SEMI Business Briefing Session (Semiconductor Back-End Manufacturing Equipment)

Growth Strategy Toward Becoming a World-Class Total Solutions Provider

September 10, 2026

Yamaha Motor Co., Ltd.

Yamaha Robotics Co., Ltd.

YAMAHA

Agenda

1: Overview of the Robotics Business

Ayako Egashira
Executive Officer and Chief General Manager
of Solution Business Operations
Yamaha Motor Co., Ltd.

2: Yamaha Robotics' SEMI Business Growth Strategy

Ryosuke Nakamura
President & Representative Director
Yamaha Robotics Co., Ltd.

- About Yamaha Robotics' SEMI Business
- What Is Semiconductor Back-End Processing?
- Growth Strategy Toward Becoming a Top-Class Solutions Provider

3: Q&A Session

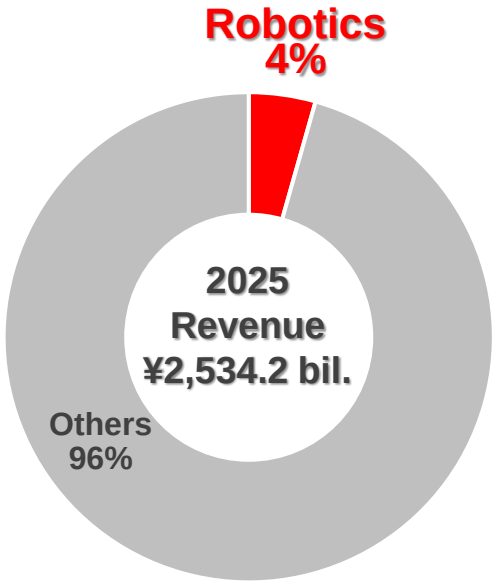
Overview of the Robotics Business

Ayako Egashira

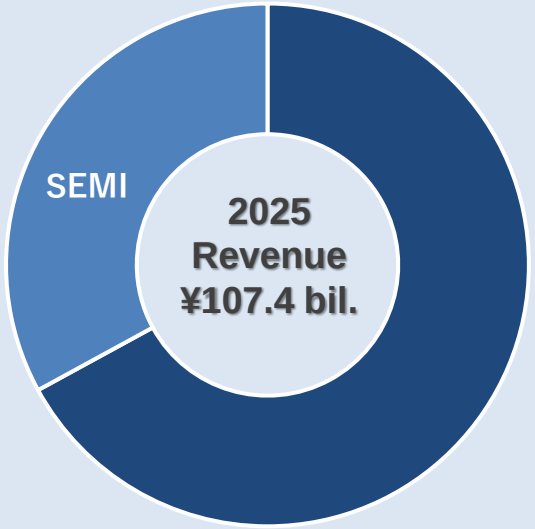
Executive Officer and Chief General Manager
of Solution Business Operations
Yamaha Motor Co., Ltd.

Robotics Business Overview

Consolidated Revenue



Robotics Business



Main Products

SMT Systems

- Surface Mounters
- Solder-Paste Printers
- Dispensers
- Inspection Systems
- Management Software

Factory Automation
(Industrial Robots)

- Linear Conveyor Modules
- SCARA Robots
- Cartesian / Single-Axis Robots

SEMI
Semiconductor Manufacturing Systems

- Bonding equipment
- Molding equipment
- Other automation equipment

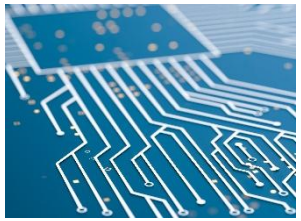
* From 2026, the Unmanned Systems (UMS) business (drones and industrial unmanned helicopters) that was under the Robotics business was transferred to the Other Products business

From Semiconductor Back-End Processing to Assembly and Inspection

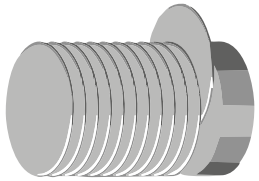
Offer new solutions and FA products bridging the SMT market and the semiconductor back-end market

Streamlining the entire process and the entire factory with one of the industry's most comprehensive lineups

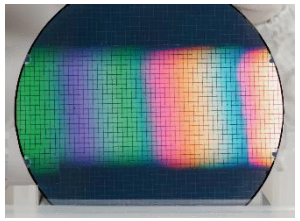
Semiconductor/Electronic Component Manufacturing Process



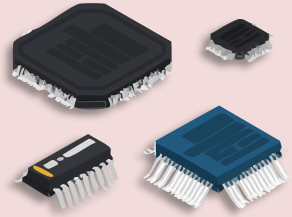
Circuit Design



Wafer Manufacturing

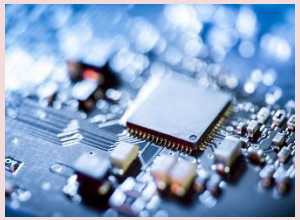


Front-End Process



Back-End Process

Surface Mount Technology (SMT) Process



Surface Mounting

Assembly/Inspection

YAMAHA

Dicing

SMT

Flip Chip

Die Bonding

Wire Bonding

Molding

Lead Processing

Inspection

Testing

SMT

YAMAHA Shinkawa YAMADA PFA YAMAHA

MR Flip Chip

TCB Flip Chip

Die Bonder

Wire Bonder

Molding

Inspection

Semiconductor Back-End Process

SMT

Surface Mounting

Robot

Assembly

Integration with our robotics divisions enables automation, optimization, and unmanned operation of manufacturing processes

YAMAHA

Factory Automation

Supporting a rapidly digitalizing world and transforming mobility with our One-Stop Smart Solution

