

Semiconductor Bonding Market by Type (Die Bonder, Wafer Bonder, and Flip Chip Bonder), Application (RF Devices, MEMS and Sensors, LED, 3D NAND and CMOS Image Sensors), Process Type, Technology and Region - Global Forecast to 2026

<https://marketpublishers.com/r/SA610E0B04B8EN.html>

Date: September 2021

Pages: 201

Price: US\$ 4,950.00 (Single User License)

ID: SA610E0B04B8EN

Abstracts

Semiconductor bonding market was valued at USD 887 million in 2021 and is anticipated to reach USD 1,059 million by 2026, growing at a CAGR of 3.6% between 2021 to 2026. The growing demand for semiconductor bonding in applications such as electric and hybrid vehicles is driving the growth of semiconductor bonding market.

The semiconductor industry plays a vital role in electric and hybrid vehicles. The key components required in electric and hybrid vehicles include power semiconductor devices such as freewheeling diodes, ICs, MEMS, voltage boost DC-DC converters, fuel cell air compressors, motor drives, insulated gate bipolar transistors (IGBTs), and low-voltage power MOSFETs. Innovations in automobiles to build energy-efficient and environment-friendly vehicles have increased the demand for semiconductor devices such as ICs and sensors. Automobile companies also focus on using system on chip (SoC), which offers faster control and secure communication.

To reduce carbon emissions, the use of electric and hybrid vehicles is expanding gradually in some countries because of government support and substantial investments from the automotive industry. Advanced electric cars provided by some of the key car manufacturers, such as Bayerische Motoren Werke AG (BMW) (Germany), Ford Motor Company (US), and Toyota Motor Corporation (Japan), and the initiatives by several countries to reduce carbon emissions have increased the use of hybrid and electric vehicles. As more semiconductor devices are used in electric vehicles, the demand for semiconductor bonding equipment is expected to increase.

According to the International Energy Agency, the adoption of electric vehicles is continuously increasing across the globe, and their demand is expected to grow rapidly in the coming years. According to the Bloomberg New Energy Finance report, the sales of electric vehicles are estimated to grow to 41 million by 2040, thereby leading to a rise in the demand for electronic components used in electric vehicles.

Advanced systems, such as idling stop systems (ISS), would result in the growth in the semiconductor content in traditional fuel-based vehicles. For instance, in 2014, ROHM Semiconductor developed high-performance microcontrollers for various automotive systems, especially in electric and hybrid vehicles. Such advancements in the automotive sector increase the demand for semiconductor devices, subsequently driving the growth of the semiconductor bonding market.

Growing adoption of IoT and AI in automotive sector

The advent of Industry 4.0 and technologies such as IoT and AI in the automotive sector would contribute significantly toward the growth of the semiconductor bonding market. The increasing demand for vehicle connectivity would encourage new developments in the industry. With ongoing trends such as touch-free human-machine interfaces revolutionizing the automotive sector, there is a growing significance of connected cars. According to a report published by the GSM Association (GSMA) in 2019, the number of IoT connections is projected to reach 24.6 billion globally by 2025. Integration of IoT in automotive safety and communication technologies is one of the major reasons for the anticipated growth of IoT connections. The introduction of technologies such as advanced driver assistance systems (ADAS), adaptive cruise control, and intelligent parking assistance systems would further drive the market growth.

Cellular IoT connectivity and AI play a vital role in automotive and transportation sectors, with major use cases being shared mobility, autonomous vehicles, connected vehicles, telematics, smart public transportation, and C-V2x vehicles. The development of smart infrastructures such as smart cities and intelligent transportation systems would accelerate the implementation of AI and IoT technologies in automotive and transportation. As per MarketsandMarkets, the connected car market is expected to grow from USD 53.9 billion in 2019 to USD 166 billion by 2025; it is anticipated to register a CAGR of 25.2% during 2020–2025.

The implementation of IoT and AI technologies in automobiles is leading to the integration of a large number of intelligent sensors and actuators, as well as AI chips

such as ADAS, LiDAR, and neuromorphic chips. These components do not use standard packaging, as different customers have different packaging designs. The manufacturing process of these components comprises high-precision dispensing and stamping of epoxy. Some use eutectic and ultraviolet (UV) processes. This necessitates the demand for flexible multi-die and multi-process die bonding machines with high speed and high accuracy.

Asia Pacific is the fastest-growing region in the semiconductor bonding market

In 2020, APAC accounted for a 62.6% share of the global semiconductor bonding market. The growth of the semiconductor bonding in APAC is attributed to the presence of several OSAT players in China and Taiwan. The region also houses semiconductor fabrication facilities of a few of the major IDMs, such as Intel (US), Micron (US), NXP Semiconductors (Netherlands), SK Hynix (South Korea), Samsung (South Korea), Texas Instruments (US), ASM Pacific Technology Ltd. (Singapore), SHIBUYA CORPORATION (Japan), Kulicke & Soffa (Singapore), and Shinkawa Ltd. (Japan) are among the major players in this market that have their headquarters in APAC.

