



Ferrotec Holdings Corporation

# Results for the Fiscal Year Ended March 31, 2024

**Fri., May 31, 2024**

1. This fiscal year results cover period from January to December 31, 2024 of consolidated subsidiaries.
2. This presentation was prepared for the purpose of providing information regarding the company's results of operations for the fiscal year ended March 31, 2024 and is not a solicitation to purchase securities issued by the company. Please ensure that the decision on whether to make an investment in our company is made at your own risk.
3. These materials were prepared based on information available as of date of the disclosure. All opinions, forecasts and other forward-looking statements are based on management's judgments in accordance with materials available at that time and may be changed without prior notice.

# Consolidated Financial Summary

(Million yen)	FY3/23	FY3/24	YoY		
	Amount	Amount	Amount	Pct. change (%)	
Net sales	210,810	222,430	11,620	5.5	Net sales: Up 5.5% YoY Gross profit: Down 3.1% YoY •The sales of power semiconductor substrates and sensors increased, but the sales of materials, such as ceramics and Si parts, decreased. •Gross profit declined, due to the augmentation of costs, including depreciation, in the wake of the construction of new factories and the capital investment.
Cost of sales	138,728	152,573	13,844	10.0	
Gross profit	72,081	69,856	-2,224	-3.1	
SG&A expenses	37,038	44,984	7,945	21.5	SG&A expenses: Up 21.5% YoY. Augmentation of labor costs and test research expenses in addition to the increase of a new company in Malaysia, new businesses, etc. Non-operating income: Down 1.87 billion yen YoY (exchange gain: down 4.11 billion yen, income from subsidies: up 860 million yen) Non-operating expenses: Up 3.87 billion yen YoY (loss on equity method affiliates regarding wafers, SiC wafers, etc.: up 3.13 billion yen)
Operating income	35,042	24,872	-10,170	-29.0	
Non-operating income	9,872	8,002	-1,870	-18.9	
Non-operating expenses	2,466	6,337	3,870	156.9	Extraordinary income of 750 million yen: Gain from changes in equity of 710 million yen (in-kind contribution to SiC wafers) Extraordinary loss of 1.15 billion yen: Loss on valuation of investment securities of 520 million yen and impairment loss of 420 million yen Non-controlling interests: 5.48 billion yen • Silicon parts and quartz crucibles business: 2.16 billion yen • Power semiconductor business: 2.99 billion yen • Cleaning business: 890 million yen • Wafer business: -530 million yen
Ordinary income	42,448	26,537	-15,911	-37.5	
Extraordinary income	856	754	-101	-11.9	
Extraordinary loss	1,263	1,145	-117	-9.3	
Net income attributable to non-controlling shareholders	4,585	5,481	895	19.5	
Net income attributable to owners of parent	29,702	15,154	-14,548	-49.0	
Capital investment*	62,660	78,599	15,938	-	
Depreciation	12,618	16,398	3,779	30.0	
Exchange rate (average during the period)	US\$: 132.08 yen RMB: 19.50 yen	US\$: 141.20 yen RMB: 19.87 yen	-	-	

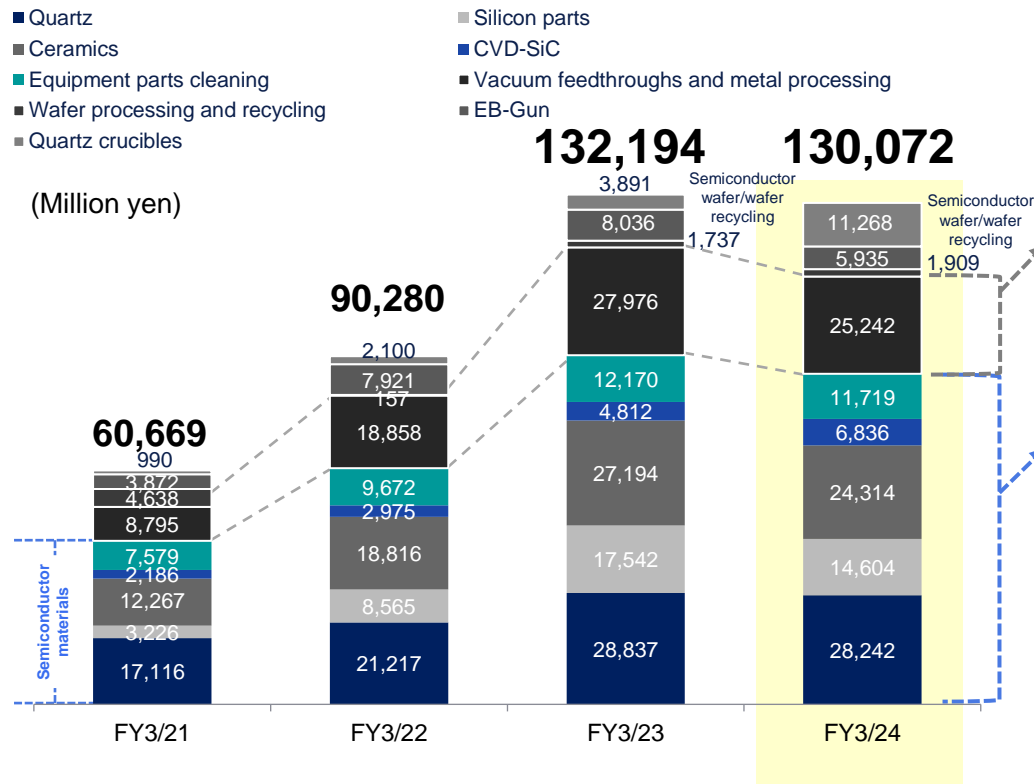
\*Investment amount = Total amount of tangible fixed assets, intangible fixed assets and securities to be acquired, etc.