Input

R&D expenses

vs. previous MTP

1.3x

Capital investment

vs. previous MTP

SMT **0.7x**

SEMI **2.2x**

Human capital development

Engineers

1.2x

Total demand by segment

Surface Mount Technology

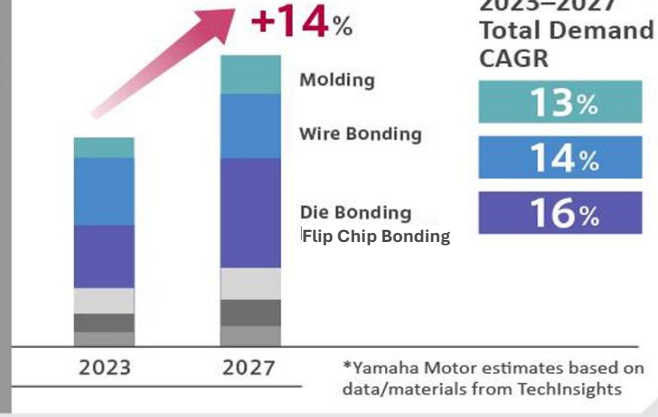
2023–2027 Total Demand CAGR

Automotive	13%
Electric devices	9%
Communication infrastructure	11%

*Yamaha Motor estimates based on data/materials from Fuji Keizai

Total demand by segment

Semiconductor Back-end Equipment



2023–2027 Total Demand CAGR

Molding	13%
Wire Bonding	14%
Die Bonding Flip Chip Bonding	16%

*Yamaha Motor estimates based on data/materials from TechInsights

Gain market share by evolving our One-Stop Smart Solution

Combine a diverse range of products and support the automation of our global clients' production processes to achieve both growth and profitability

SMT — Revenue CAGR 15%

Aim to secure a place among the industry's top three by proactively securing new major automotive sector clients and EMS clientele

Ratio of sales from automotive sector 18%(2024) → **30%** (2027) or higher

- Strengthen development of functions to achieve greater factory floor automation
- Reinforce organizational structure to respond to global clientele
- Raise profitability through more efficient business activities

SEMI — Revenue CAGR 18%

Redefine our market position ahead of technological advances

- Concentrate resources on cutting-edge semiconductor fields
- Increase production capacity
- Change organizational structure to promote business restructuring

Factory Automation (FA) — Revenue CAGR 14%

Create automated solutions coordinating SMT and SEMI

- Enhance ability to propose solutions based on transport-related products
- Strengthen product lineup
- Bolster organization to serve global clientele

Business KPI

2027 Target

Revenue Growth

CAGR **15**% range

ROS

17% range

*Before HQ corporate expense allocations

ROIC

15% range

*Before HQ corporate expense allocations

As professionals leveraging advanced robot technologies and all-inclusive solutions, we deliver on the automation needs of the global manufacturing industry with elegance and efficiency

Yamaha Robotics' SEMI Business Growth Strategy

Ryosuke Nakamura

President and Representative Director
Yamaha Robotics Co., Ltd.

SEMI Business Overview

YAMAHA

Yamaha Motor Co., Ltd.
Solutions Business Operations

Robotics Business Unit

Surface Mounters (SMT)
Industrial Robots (FA)

Established
August 6, 1959
*Renamed from Shinkawa Ltd. on July 1, 2019
*Renamed to Yamaha Robotics Co., Ltd. on July 1, 2025 following the integration of 4 companies

YAMAHA

Yamaha Robotics Co., Ltd.

Shinkawa series | PFA series | YAMADA series

Semiconductor back-end processes (SEMI)
Semiconductor/Electronic Component Manufacturing

Employees

Japan: Approx. 900
Overseas: Approx. 500

Japan: 2
Overseas: 12

Locations

1 STOP SMART SOLUTION

1: The development capabilities to meet diverse needs

2: The flexibility to work with global clientele

3: The ability to propose targeted total solutions

Yamaha Robotics Co., Ltd.


Flip Chip Bonder


Die/Wire Bonder


Molding Equipment

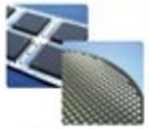

Electronic Device Assembly Equipment

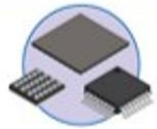
SEMI Operations


Semiconductor Back-End Processes


Die Bonding


Wire Bonding


Molding


IC Packaging


Camera Module


Visual Inspection


Electronic Component Mounting


Solder Paste Inspection


Solder Paste Printing

Assembly

Surface Mount Technology Processes

▶ High Reliability

▶ High Production Efficiency

▶ High Quality

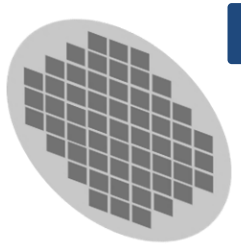
Industrial Robots

Robotics Business Unit, Yamaha Motor Co., Ltd.

Semiconductor Back-End Processes

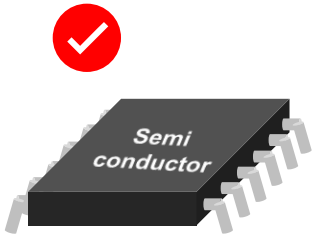
SEMI business provides one-stop equipment, solutions for high-speed, high-precision back-end semiconductor processes

Front-End — Circuit Formation



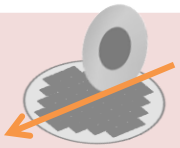
Processes silicon wafers to create integrated circuits

Back-End — Assembly/Packaging



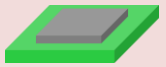
Wafers are diced and undergo various processes to become a finished product, e.g., frame mounting, electrode connection, and resin coating

Cut

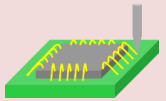


Dicing
Wafers with circuits are separated into individual semiconductor chips with a cutting device

Connect



Die Bonding
The separated semiconductor chips are picked up and fixed to a substrate using bonding materials



Wire Bonding
Once fixed, the chip's electrodes, substrate, external lead frame, etc., are connected with metal wires

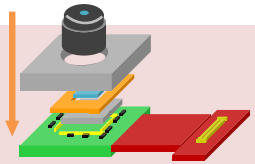
Seal

Molding
The chip is encapsulated with resin or other molding compounds

Inspect

Inspection
A visual inspection and electrical testing are conducted

Assemble



Assembly
The semiconductors are installed into camera modules and electronic components

SEMI Business Solutions

YAMAHA

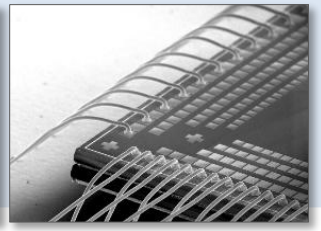
Assembly Solutions

Connect Inspect

Shinkawa series

Connecting Cutting-Edge Semiconductors with Leading Bonding Technologies

SHINKAWA Series

- Die Bonders
- Wire Bonders
- Flip Chip Bonders

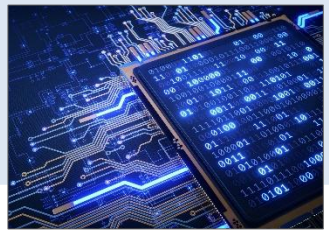
Locations: West Tokyo Site, Hamamatsu Site

