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Global Semiconductor Bonding Equipment Market 2023

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Abstracts

Description

The Semiconductor Bonding Equipment Market is poised for significant growth, with a projected increase from USD 482.9 million in 2022 to USD 917.9 million by 2029, reflecting a notable compound annual growth rate (CAGR) of 9.2% during the forecast period. This market encompasses a range of bonding techniques and equipment types, including Permanent bonding, temporary bonding, and hybrid bonding.

The semiconductor industry has experienced a profound impact from the proliferation of digitalization and the increasing demand for 5G deployment. These factors have propelled the industry towards becoming a trillion-dollar market by 2030. Notably, China, as a major consumer and producer of consumer electronics, plays a vital role in shaping the global semiconductor bonding equipment market.

The outbreak of the COVID-19 pandemic has further accelerated the demand for computing devices, which, in turn, has driven the need for semiconductor bonding equipment. However, it is important to note that the choice of bonding process employed can significantly impact the cost of ownership and potentially limit the overall market growth.

Market Segmentation

The market is segmented based on various factors, including type, application, and geography.

Segmentation by Type

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Hybrid Bonding Equipment

Permanent Bonding Equipment

Temporary Bonding Equipment

Segmentation by Application

Advanced Packaging

CMOS Image Sensors (CIS)

Engineered Substrates

MEMS Sensors and Actuators

Photonic Devices

Power IC and Power Discrete

Segmentation by Geography

North America

Asia Pacific

Europe

Rest of the World

In 2022, the Permanent Bonding Equipment segment held a market share of 68.7%, while the Hybrid Bonding Equipment segment is expected to grow at a CAGR of 24.5% during the forecast period. Similarly, the Power IC & Power Discrete segment dominated with a share of 43.4% in 2022, while the Engineered Substrates segment is projected to experience a CAGR of 13.5%. The market's expansion is driven by the demand for high-energy and power-efficient devices, wireless and portable electronic products, and the shift towards electrification in the automotive industry. Efficient power management and advancements in Power-over-Ethernet (PoE) standards contribute to

the growth of the power IC and discrete segment. Wearable devices, the use of semiconductors with larger mobility and higher critical breakdown fields, and the integration of discrete semiconductors in power adapters for smartphone transmission speeds further drive market growth. The rise of IoT applications and the expansion of 5G networks are expected to boost the adoption of discrete semiconductors globally.

In 2022, the Asia-Pacific region held the largest market share of 82.3% and is expected to achieve the highest compound annual growth rate (CAGR) of 9.3% during the projected period. This growth can be attributed to strategic investments made by significant domestic suppliers and the presence of a well-established semiconductor sector in the region. Specifically, China is predicted to surpass the United States as a dominant player in the semiconductor industry due to its growing demand for domestic chips.

Competitive Landscape

The Semiconductor Bonding Equipment Market is fragmented, with key players including ASMPT Ltd., BE Semiconductor Industries N.V., DIAS Automation (HK) Ltd., Dr. Tresky AG, EV Group GmbH, Fasford Technology Co. Ltd. (Fuji Corporation), Kulicke and Soffa Industries Inc., MRSI Systems LLC (Mycronic AB), Palomar Technologies Inc., Panasonic Holdings Corporation, Shibaura Mechatronics Corporation, SUSS MicroTec SE, Tokyo Electron Limited, West Bond Inc. These participants employ tactics such as partnerships, innovation, investments, and acquisitions to enhance their product offerings and gain a competitive edge.

Recent Industry Developments

S?SS MicroTec SE introduced Impulse Current Bonding in November 2022, a groundbreaking advancement in semiconductor bonding technology. Developed by a Swiss university spin-off, this Sy&Se technology offers robustness similar to anodic bonding and material versatility found in other bonding methods. It will be available on manual and automatic wafer bonder systems.

BE Semiconductor Industries NV announced plans in October 2022 to establish a cutting-edge semiconductor assembly and testing facility in Penang. The facility, comprising Plants 4 and 5, will cover 982,000 square feet in the Bayan Lepas Free Industrial Zone. Scheduled for completion in 2025, this project has the potential to create 2,700 jobs and contribute to economic growth and technological advancement.

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Why Buy This Report?

Get a detailed picture of the Global Semiconductor Bonding Equipment Market

Identify segments/areas to invest in over the forecast period in the Global Semiconductor Bonding Equipment Market

Understand the competitive environment, the market's leading players

The market estimate for ease of analysis across scenarios in Excel format

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