The breakup of primaries conducted during the study is depicted below:

By Company Type: Tier 1 – 45 %, Tier 2 – 32%, and Tier 3 –23%

By Designation: C-Level Executives – 30%, Directors – 45%, and Others – 25%

By Region: North America– 26%, Europe – 40%, APAC – 22% and ROW – 12%

Research Coverage

The report segments the semiconductor bonding market and forecasts its size, by volume and value, based on region (North America, Europe, Asia Pacific, and RoW), Semiconductor Bonding Market by Type (Die Bonder, Wafer Bonder and Flip Chip Bonder), Application (RF Devices, MEMS and Sensors, LED, 3D NAND and CMOS Image Sensors), Process Type(Die-to-die bonding, Die-to wafer bonding and Wafer-to-wafer bonding), Technology(Die bonding technology (Eutectic Die Bonding (Epoxy Die Bonding, Flip Chip Attachment, Hybrid Bonding (for 3D-NAND)) and Wafer Bonding Technology (Direct Wafer Bonding, Anodic Wafer Bonding, Tcb Wafer Bonding, Hybrid Bonding, Others)). The report also provides a comprehensive review of market drivers, restraints, opportunities, and challenges in the semiconductor bonding market. The

report also covers qualitative aspects in addition to the quantitative aspects of these markets.

Key Benefits of Buying This Report

This report includes market statistics pertaining to the process type, type, application, technology and region.

An in-depth value chain analysis has been done to provide deep insight into the semiconductor bonding market.

Major market drivers, restraints, challenges, and opportunities have been detailed in this report.

Illustrative segmentation, analyses, and forecasts for the market based on process type, type, application, technology, and region have been conducted to provide an overall view of the semiconductor bonding market.

The report includes an in-depth analysis and ranking of key players.

Contents

1 INTRODUCTION

- 1.1 STUDY OBJECTIVES
- 1.2 MARKET DEFINITION AND SCOPE
 - 1.2.1 INCLUSIONS AND EXCLUSIONS
- 1.3 SCOPE
 - 1.3.1 MARKETS COVERED
 - 1.3.2 YEARS CONSIDERED
- 1.4 CURRENCY
- 1.5 LIMITATIONS
- 1.6 STAKEHOLDERS

2 RESEARCH METHODOLOGY

- 2.1 RESEARCH DATA
 - FIGURE 1 SEMICONDUCTOR BONDING EQUIPMENT MARKET: RESEARCH DESIGN
 - 2.1.1 SECONDARY DATA
 - 2.1.1.1 Secondary sources
 - 2.1.2 PRIMARY DATA
 - 2.1.2.1 Primary sources
 - 2.1.2.2 Breakdown of primary interviews
 - 2.2 MARKET SIZE ESTIMATION
 - FIGURE 2 MARKET SIZE ESTIMATION METHODOLOGY: APPROACH 3—BOTTOM-UP MARKET ESTIMATION FOR SEMICONDUCTOR BONDING EQUIPMENT, BY TYPE
 - 2.2.1 BOTTOM-UP APPROACH
 - 2.2.1.1 Approach for estimating market size by bottom-up approach (demand side)
 - FIGURE 3 MARKET SIZE ESTIMATION METHODOLOGY: BOTTOM-UP APPROACH
 - 2.2.2 TOP-DOWN APPROACH
 - 2.2.2.1 Approach for estimating market size by top-down approach (supply side)
 - FIGURE 4 MARKET SIZE ESTIMATION METHODOLOGY: TOP-DOWN APPROACH
 - 2.3 MARKET BREAKDOWN AND DATA TRIANGULATION
 - FIGURE 5 DATA TRIANGULATION
 - 2.4 ASSUMPTIONS
 - FIGURE 6 ASSUMPTIONS FOR THE RESEARCH STUDY

2.5 RISK ASSESSMENT

2.6 LIMITATIONS

2.7 PRIMARY INSIGHTS

TABLE 1 MARKET FORECASTING METHODOLOGY ADOPTED FROM 2019 TO 2026

3 EXECUTIVE SUMMARY

FIGURE 7 MARKET FOR WAFER BONDER TO GROW AT HIGHEST CAGR DURING 2021–2026

FIGURE 8 SEMICONDUCTOR BONDING MARKET FOR LED TO GROW AT HIGHEST CAGR DURING 2021–2026

FIGURE 9 APAC TO BE FASTEST-GROWING REGIONAL MARKET FOR SEMICONDUCTOR BONDING DURING FORECAST PERIOD

3.1 IMPACT OF COVID-19 ON SEMICONDUCTOR BONDING MARKET

FIGURE 10 IMPACT OF COVID-19 ON SEMICONDUCTOR BONDING MARKET, 2018–2026 (USD MILLION)