Assemble Inspect

PFA series

Providing a Wide Range of FA Equipment for Semiconductor and Electronics Manufacturing

PFA Series

- FA Equipment

For electronic device and semiconductor manufacturing

Locations: Saitama Site

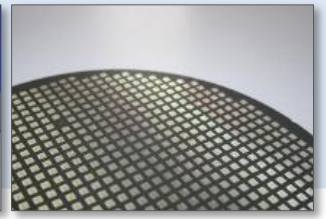
Packaging Solutions

Package Inspect

YAMADA series

An Industry Leader in Semiconductor Molding

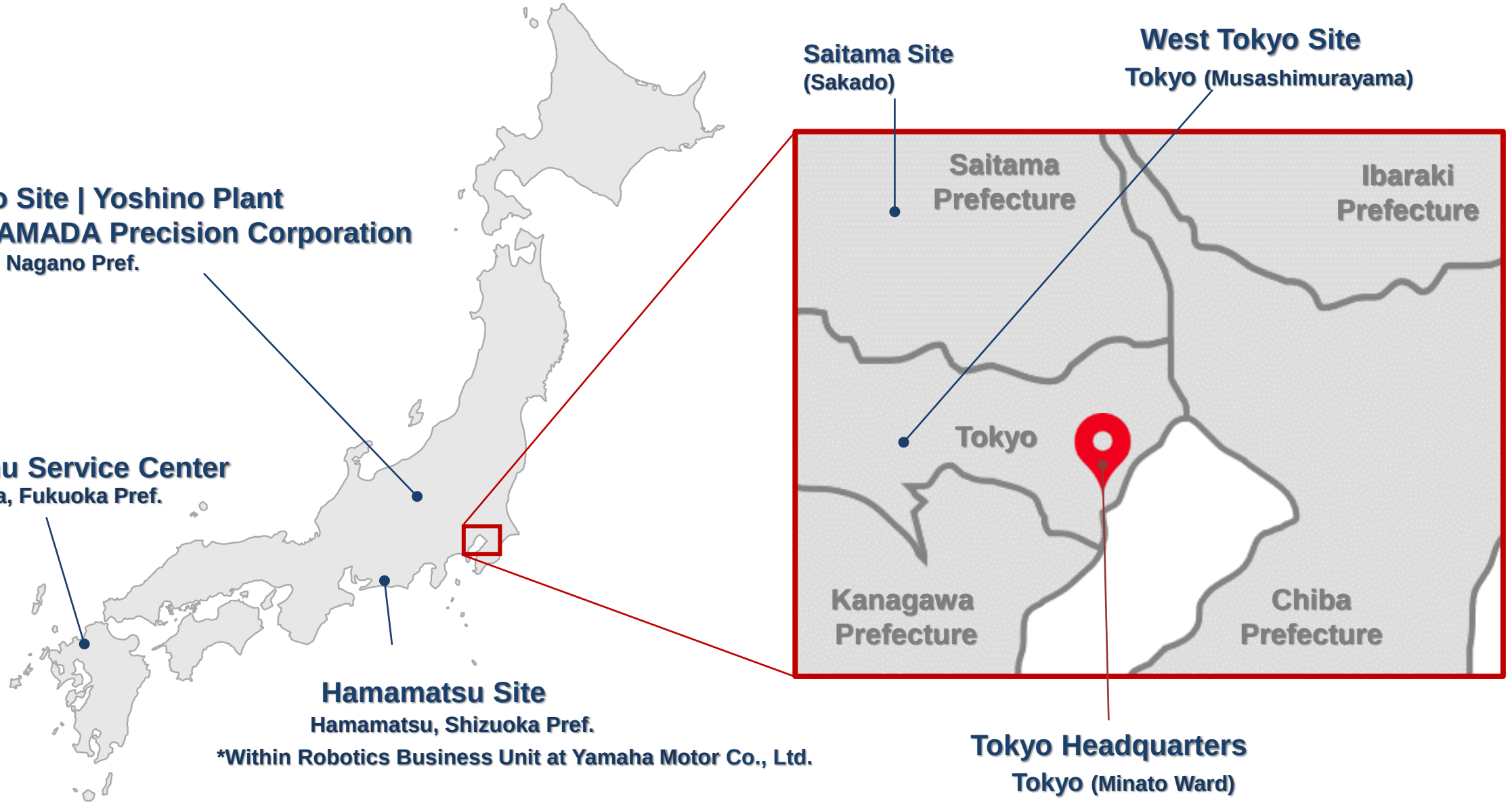
APIC YAMADA Series

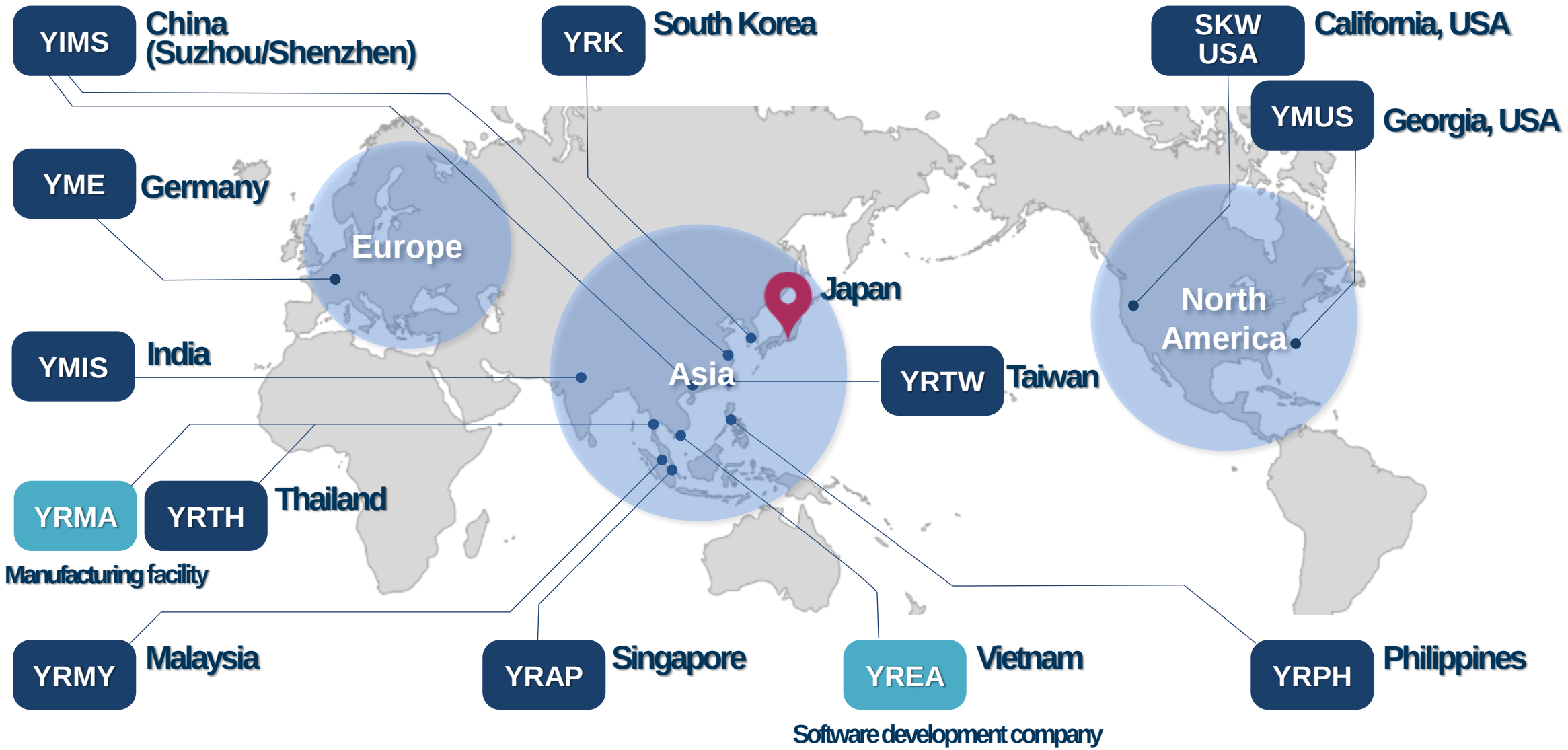
- Molding Equipment / Molds
