers passed a bill that essentially mandates that all new passenger cars sold in the state run on electric

power by 2035. Moreover, the United States has set a target to ensure half of the vehicles sold in the country are electric by 2030.

High-end Semiconductor Packaging Industry Overview

The high-end semiconductor packaging market is consolidated. Companies employ product innovation, expansions, and partnerships to stay ahead of the competition and widen their market reach.

- May 2024: Siliconware Precision Industries Co. Ltd (SPIL), a prominent player in semiconductor packaging and testing, recently marked the commencement of its Malaysia P1 plant at Bandar Cassia Technology Park, Pulau Pinang. Over the next 15 years, SPIL plans to roll out new technologies, including wafer bumping, and provide a holistic turnkey solution encompassing wafer bumping, wafer-level chip packaging, flip chip packaging, and testing.
- March 2024: Nepes Corporation in South Korea partnered with Siemens EDA to address complex thermal, mechanical, and IC packaging design challenges in advanced 3D-IC packages. Nepes specializes in wafer-level, fan-out wafer-level, and panel-level packaging designs. Expanding on its expertise, Nepes is driving packaging innovations using Siemens EDA's technologies, including the Calibre nmPlatform, HyperLynx, and Xpedition software. By integrating these Siemens solutions, Nepes has enhanced its design capabilities, enabling swift and dependable services in 2.5D/3D chiplet designs for its global IC clientele.

Additional Benefits:

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

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