3.2 PRE-COVID-19

3.3 PESSIMISTIC SCENARIO (POST-COVID-19)

3.4 OPTIMISTIC SCENARIO (POST-COVID-19)

3.5 REALISTIC SCENARIO (POST-COVID-19)

4 PREMIUM INSIGHTS

4.1 ATTRACTIVE OPPORTUNITIES IN SEMICONDUCTOR BONDING MARKET

FIGURE 11 RISING NEED FOR 3D CHIPS IS ACTING AS POTENTIAL OPPORTUNITY FOR MARKET

4.2 SEMICONDUCTOR BONDING MARKET, BY TYPE

FIGURE 12 MARKET FOR WAFER BONDER TO GROW AT HIGHER CAGR DURING FORECAST PERIOD

4.3 MARKET FOR CLOUD SEMICONDUCTOR BONDING, BY COUNTRY

FIGURE 13 SEMICONDUCTOR BONDING MARKET IN JAPAN TO GROW AT HIGHEST CAGR DURING FORECAST PERIOD

4.4 SEMICONDUCTOR BONDING MARKET IN APAC IN 2026, BY COUNTRY & APPLICATION

FIGURE 14 LED TO HOLD LARGEST SHARE OF SEMICONDUCTOR BONDING MARKET IN APAC IN 2026

4.5 SEMICONDUCTOR BONDING MARKET, BY APPLICATION

FIGURE 15 MARKET FOR LED TO GROW AT HIGHEST CAGR BETWEEN 2021 AND 2026

5 MARKET OVERVIEW

5.1 INTRODUCTION

5.2 MARKET DYNAMICS

FIGURE 16 GROWING DEMAND FOR MINIATURIZATION OF ELECTRONIC DEVICES TO DRIVE SEMICONDUCTOR BONDING MARKET

5.2.1 DRIVERS

5.2.1.1 Growing demand for miniature electronic components

FIGURE 17 MEMS MARKET, 2017–2020 (USD MILLION)

5.2.1.2 Increasing adoption of stacked die technology in IoT devices

FIGURE 18 INDUSTRIAL IOT MARKET, BY DEVICE AND TECHNOLOGY, 2017–2020 (USD BILLION)

5.2.1.3 Rising demand for electric and hybrid vehicles

FIGURE 19 ELECTRIC VEHICLE SALES, 2013–2018 (MILLION UNITS)

FIGURE 20 SEMICONDUCTOR BONDING MARKET DRIVERS AND THEIR IMPACT

5.2.2 RESTRAINTS

5.2.2.1 High cost of ownership

FIGURE 21 SEMICONDUCTOR BONDING MARKET RESTRAINTS AND THEIR IMPACT

5.2.3 OPPORTUNITIES

5.2.3.1 Increasing demand for 3D semiconductor assembly and packaging

TABLE 2 SEMICONDUCTOR MANUFACTURING EQUIPMENT MARKET FOR 3D ICS, 2020–2025 (USD MILLION)

5.2.3.2 Expanding IC industry in China

TABLE 3 CHINA'S PROVINCES HAVE SIGNIFICANT INVESTMENT IN CHIP FUNDS (AS OF JUNE 2020)

5.2.3.3 Growing adoption of IoT and AI in automotive sector

FIGURE 22 PROJECTED IOT CONNECTIONS BY 2025 (BILLION)

FIGURE 23 SEMICONDUCTOR BONDING MARKET OPPORTUNITIES AND THEIR IMPACT

5.2.4 CHALLENGES

5.2.4.1 Mechanical unbalance of moving parts and thin wafers being volatile and susceptible to damage caused by pressure or stress

5.2.4.2 Increased complexities related to miniaturized structures of circuits

FIGURE 24 SEMICONDUCTOR BONDING MARKET CHALLENGES AND THEIR

IMPACT

5.3 VALUE CHAIN ANALYSIS

5.3.1 SEMICONDUCTOR BONDING VALUE CHAIN

FIGURE 25 VALUE CHAIN OF SEMICONDUCTOR BONDING MARKET: MAJOR VALUE IS ADDED BY SEMICONDUCTOR BONDING EQUIPMENT PROVIDERS

5.3.2 ASP ANALYSIS

TABLE 4 AVERAGE SELLING PRICES OF DIFFERENT TYPES OF BONDING MACHINES

5.3.3 REGULATIONS

5.3.4 EXPORTS–IMPORTS REGULATIONS

5.3.5 RESTRICTION OF HAZARDOUS SUBSTANCES (ROHS) AND WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

5.3.6 REGISTRATION, EVALUATION, AUTHORIZATION, AND RESTRICTION OF CHEMICALS (REACH)

5.4 ECOSYSTEM

TABLE 5 ECOSYSTEM PLAYERS

5.5 TECHNOLOGY ANALYSIS

5.5.1 MEMS AND MOEMS

5.5.2 WAFER BONDING

5.5.3 DIE BONDING

5.5.4 SOFT SOLDER

5.6 CASE STUDIES

5.6.1 LATEST DIE BONDING SOLUTIONS FOR PHOTONICS MANUFACTURING

5.6.2 MRSI SOLVES ONE OF GREATEST CHALLENGES IN MODERN PHOTONICS MANUFACTURING

5.6.3 QUICK SETTING RFID TAG BONDING – GLUTAG BONDING

5.6.4 WORLD'S FIRST 300 MM COMPATIBLE 3D-INTEGRATED LSI ROOM TEMPERATURE WAFER BONDING DEVICE

5.7 PATENTS ANALYSIS

FIGURE 26 KEY PATENT HOLDERS DURING 2010–2020

TABLE 6 LIST OF PATENTS

5.8 PORTER'S FIVE FORCES ANALYSIS

TABLE 7 SEMICONDUCTOR BONDING MARKET: PORTER'S FIVE FORCES ANALYSIS

5.8.1 BARGAINING POWER OF SUPPLIERS

5.8.2 BARGAINING POWER OF BUYERS

5.8.3 THREAT OF NEW ENTRANTS

5.8.4 THREAT OF SUBSTITUTES

5.8.5 INTENSITY OF COMPETITIVE RIVALRY

TABLE 8 IMPACT OF EACH FORCE ON MARKET, 2020 VS. 2026

5.9 TRENDS/DISRUPTIONS IMPACTING CUSTOMER'S BUSINESS

FIGURE 27 REVENUE SHIFT FOR SEMICONDUCTOR BONDING MARKET

5.10 TRADE ANALYSIS

TABLE 9 IMPORTS DATA FOR MACHINES AND APPARATUSES USED FOR MANUFACTURING SEMICONDUCTOR DEVICES OR ELECTRONIC INTEGRATED CIRCUITS, BY COUNTRY, 2015– 2019 (USD MILLION)