- Lead Processing Equipment / Molds
- Lead Frame Components

Locations: Nagano Office, Yoshino Plant

Yamaha Robotics Co., Ltd.: Domestic Locations



Yamaha Robotics Co., Ltd.: Global Network

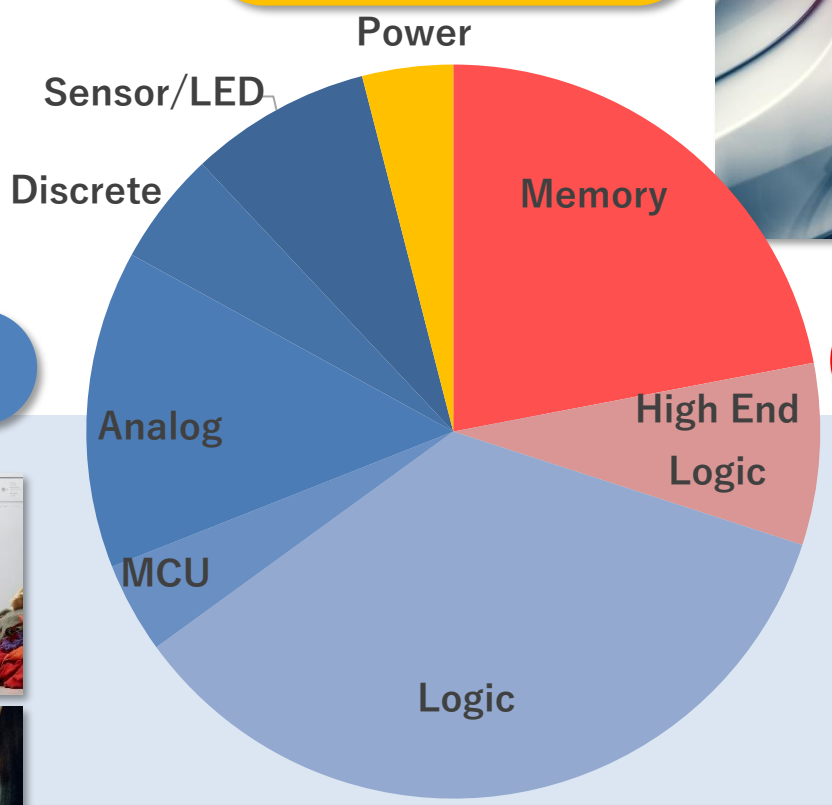


Semiconductor Market Revenue Breakdown

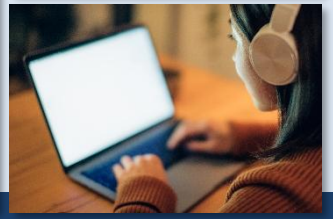
*Yamaha Motor data (2022–2024)

Developments with advanced, power, and our core-market mainstream semiconductors
Back-end solutions are supporting the further evolution of semiconductors

