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Advanced Die Bonding Equipment Market Forecasts to 2034 – Global Analysis By Product Type (Thermal Compression Bonding Equipment, Eutectic Bonding Equipment, Flip-Chip Bonding Equipment and Hybrid Bonding Equipment), Component, Technology, Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Advanced Die Bonding Equipment Market is accounted for $2.0 billion in 2026 and is expected to reach $3.1 billion by 2034 growing at a CAGR of 5.6% during the forecast period. Advanced die bonding equipment refers to high-precision machinery used to attach semiconductor dies onto substrates or packages during chip assembly. These systems utilize automated placement, thermal control, and vision alignment to ensure accurate bonding at micron-level tolerances. They support various bonding techniques including eutectic, adhesive, and flip-chip methods. As semiconductor devices become smaller and more complex, advanced die bonders are critical for enabling high-density packaging, improving electrical performance, and ensuring mechanical reliability in consumer electronics and industrial applications.

Market Dynamics:

Driver:

Rising advanced packaging demand

Rising demand for advanced packaging technologies is a primary growth catalyst for the advanced die bonding equipment market, as semiconductor manufacturers increasingly

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adopt chiplets, 2.5D/3D ICs, and system-in-package architectures. These packaging formats require high-precision bonding solutions to ensure superior electrical performance, thermal management, and miniaturization. Growing adoption of high-performance computing, AI accelerators, and automotive electronics has further intensified the need for reliable die attachment processes, reinforcing equipment upgrades across both foundries and OSAT providers.

Restraint:

High equipment capital expenditure

High capital expenditure associated with advanced die bonding equipment remains a significant market restraint, particularly for small and mid-scale semiconductor manufacturers. The cost burden includes not only initial equipment procurement but also cleanroom integration, maintenance, and skilled labor requirements. Additionally, frequent technology upgrades and customization needs raise total ownership costs. These financial barriers can delay adoption cycles, especially in cost-sensitive regions, thereby limiting market penetration despite growing demand for advanced packaging capabilities.

Opportunity:

Growth in heterogeneous integration

Expanding adoption of heterogeneous integration presents a strong growth opportunity for the advanced die bonding equipment market. As semiconductor designs increasingly combine logic, memory, analog, and photonic components into a single package, precise and flexible bonding solutions become critical. Advanced die bonding systems enable accurate alignment, low-temperature bonding, and improved yield for complex multi-die architectures. Increasing investments in AI, data centers, and next-generation communication technologies are expected to accelerate heterogeneous integration adoption, unlocking new revenue streams for equipment suppliers.

Threat:

Rapid technology obsolescence cycles

Rapid technology obsolescence poses a notable threat to the advanced die bonding equipment market, as semiconductor manufacturing nodes and packaging techniques

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evolve at an accelerated pace. Equipment vendors face pressure to continuously innovate to remain compatible with shrinking geometries and new materials. This short innovation lifecycle increases R&D costs and heightens the risk of equipment redundancy for end users. Manufacturers that fail to keep pace with technological transitions may experience reduced competitiveness and declining market relevance.

Covid-19 Impact:

The COVID-19 pandemic had a mixed impact on the advanced die bonding equipment market. Initial disruptions included semiconductor fab shutdowns, supply chain bottlenecks, and delayed capital investments. However, the subsequent surge in demand for consumer electronics, cloud infrastructure, and automotive semiconductors accelerated capacity expansions. Governments and enterprises prioritized semiconductor self-sufficiency, leading to renewed investments in advanced manufacturing equipment. Over time, these factors helped stabilize demand and supported long-term market recovery and growth momentum.

The thermal compression bonding equipment segment is expected to be the largest during the forecast period

The thermal compression bonding equipment segment is expected to account for the largest market share during the forecast period, due to its widespread adoption in advanced packaging applications such as 3D ICs and chiplet architectures. This equipment enables precise pressure and temperature control, ensuring high bonding reliability and minimal interconnect defects. Its suitability for fine-pitch interconnects and heterogeneous integration has driven strong demand from leading foundries and OSATs, positioning thermal compression bonding as a dominant solution in advanced semiconductor manufacturing.

The bonding heads segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the bonding heads segment is predicted to witness the highest growth rate, due to rising demand for customizable, high-precision bonding components. Bonding heads play a critical role in alignment accuracy, force control, and throughput optimization across advanced die bonding processes. Increasing focus on flexible equipment configurations and rapid technology upgrades has boosted replacement and upgrade demand for bonding heads, particularly in fabs adopting multi-die and heterogeneous integration packaging strategies.

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Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share in the advanced die bonding equipment market, due to rapid expansion of semiconductor manufacturing capacity across countries such as China, Taiwan, South Korea, and Japan. The region benefits from a strong OSAT ecosystem, rising consumer electronics production, and aggressive investments in advanced packaging technologies. Favorable government policies, cost-efficient manufacturing, and increasing demand for AI and automotive semiconductors are expected to accelerate adoption of advanced die bonding equipment across Asia Pacific.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR, supported by strong semiconductor R&D activity and the presence of leading integrated device manufacturers. Significant investments in advanced packaging, defense electronics, and high-performance computing infrastructure continue to drive equipment adoption. Government-backed semiconductor initiatives and reshoring efforts have further strengthened regional demand, positioning North America as a key revenue-generating market for advanced bonding equipment suppliers.

Key players in the market

Some of the key players in Advanced Die Bonding Equipment Market include ASM Pacific Technology Ltd., Besi (BE Semiconductor Industries N.V.), Kulicke & Soffa Industries, Inc., Tokyo Electron Limited, Shibaura Machine Co., Ltd., Panasonic Holdings Corporation, EV Group (EVG), SUSS MicroTec SE, Hanmi Semiconductor Co., Ltd., DISCO Corporation, K&S Advanced Packaging (Kulicke & Soffa), Nordson Corporation, Applied Materials, Inc., Canon Inc., and Screen Holdings Co., Ltd.

Key Developments:

In December 2025, DISCO Corporation developed the DFD6080 package dicing saw and DFG8561 fully automatic grinder, supporting advanced wafer-level packaging and die preparation for high-precision bonding applications.

In January 2026, Nordson Corporation showcased its PROX and PROPlus automated assembly systems at MD&M West, reinforcing automation and precision dispensing

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solutions for semiconductor packaging and die bonding applications.

In November 2025, Hanmi Semiconductor Co., Ltd. announced its Wide TC Bonder targeting HBM5, addressing vertical stacking limits with horizontal expansion to support next-generation high bandwidth memory packaging.

Product Types Covered:

- Thermal Compression Bonding Equipment
- Eutectic Bonding Equipment
- Flip-Chip Bonding Equipment
- Hybrid Bonding Equipment

Components Covered:

- Bonding Heads
- Alignment Systems
- Heating Units
- Control Systems

Technologies Covered:

- 2D Packaging
- 2.5D Packaging
- 3D IC Packaging

Applications Covered:

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- Logic ICs
- Memory ICs
- MEMS & Sensors
- Power Devices

End Users Covered:

- IDMs
- Foundries
- OSAT Providers
- Other End Users

Regions Covered:

- North America
  - United States
  - Canada
  - Mexico
- Europe
  - United Kingdom
  - Germany
  - France
  - Italy

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- Spain
- Netherlands
- Belgium
- Sweden
- Switzerland
- Poland
- Rest of Europe

Asia Pacific

- China
- Japan
- India
- South Korea
- Australia
- Indonesia
- Thailand
- Malaysia
- Singapore
- Vietnam
- Rest of Asia Pacific

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South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of Africa

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What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 3032 and 2034
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

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