TABLE 10 EXPORTS DATA OF MACHINES AND APPARATUSES USED FOR MANUFACTURING SEMICONDUCTOR DEVICES OR ELECTRONIC INTEGRATED CIRCUITS, BY COUNTRY, 2015– 2019 (USD MILLION)

6 SEMICONDUCTOR BONDING MARKET, BY PROCESS TYPE

6.1 INTRODUCTION

FIGURE 28 DIE-TO-WAFER BONDING IS EXPECTED TO GROW AT HIGHEST RATE BETWEEN 2021 AND 2026

TABLE 11 SEMICONDUCTOR BONDING MARKET SIZE, BY PROCESS TYPE, 2018–2020 (USD MILLION)

TABLE 12 SEMICONDUCTOR BONDING MARKET SIZE, BY PROCESS TYPE, 2021–2026 (USD MILLION)

6.2 DIE-TO-DIE BONDING

6.2.1 DIE-TO-DIE BONDING SEGMENT IS EXPECTED TO GROW AT 4.3% CAGR

TABLE 13 SEMICONDUCTOR BONDING MARKET SIZE FOR DIE-TO-DIE BONDING, BY REGION, 2018–2020 (USD MILLION)

TABLE 14 SEMICONDUCTOR BONDING MARKET SIZE FOR DIE-TO-DIE BONDING, BY REGION, 2021–2026 (USD MILLION)

6.3 DIE-TO-WAFER BONDING

6.3.1 SEVERAL DIFFERENT DIE-TO-WAFER BONDING APPROACHES ARE BEING CONSIDERED FOR HETEROGENEOUS INTEGRATION

TABLE 15 TYPES OF DIE-TO-WAFER BONDING

TABLE 16 SEMICONDUCTOR BONDING MARKET SIZE FOR DIE-TO-WAFER BONDING, BY REGION, 2018–2020 (USD MILLION)

TABLE 17 SEMICONDUCTOR BONDING MARKET SIZE FOR DIE-TO-WAFER BONDING, BY REGION, 2021–2026 (USD MILLION)

6.4 WAFER-TO-WAFER BONDING

6.4.1 WAFER-TO-WAFER IS USED FOR APPLICATIONS SUCH AS CMOS IMAGE SENSORS AND VARIOUS MEMORY AND LOGIC TECHNOLOGIES

TABLE 18 SEMICONDUCTOR BONDING MARKET SIZE FOR WAFER-TO-WAFER BONDING, BY REGION, 2018–2020 (USD MILLION)

TABLE 19 SEMICONDUCTOR BONDING MARKET SIZE FOR WAFER-TO-WAFER BONDING, BY REGION, 2021–2026 (USD MILLION)**7 SEMICONDUCTOR BONDING MARKET, BY TECHNOLOGY****7.1 INTRODUCTION****7.2 DIE BONDING**

FIGURE 29 EPOXY DIE BONDING TECHNOLOGY IS PROJECTED TO HOLD LARGEST MARKET SHARE DURING FORECAST PERIOD

TABLE 20 DIE BONDING MARKET, BY TECHNOLOGY, 2018–2020 (USD MILLION)

TABLE 21 DIE BONDING MARKET, BY TECHNOLOGY, 2021–2026 (USD MILLION)

7.2.1 EPOXY DIE BONDING

7.2.1.1 Epoxy bonding to account for largest share of die bonder equipment market due to low cost and low curing temperature

7.2.2 EUTECTIC DIE BONDING

7.2.2.1 Eutectic die bonding is primarily used for fabrication of electronic components

7.2.3 FLIP CHIP ATTACHMENT

7.2.3.1 Flip chip attachment method is used for making electrical connections to chips

7.2.4 HYBRID BONDING (FOR 3D NAND)

7.2.4.1 Main application of hybrid bonding is in advanced 3D device stacking

7.3 WAFER BONDING

FIGURE 30 MARKET FOR HYBRID BONDING TECHNOLOGY TO GROW AT HIGHEST CAGR DURING FORECAST PERIOD

TABLE 22 WAFER BONDING MARKET, BY TECHNOLOGY, 2018–2020 (USD MILLION)

TABLE 23 WAFER BONDING MARKET, BY TECHNOLOGY, 2021–2026 (USD MILLION)