Power Semiconductors



Mainstream Semiconductors

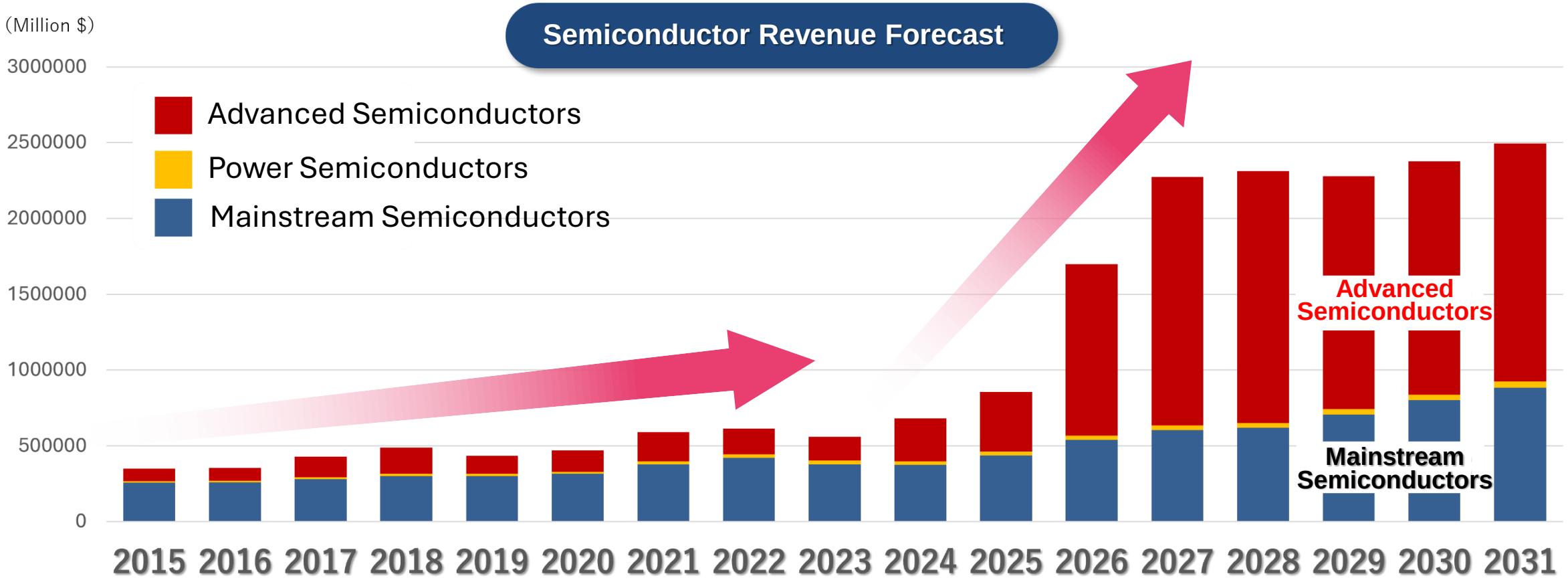


Advanced Semiconductors

Generative AI

Semiconductor Market Trends: Structural Changes Driving Back-End Market Growth

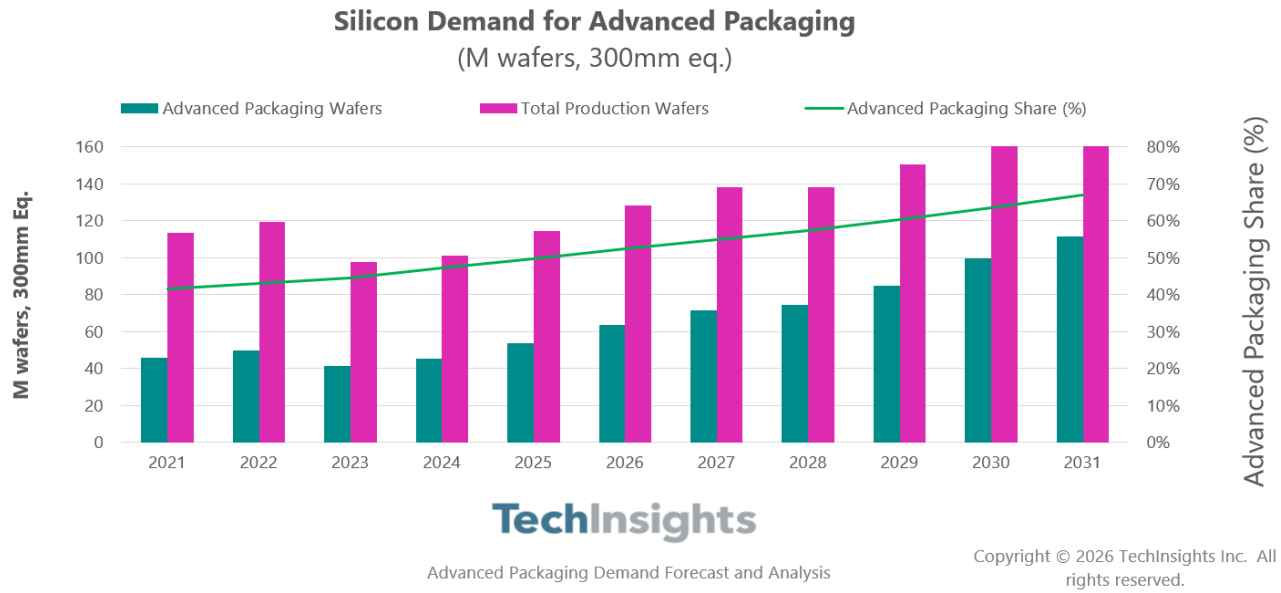
The arrival of the AI era is sending the semiconductor market upward faster than expected
Expected to exceed $1 trillion in 2026 ahead of the 2029 forecast



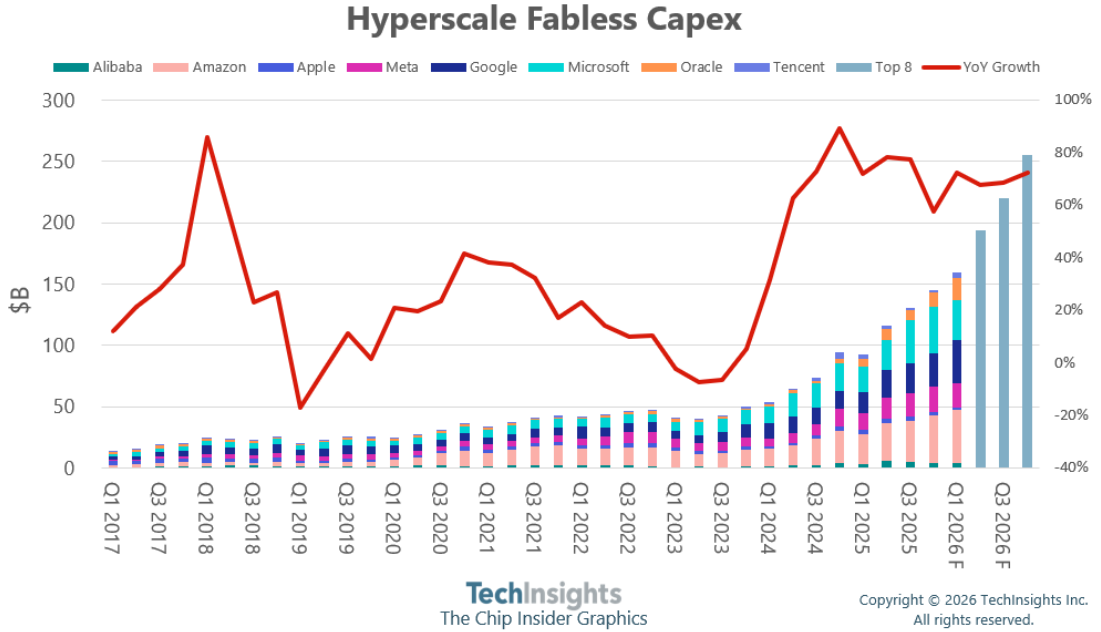
*Prepared by Yamaha Motor Co., Ltd. based on Semiconductor Forecast from TechInsights Inc.