# Sales and Operating Income by Segment

Net sales (¥ in millions)	FY3/23		FY3/24		YoY	
	Amount	Pct. of sales (%)	Amount	Pct. of sales (%)	Difference	Pct. change (%)
Semiconductor and other equipment-related	132,194	62.7	130,072	58.5	-2,122	-1.6
Electronic device	53,024	25.2	67,600	30.4	14,575	27.5
Others	25,590	12.1	24,757	11.1	-832	-3.3
Total	210,810	100.0	222,430	100.0	11,620	5.5

Operating income (¥ in millions)	FY3/23		FY3/24		YoY	
	Amount	Profit margin (%)	Amount	Profit margin (%)	Difference	Pct. change (%)
Semiconductor and other equipment-related	24,090	18.2	16,260	12.5	-7,830	-32.5
Electronic device	11,178	21.1	10,890	16.1	-288	-2.6
Others	597	2.3	-1,197	-	-1,795	-
Corporate & elimination	-824	-	-1,080	-	-256	-
Total	35,042	16.6	24,872	11.2	-10,170	-29.0

## Transition of sales



## Overview of this segment

The sales of ceramics, silicon parts, vacuum feedthroughs, metal processing, etc. decreased YoY, while the sales of quartz crucibles and CVD-SiC increased, but the sales of this segment declined by 2.1 billion yen.

## Vacuum feedthroughs and metal processing, Wafer processing and recycling

The sales of vacuum feedthroughs and metal processing decreased by 1.2 billion yen YoY due to the slowdown of manufacturing of semiconductor equipment, but a recovery trend was observed in the second half of the fiscal year (sales increased 22% between the first and second halves.)

## Semiconductor materials, Cleaning business

[Semiconductor materials (quartz, silicon parts, ceramics, and CVD-SiC)]

- Quartz: The sales of machined products for existing semiconductor equipment makers were sluggish. Despite the efforts to strengthen products processed with fire, sales declined by 600 million yen from the previous fiscal year, and profit margin, too, decreased.
- Silicon parts: Sales decreased by 2.9 billion yen as demand shrank due to the downturn of production of semiconductors and semiconductor equipment.
- Ceramics: Sales decreased by 2.9 billion yen as demand shrank due to the downturn of production of semiconductors and semiconductor equipment.
- CVD-SiC: Demand and supply were stable. Sales increased by 2.0 billion yen due to the increase in production output of Okayama Factory.

[Cleaning Business]

- Due to the downturn in production of semiconductors, sales declined by 500 million yen in the fiscal year, but increased 16% between the first and second halves.

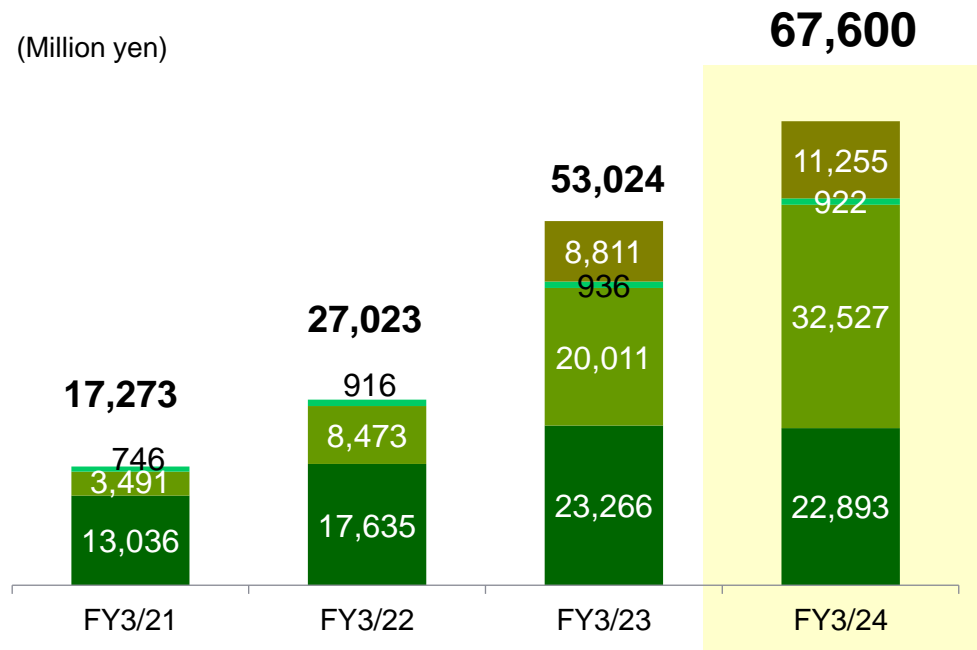
[Quartz crucibles]