7.3.1 DIRECT WAFER BONDING

7.3.1.1 Direct wafer bonding offers strong connection due to covalent forces

FIGURE 31 DIRECT WAFER BONDING PROCESS FLOW

7.3.2 ANODIC WAFER BONDING

7.3.2.1 Anodic wafer bonding offers advantage of wide process window, which helps in MEMS fabrication

FIGURE 32 ANODIC WAFER BONDING PROCESS FLOW

TABLE 24 DIFFERENCES BETWEEN DIRECT WAFER BONDING AND ANODIC WAFER BONDING

7.3.3 TCB WAFER BONDING

7.3.3.1 Metals such as Au, Cu, or Al are used for metal thermocompression bonding

FIGURE 33 METAL THERMOCOMPRESSSION WAFER BONDING PROCESS FLOW

7.3.4 HYBRID BONDING

7.3.4.1 Xperi has developed new version of its hybrid bonding technology

8 SEMICONDUCTOR BONDING MARKET, BY TYPE

8.1 INTRODUCTION

FIGURE 34 WAFER BONDER SEGMENT IS EXPECTED TO GROW AT HIGHEST CAGR BETWEEN 2021 AND 2026

TABLE 25 SEMICONDUCTOR BONDING MARKET SIZE, BY TYPE, 2018–2020 (MILLION UNIT)

TABLE 26 SEMICONDUCTOR BONDING MARKET SIZE, BY TYPE, 2021–2026 (MILLION UNITS)

TABLE 27 SEMICONDUCTOR BONDING MARKET SIZE, BY TYPE, 2018–2020 (USD MILLION)

TABLE 28 SEMICONDUCTOR BONDING MARKET SIZE, BY TYPE, 2021–2026 (USD MILLION)

8.2 DIE BONDER

8.2.1 MANUAL DIE BONDERS

8.2.1.1 Manual die bonders play significant role in R&D, testing, and prototyping applications

8.2.2 SEMIAUTOMATIC DIE BONDERS

8.2.2.1 Semiautomatic die bonders are flexible and easy to use

8.2.3 FULLY AUTOMATIC DIE BONDERS

8.2.3.1 Fully automatic die bonders are expected to gain more market traction

TABLE 29 SEMICONDUCTOR BONDING MARKET SIZE FOR DIE BONDER, BY REGION, 2018–2020 (USD MILLION)

TABLE 30 SEMICONDUCTOR BONDING MARKET SIZE FOR DIE BONDER, BY REGION, 2021–2026 (USD MILLION)

8.3 WAFER BONDER

8.3.1 UV-RELEASE ADHESIVES, THERMAL-RELEASE ADHESIVES, AND SOLVENT-RELEASE ADHESIVES ARE USED IN WAFER BONDING

TABLE 31 SEMICONDUCTOR BONDING MARKET SIZE FOR WAFER BONDER, BY REGION, 2018–2020 (USD MILLION)

TABLE 32 SEMICONDUCTOR BONDING MARKET SIZE FOR WAFER BONDER, BY REGION, 2021–2026 (USD MILLION)

8.4 FLIP CHIP BONDER

8.4.1 FLIP CHIP BONDING CAN OFFER SEVERAL ADVANTAGES OVER OTHER INTERCONNECTION PROCESSES

TABLE 33 SEMICONDUCTOR BONDING MARKET SIZE FOR FLIP CHIP BONDER,

BY REGION, 2018–2020 (USD MILLION)

TABLE 34 SEMICONDUCTOR BONDING MARKET SIZE FOR FLIP CHIP BONDER,
BY REGION, 2021–2026 (USD MILLION)

9 SEMICONDUCTOR BONDING MARKET, BY APPLICATION

9.1 INTRODUCTION

FIGURE 35 LED APPLICATION SEGMENT TO GROW AT HIGHEST RATE
BETWEEN

2021 AND 2026

TABLE 35 SEMICONDUCTOR BONDING MARKET SIZE, BY APPLICATION,
2018–2020 (USD MILLION)

TABLE 36 SEMICONDUCTOR BONDING MARKET SIZE, BY APPLICATION,
2021–2026 (USD MILLION)

9.2 MEMS AND SENSORS

9.2.1 GROWTH IS DRIVEN BY HIGH DEMAND FROM CONSUMER ELECTRONICS
MANUFACTURERS AND ADOPTION OF PATIENT MONITORING SOLUTIONS
DURING COVID-19 PANDEMIC

TABLE 37 SEMICONDUCTOR BONDING MARKET SIZE FOR MEMS AND
SENSORS, BY REGION, 2018–2020 (USD MILLION)

TABLE 38 SEMICONDUCTOR BONDING MARKET SIZE FOR MEMS AND
SENSORS, BY REGION, 2021–2026 (USD MILLION)

9.3 CMOS IMAGE SENSORS (CIS)

9.3.1 INCREASING DEMAND FROM AUTOMOTIVE VERTICAL IS EXPECTED TO
DRIVE DEMAND FOR CIS

TABLE 39 SEMICONDUCTOR BONDING MARKET SIZE FOR CIS, BY REGION,
2018–2020 (USD MILLION)

TABLE 40 SEMICONDUCTOR BONDING MARKET SIZE FOR CIS, BY REGION,
2021–2026 (USD MILLION)

9.4 RADIOFREQUENCY (RF) DEVICES

9.4.1 INCREASING DEMAND FOR RF DEVICES FOR SMARTPHONES TO DRIVE
SEMICONDUCTOR BONDING MARKET

TABLE 41 SEMICONDUCTOR BONDING MARKET SIZE FOR RF DEVICES, BY
REGION, 2018–2020 (USD MILLION)

TABLE 42 SEMICONDUCTOR BONDING MARKET SIZE FOR RF DEVICES, BY
REGION, 2021–2026 (USD MILLION)