Focus Markets Early Investments to Position Yamaha to Capture AI-Driven Growth

Advanced semiconductors driving the semiconductor market



Investment in AI data centers expected to continue



Source: TechInsights Inc.

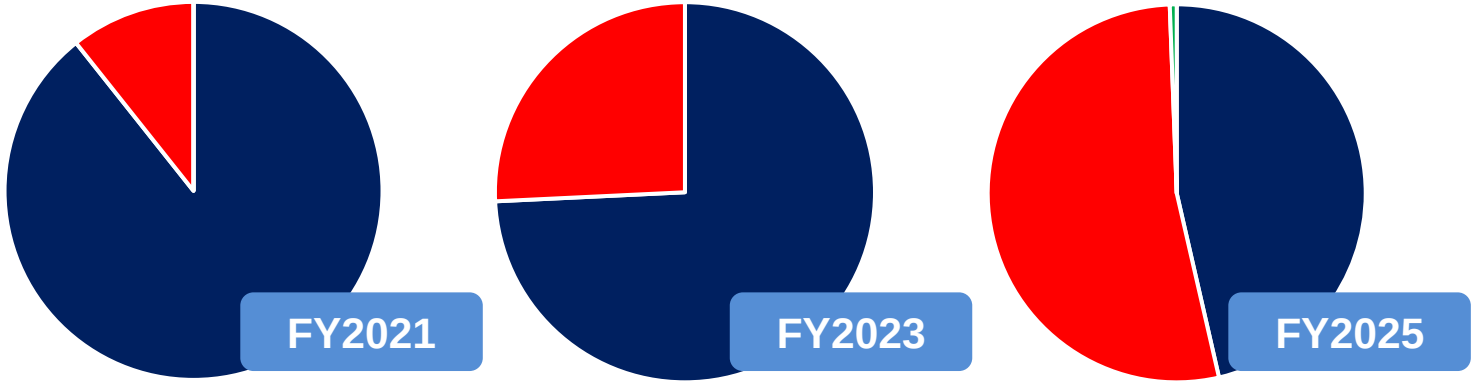
Yamaha Robotics Revenue Breakdown

Revenue from advanced semiconductor applications (growth area) is becoming a primary driver

New Areas (Next-Generation)

Growth Areas (Advanced)

Core Areas (Mainstream)



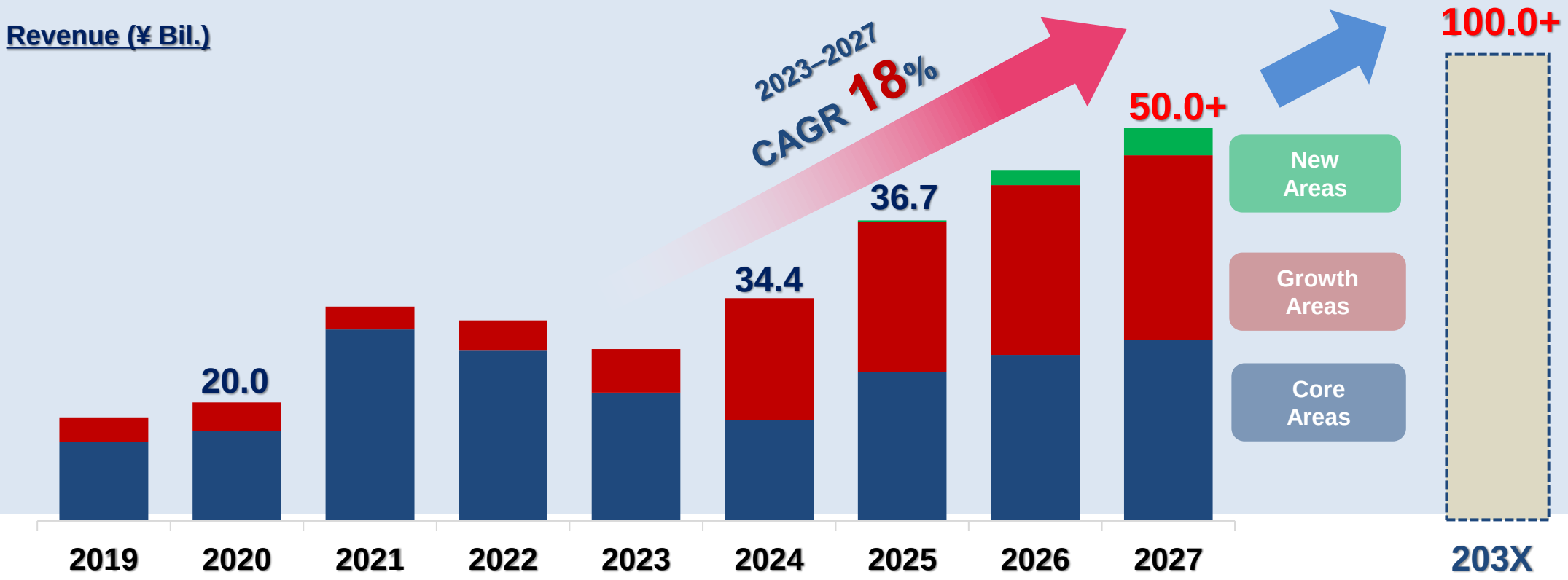
Earn in Core Areas, Grow via Growth Areas, and Create the Future in New Areas

2019–2021
Restore Financial Strength
Strengthen Earning Capability

2022–2024
Strengthen Five Customer-Centric Capabilities
Develop Competitive New Products