9.5 LED

9.5.1 INCREASING DEMAND FOR LED COMPONENTS IN HOME AND INFRASTRUCTURE MARKET TO AUGMENT GROWTH DURING FORECAST PERIOD

TABLE 43 SEMICONDUCTOR BONDING MARKET SIZE FOR LED, BY REGION, 2018–2020 (USD MILLION)

TABLE 44 SEMICONDUCTOR BONDING MARKET SIZE FOR LED, BY REGION, 2021–2026 (USD MILLION)

9.6 3D NAND

TABLE 45 SEMICONDUCTOR BONDING MARKET SIZE FOR 3D NAND, BY REGION, 2018–2020 (USD MILLION)

TABLE 46 SEMICONDUCTOR BONDING MARKET SIZE FOR 3D NAND, BY REGION, 2021–2026 (USD MILLION)

10 GEOGRAPHIC ANALYSIS

10.1 INTRODUCTION

FIGURE 36 SEMICONDUCTOR BONDING IN APAC TO GROW AT HIGHEST CAGR DURING FORECAST PERIOD

TABLE 47 SEMICONDUCTOR BONDING MARKET, BY REGION, 2018–2020 (USD MILLION)

TABLE 48 SEMICONDUCTOR BONDING MARKET, BY REGION, 2021–2026 (USD MILLION)

10.2 APAC

FIGURE 37 APAC: SEMICONDUCTOR BONDING MARKET SNAPSHOT

TABLE 49 SEMICONDUCTOR BONDING MARKET IN APAC, BY TYPE, 2018–2020 (USD MILLION)

TABLE 50 SEMICONDUCTOR BONDING MARKET IN APAC, BY TYPE, 2021–2026 (USD MILLION)

TABLE 51 SEMICONDUCTOR BONDING MARKET IN APAC, BY PROCESS TYPE, 2018–2020 (USD MILLION)

TABLE 52 SEMICONDUCTOR BONDING MARKET IN APAC, BY PROCESS TYPE, 2021–2026 (USD MILLION)

TABLE 53 SEMICONDUCTOR BONDING MARKET IN APAC, BY APPLICATION, 2018–2020 (USD MILLION)

TABLE 54 SEMICONDUCTOR BONDING MARKET IN APAC, BY APPLICATION, 2021–2026 (USD MILLION)

TABLE 55 SEMICONDUCTOR BONDING MARKET IN APAC, BY DIE BONDING TECHNOLOGY, 2018–2020 (USD MILLION)

TABLE 56 SEMICONDUCTOR BONDING MARKET IN APAC, BY DIE BONDING

TECHNOLOGY, 2021–2026 (USD MILLION)

TABLE 57 SEMICONDUCTOR BONDING MARKET IN APAC, BY WAFER BONDING TECHNOLOGY, 2018–2020 (USD MILLION)

TABLE 58 SEMICONDUCTOR BONDING MARKET IN APAC, BY WAFER BONDING TECHNOLOGY, 2021–2026 (USD MILLION)

TABLE 59 SEMICONDUCTOR BONDING MARKET IN APAC, BY COUNTRY, 2018–2020 (USD MILLION)

TABLE 60 SEMICONDUCTOR BONDING MARKET IN APAC, BY COUNTRY, 2021–2026 (USD MILLION)

10.2.1 TAIWAN

10.2.1.1 Presence of many key OSAT companies drives market growth in Taiwan

10.2.2 CHINA

10.2.2.1 Growing trend of miniaturization of consumer electronic products spurs market growth in China

10.2.3 JAPAN

10.2.3.1 Increasing demand for passenger cars and commercial vehicles and expanding presence of market players in country fuel market growth in Japan

10.2.4 SOUTH KOREA

10.2.4.1 South Korea to continue to account for largest market size in APAC during 2021–2026

10.2.5 REST OF APAC

10.2.5.1 Strong presence of semiconductor bonding manufacturers accelerates market growth in Rest of APAC

10.3 AMERICAS

FIGURE 38 AMERICAS: SEMICONDUCTOR BONDING MARKET SNAPSHOT

TABLE 61 SEMICONDUCTOR BONDING MARKET IN AMERICAS, BY TYPE, 2018–2020 (USD MILLION)

TABLE 62 SEMICONDUCTOR BONDING MARKET IN AMERICAS, BY TYPE, 2021–2026 (USD MILLION)

TABLE 63 SEMICONDUCTOR BONDING MARKET IN AMERICAS, BY PROCESS TYPE, 2018–2020 (USD MILLION)

TABLE 64 SEMICONDUCTOR BONDING MARKET IN AMERICAS, BY PROCESS TYPE, 2021–2026 (USD MILLION)

TABLE 65 SEMICONDUCTOR BONDING MARKET IN AMERICAS, BY APPLICATION, 2018–2020 (USD MILLION)

TABLE 66 SEMICONDUCTOR BONDING MARKET IN AMERICAS, BY APPLICATION, 2021–2026 (USD MILLION)

TABLE 67 SEMICONDUCTOR BONDING MARKET IN AMERICAS, BY DIE BONDING TECHNOLOGY, 2018–2020 (USD MILLION)

TABLE 68 SEMICONDUCTOR BONDING MARKET IN AMERICAS, BY DIE BONDING TECHNOLOGY, 2021–2026 (USD MILLION)