2025–2027
Maximize Synergies
Create New Processing Technologies

203X
World-Class Semiconductor Processing
Become a Total Solutions Provider

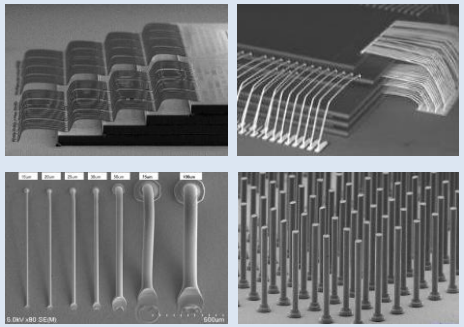


Business Growth: Core Area (Mainstream Semiconductors)

Launch Progress of New Platform Models

UTC-RZ1: High-Speed, High-Precision Wire Bonder

- Compact design with high productivity (37% higher productivity per unit floor space)
- Energy savings (-12% power consumption, -50% air consumption)
- Proprietary automation technology



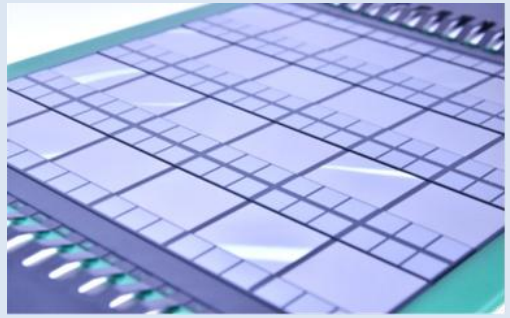
High-Speed, High-Precision Wire Bonding in a Compact, Energy-Saving Design

UTC-RZ1

- Client certifications progressing, full-scale sales expected from 2026
- Growing demand for several products for AI data centers and optical transceivers
- Developing next-generation technologies using the new platform as a base

MS-R Series: Multi-Process Molding System

- High productivity and ultra-high precision
- Versatility and scalability
- Equipped with newly developed workpiece handling mechanism
- Narrow-gap molding and Mold Under Fill (MUF) technology
- Flash-free and chip exposure molding



Precision Molding Technology Providing Compatibility with the Latest Processes

MS-R series

- Handling a wide range of semiconductor manufacturing processes, with client certifications progressing steadily and receiving high evaluations
- Higher orders thanks to high quality and productivity enabled by unique molding technology

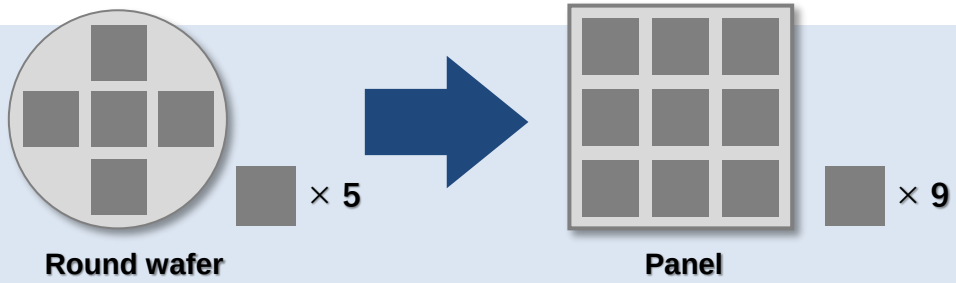
Business Growth: Growth Areas (Advanced Semiconductors)

Focusing Investments on Technology Development for Growth Areas

Aligning with the industry shift from round wafers to panels

Handling Next-Generation Panel-Level Packaging

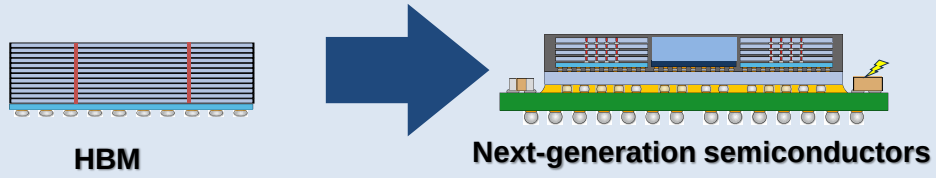
Flip-chip bonders and molding systems



Handling New Advanced Semiconductor Processes

Enabling higher HBM stacking, greater precision, higher throughput, and improved yield

*High Bandwidth Memory



Flip-Chip Bonders

Compatible with a wide range of next-generation processes and features ultra-compact size, high speed, and versatility

- Client evaluations underway for a high-precision model targeting next-generation HBM
- Launch of a panel-level packaging compatible model
- Development of next-generation process technologies is underway

Advanced Molding

Strengths in cutting-edge process development backed by precision molding technology and extensive technical expertise

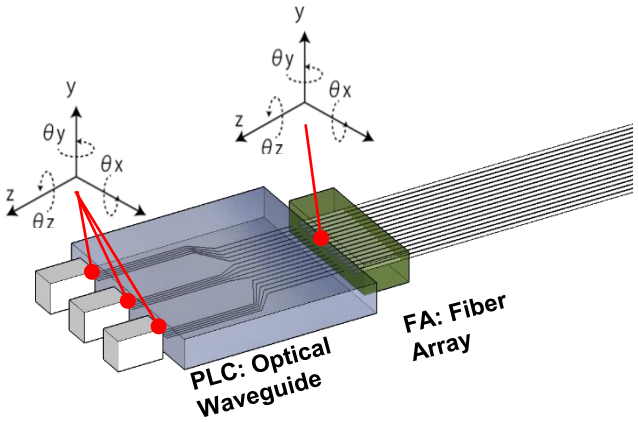
- Sales expansion of wafer-level packaging compatible models
- Launch of a panel-level packaging compatible model
- Client evaluations initiated for the new Zero-CCM Mold Technology

Business Growth: New Areas (Silicon Photonics)

Silicon Photonics

Adapting Active Alignment Technology to Achieve Highly Precise Optical Connections

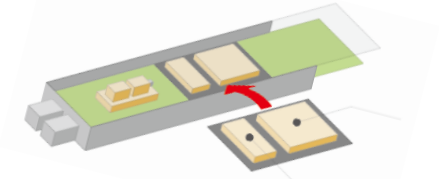
Contributing to lower power consumption by shifting from electrical to optical connections