TABLE 69 SEMICONDUCTOR BONDING MARKET IN AMERICAS, BY WAFER BONDING TECHNOLOGY, 2018–2020 (USD MILLION)

TABLE 70 SEMICONDUCTOR BONDING MARKET IN AMERICAS, BY WAFER BONDING TECHNOLOGY, 2021–2026 (USD MILLION)

TABLE 71 SEMICONDUCTOR BONDING MARKET IN AMERICAS, BY COUNTRY, 2018–2020 (USD MILLION)

TABLE 72 SEMICONDUCTOR BONDING MARKET IN AMERICAS, BY COUNTRY, 2021–2026 (USD MILLION)

10.3.1 US

10.3.1.1 US to continue to lead semiconductor bonding market in Americas during 2021–2026

10.3.2 CANADA

10.3.2.1 Ongoing government initiatives toward development of electric vehicle infrastructure to create market opportunities in near future

10.3.3 REST OF AMERICAS

10.3.3.1 Increasing demand for IoT and 5G is boosting demand for die bonding equipment in Rest of Americas

10.4 EUROPE

FIGURE 39 EUROPE: SEMICONDUCTOR BONDING MARKET SNAPSHOT

TABLE 73 SEMICONDUCTOR BONDING MARKET IN EUROPE, BY TYPE, 2018–2020 (USD MILLION)

TABLE 74 SEMICONDUCTOR BONDING MARKET IN EUROPE, BY TYPE, 2021–2026 (USD MILLION)

TABLE 75 SEMICONDUCTOR BONDING MARKET IN EUROPE, BY PROCESS TYPE, 2018–2020 (USD MILLION)

TABLE 76 SEMICONDUCTOR BONDING MARKET IN EUROPE, BY PROCESS TYPE, 2021–2026 (USD MILLION)

TABLE 77 SEMICONDUCTOR BONDING MARKET IN EUROPE, BY APPLICATION, 2018–2020 (USD MILLION)

TABLE 78 SEMICONDUCTOR BONDING MARKET IN EUROPE, BY APPLICATION, 2021–2026 (USD MILLION)

TABLE 79 SEMICONDUCTOR BONDING MARKET IN EUROPE, BY DIE BONDING TECHNOLOGY, 2018–2020 (USD MILLION)

TABLE 80 SEMICONDUCTOR BONDING MARKET IN EUROPE, BY DIE BONDING TECHNOLOGY, 2021–2026 (USD MILLION)

TABLE 81 SEMICONDUCTOR BONDING MARKET IN EUROPE, BY WAFER BONDING TECHNOLOGY, 2018–2020 (USD MILLION)

TABLE 82 SEMICONDUCTOR BONDING MARKET IN EUROPE, BY WAFER BONDING TECHNOLOGY, 2021–2026 (USD MILLION)

TABLE 83 SEMICONDUCTOR BONDING MARKET IN EUROPE, BY COUNTRY, 2018–2020 (USD MILLION)

TABLE 84 SEMICONDUCTOR BONDING MARKET IN EUROPE, BY COUNTRY, 2021–2026 (USD MILLION)

10.4.1 GERMANY

10.4.1.1 Adoption of smart homes and connected cars to spur demand in Germany

10.4.2 UK

10.4.2.1 Deployment of 5G infrastructure is fueling market growth in UK

10.4.3 FRANCE

10.4.3.1 Developed communication network has prompted market growth in France

10.4.4 IRELAND

10.4.4.1 Presence of Intel's fab primarily drives market growth in Ireland

10.4.5 ITALY

10.4.5.1 Technology enhancements by players such as STMicroelectronics surge growth of semiconductor manufacturing equipment market in Italy

10.4.6 REST OF EUROPE

10.4.6.1 Initiatives of semiconductor bonding manufacturers to propel market growth in Rest of Europe

10.5 ROW

TABLE 85 SEMICONDUCTOR BONDING MARKET IN ROW, BY TYPE, 2018–2020 (USD MILLION)

TABLE 86 SEMICONDUCTOR BONDING MARKET IN ROW, BY TYPE, 2021–2026 (USD MILLION)

TABLE 87 SEMICONDUCTOR BONDING MARKET IN ROW, BY PROCESS TYPE, 2018–2020 (USD MILLION)

TABLE 88 SEMICONDUCTOR BONDING MARKET IN ROW, BY PROCESS TYPE, 2021–2026 (USD MILLION)

TABLE 89 SEMICONDUCTOR BONDING MARKET IN ROW, BY APPLICATION, 2018–2020 (USD MILLION)

TABLE 90 SEMICONDUCTOR BONDING MARKET IN ROW, BY APPLICATION, 2021–2026 (USD MILLION)

TABLE 91 SEMICONDUCTOR BONDING MARKET IN ROW, BY DIE BONDING TECHNOLOGY, 2018–2020 (USD MILLION)

TABLE 92 SEMICONDUCTOR BONDING MARKET IN ROW, BY DIE BONDING TECHNOLOGY, 2021–2026 (USD MILLION)

TABLE 93 SEMICONDUCTOR BONDING MARKET IN ROW, BY WAFER BONDING TECHNOLOGY, 2018–2020 (USD MILLION)

TABLE 94 SEMICONDUCTOR BONDING MARKET IN ROW, BY WAFER BONDING TECHNOLOGY, 2021–2026 (USD MILLION)

TABLE 95 SEMICONDUCTOR BONDING MARKET IN ROW, BY REGION, 2018–2020 (USD MILLION)

TABLE 96 SEMICONDUCTOR BONDING MARKET IN ROW, BY REGION, 2021–2026 (USD MILLION)

11 COMPETITIVE LANDSCAPE

11.1 INTRODUCTION

11.2 REVENUE ANALYSIS

FIGURE 40 REVENUE ANALYSIS OF TOP THREE COMPANIES, 2020

11.3 MARKET SHARE ANALYSIS, 2020

TABLE 97 SEMICONDUCTOR BONDING MARKET: MARKET SHARE ANALYSIS (2020)

11.4 KEY PLAYER STRATEGIES/RIGHT TO WIN

11.4.1 OVERVIEW OF STRATEGIES DEPLOYED BY KEY SEMICONDUCTOR BONDING COMPANIES

11.5 COMPETITIVE LEADERSHIP MAPPING

11.5.1 STAR

11.5.2 EMERGING LEADER

11.5.3 PERVASIVE

11.5.4 PARTICIPANT

FIGURE 41 SEMICONDUCTOR BONDING MARKET: COMPETITIVE LEADERSHIP MAPPING, 2020

11.5.5 SEMICONDUCTOR BONDING MARKET: TYPE FOOTPRINT

TABLE 98 COMPANY FOOTPRINT

TABLE 99 APPLICATION FOOTPRINT OF COMPANIES

TABLE 100 REGIONAL FOOTPRINT OF COMPANIES

11.6 COMPETITIVE SITUATIONS AND TRENDS

11.6.1 SEMICONDUCTOR BONDING MARKET: PRODUCT LAUNCHES, JANUARY 2018–APRIL 2021

11.6.2 SEMICONDUCTOR BONDING MARKET: DEALS, JANUARY 2018–APRIL 2021

12 COMPANY PROFILES

(Business Overview, Products/services Offered, Recent Developments, and MnM View (Key strengths/Right to Win, Strategic Choices Made, and Weaknesses and

Competitive Threats))*

12.1 INTRODUCTION

12.2 KEY PLAYERS

12.2.1 ASM PACIFIC TECHNOLOGY

FIGURE 42 ASM PACIFIC TECHNOLOGY: COMPANY SNAPSHOT

12.2.2 BESI

FIGURE 43 BESI: COMPANY SNAPSHOT

12.2.3 PANASONIC

FIGURE 44 PANASONIC: COMPANY SNAPSHOT

12.2.4 FASFORD TECHNOLOGY

FIGURE 45 FUJI CORPORATION: COMPANY SNAPSHOT

12.2.5 SHINKAWA LTD

FIGURE 46 YAMAHA MOTOR ROBOTICS HOLDING CO.: COMPANY SNAPSHOT

12.2.6 EV GROUP (EVG)

12.2.7 SUSS MICROTECH SE

FIGURE 47 SUSS MICROTECH SE: COMPANY SNAPSHOT

12.2.8 KULICKE & SOFFA INDUSTRIES

FIGURE 48 KULICKE & SOFFA INDUSTRIES: COMPANY SNAPSHOT

12.2.9 PALOMAR TECHNOLOGIES

12.2.10 SHIBAURA MECHATRONICS

FIGURE 49 SHIBAURA MECHATRONICS: COMPANY SNAPSHOT

12.3 OTHER KEY PLAYERS

12.3.1 TDK CORPORATION

12.3.2 TOKYO ELECTRON LIMITED

12.3.3 MITSUBISHI HEAVY INDUSTRIES MACHINE TOOLS

12.3.4 MYCRONIC GROUP

12.3.5 INTEL

12.3.6 SAMSUNG

12.3.7 CANON ANELVA CORPORATION

12.3.8 FINETECH

12.3.9 DR. TRESKY

12.3.10 SET CORPORATION SA

12.3.11 TOKYO OHKA KOYGO

12.3.12 BONDTECH

12.3.13 AYUMI INDUSTRIES

12.3.14 APPLIED MICROENGINEERING LIMITED

12.3.15 TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY (TSMC)

12.3.16 TORAY ENGINEERING

*Details on Business Overview, Products/services Offered, Recent Developments, and

MnM View (Key strengths/Right to Win, Strategic Choices Made, and Weaknesses and Competitive Threats) might not be captured in case of unlisted companies.

13 APPENDIX

13.1 INSIGHTS OF INDUSTRY EXPERTS

13.2 DISCUSSION GUIDE

13.3 KNOWLEDGE STORE: MARKETSandMARKETS' SUBSCRIPTION PORTAL

13.4 AVAILABLE CUSTOMIZATIONS

13.5 RELATED REPORTS

13.6 AUTHOR DETAILS

I would like to order

Product name: Semiconductor Bonding Market by Type (Die Bonder, Wafer Bonder, and Flip Chip Bonder), Application (RF Devices, MEMS and Sensors, LED, 3D NAND and CMOS Image Sensors), Process Type, Technology and Region - Global Forecast to 2026

Product link: <https://marketpublishers.com/r/SA610E0B04B8EN.html>

Price: US\$ 4,950.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/SA610E0B04B8EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:
Last name:
Email:
Company:
Address:
City:
Zip code:
Country:
Tel:
Fax:
Your message:

****All fields are required**

Customer signature _____

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below

and fax the completed form to +44 20 7900 3970