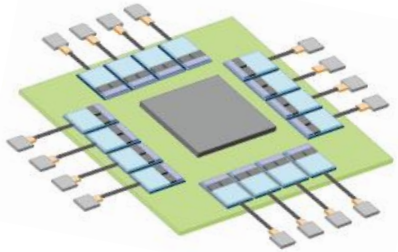
High-speed active alignment technology

Strengths in high-precision mounting and automation technologies

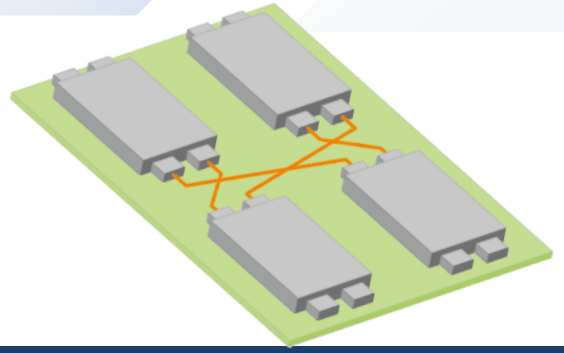
Transceiver/LPO
200 Gbps–1.6 Tbps

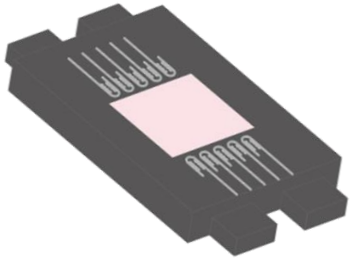


NPO
800 Gbps–3.2 Tbps



CPO
6.4 Tbps or more





*Product images created by Yamaha Motor based on materials from various companies

Business Growth: New Areas
(Pushing the Development of Future Technologies and New Businesses)

Collaboration and Co-Creation with Partners, Universities, and Research Institutions

CEATEC AWARD 2025: Innovation Award

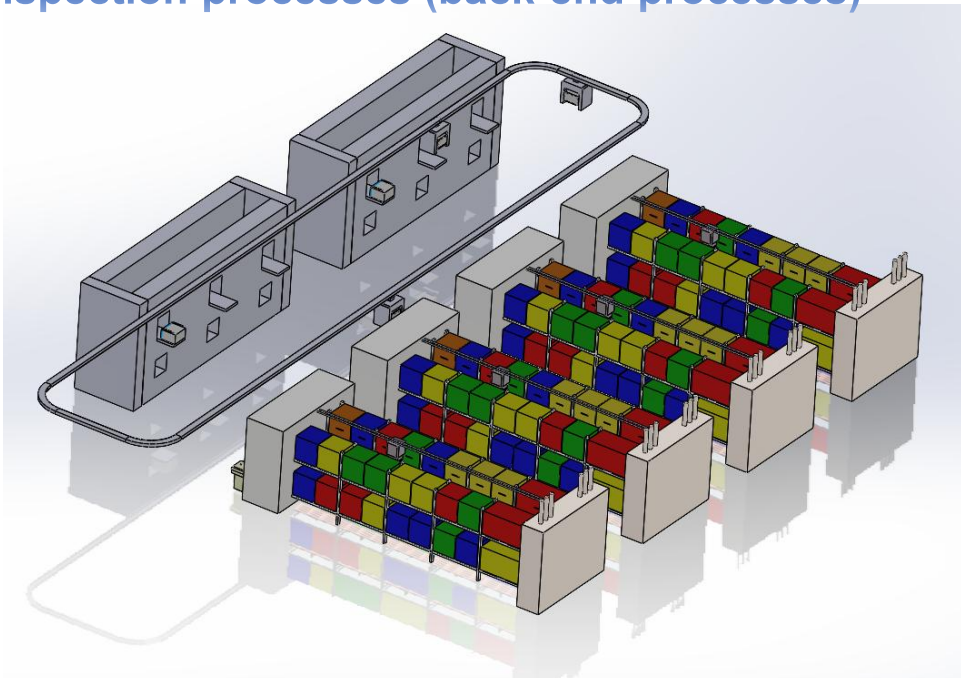
*Jointly developed and awarded with
AIST and Tokyo University of Science

- Micro-particle removal/cleaning and foreign particle inspection
- Ultrasonic contactless handling technology

Joined the Semiconductor Assembly Test Automation and Standardization Research Association (SATAS)

Contributing to the Automation of Semiconductor Back-End Packaging Processes

Promoting labor savings, automation, and standardizations in semiconductor assembly and inspection processes (back-end processes)



*Source: SATAS

Strengthening Competitiveness to Support Profitable Growth

More high-value-added offerings, manufacturing reforms, greater revenue from services, and talented personnel will support growth and improved profitability

Enhancing Profitability

1) Focused Investments into Growth Markets
- Increase high-value-added offerings in AI, HBM, and photonics-electronics convergence
- Expand sales in advanced semiconductor applications
- Capture opportunities in the growing generative AI market

2) Manufacturing Reforms and Intercompany Synergies
- Improve cost competitiveness
- Expand production capacity at Nagano plant and increase utilization at Thailand facility
- Improve productivity and reduce costs

3) Expansion of Solutions and Services
- Shift from equipment sales to production-line solutions
- Strengthen maintenance and upgrade services
- Increase the proportion of service-related revenue

Bolstering the Personnel Base for Growth

1) Securing Global Talent
- Boost recruitment of new graduates and experienced professionals
- Leverage the Yamaha brand to attract talent
- Expand international hiring

2) Enhancing Technological Capabilities
- Work together with universities and technical high schools
- Promote joint research initiatives
- Develop next-generation engineering talent

3) Improving Organizational Capabilities
- Maximize synergies among the four group companies
- Promote technology exchanges and joint development
- Strengthen global coordination

Key Takeaways

1 Capturing AI-Driven Growth in Semiconductor Back-End Processes to Drive Revenue Gains

- Growing demand from generative AI, HBM, and optical transceiver markets
- Expanding orders through targeted investments in growth areas
- Solutions for advanced semiconductor applications driving growth

2 Establishing a Competitive Advantage Through Strong Core Technologies and Intercompany Synergies

- Core technologies in connecting, assembling, packaging, and inspection
- Strengthened development, manufacturing, sales, and service capabilities through the four-company integration
- Maximizing customer value through our One-Stop Smart Solution approach

3 Raising Corporate Value Through Growth and Profitability

- Generating stable earnings from core areas
- Promoting high-value-added offerings in the advanced semiconductor domain
- Achieving sustainable growth through early investments in new business areas