- Sales of large-sized quartz crucibles for photovoltaic power generation increased by 7.4 billion yen. The performance slowed down in Q4 due to rapid fluctuations in demand.

## Transition of sales

- Thermo-electric module
- Power semiconductor substrates
- Ferrofluid, others
- Sensor

(Million yen)



## Overview of this segment

- In the segment of electronic devices, the sales expansion of power semiconductor substrates increased, and the inclusion of Ohizumi Mfg., which specializes in sensors, produced some effects, so sales increased by 14.6 billion yen YoY.

### [Thermo-electric modules]

- The sales of thermo-electric modules for medical examination equipment reached a peak, and the sales of products for telecommunication devices subsided. Accordingly, the sales of thermo-electric modules dropped by 200 million yen.

### [Power semiconductor substrates]

- As the demand for DCB and AMB substrates was healthy and the production capacity of Dongtai Factory, etc. increased, sales grew 12.3 billion yen. However, in Q4, sales declined due to the adjustment of order placement, etc.

### [Sensors]

- Increased by 2.4 billion yen; Sales increased due to the consolidation of Ohizumi Mfg. (Q2 FY3/23).

# Consolidated Balance Sheet -Assets-

(Million yen)	FY3/23 Year-end	FY3/24 Year-end	Difference
Current assets	215,341	<b>248,408</b>	33,066
Cash & deposits	103,115	<b>117,254</b>	14,139
Note & accounts receivable	53,276	<b>61,940</b>	8,663
Inventories	49,177	<b>56,909</b>	7,731
Fixed assets	195,306	<b>261,618</b>	66,312
Tangible fixed assets	139,610	<b>201,339</b>	61,729
Buildings and structures	38,080	<b>66,583</b>	28,503
Equipment and machinery	44,171	<b>59,533</b>	15,361
Tools, furniture, and fixture	5,984	<b>7,468</b>	1,484
Land	4,451	<b>4,660</b>	209
Leased assets (net)	11,009	<b>12,018</b>	1,009
Construction in progress	35,913	<b>51,075</b>	15,161
Intangible fixed assets	6,949	<b>6,611</b>	-338
Goodwill	2,304	<b>2,010</b>	-294
Investments & other assets	48,745	<b>53,666</b>	4,921
Total assets	410,648	<b>510,026</b>	99,378

## [Major factors for increase in current assets]

- Cash and deposits: Up 14.1 billion yen (up 12.4 billion yen due to the new sensor manufacturing company in Lishui, up 10.4 billion yen due to the new company in Malaysia, etc.)
- Trade receivables and inventories increased due to an increase in sales.

## [Major factors for increase in tangible fixed assets and Intangible assets]

- Tangible fixed assets increased by 61.7 billion yen due to capital expenditures in Malaysia.  
(Malaysia FTMM: up 16.6 billion yen, Changshan silicon parts: up 4.5 billion yen, Changshan ceramics, etc.: up 6.1 billion yen, Sichuan power semiconductor substrates: up 7.8 billion yen, Yinchuan FTNC quartz crucibles, etc.: up 7.1 billion yen, Japan FTMT/FTHD: 5.9 billion yen, etc.)

## [Major factors for increase in investments and other assets]

- Investment securities, differed tax assets and other assets increased by 4.9 billion yen.

# Consolidated Balance Sheet -Liabilities and Net Assets-

(Million yen)	FY3/23 Year-end	FY3/24 Year-end	Difference
Current assets	111,294	122,148	10,854
Notes and accounts payable	40,524	38,334	-2,189
Short-term debt	20,378	26,454	6,076
Current portion of long-term borrowings + bonds	15,825	21,022	5,197
Fixed assets	49,697	109,712	60,014
Bonds	4,083	320	-3,763
Convertible bond-type bonds with share acquisition rights	-	25,000	25,000
Long-term debt	26,432	62,364	35,931
Total liabilities	160,991	231,860	70,869
Net assets	249,656	278,166	28,509
Shareholder's equity	166,955	177,638	10,682
Total accumulated other comprehensive income	16,773	26,771	9,997
Non-controlling interests	65,887	73,756	7,869
Total liabilities & net assets	410,648	510,026	99,378
Equity ratio	44.7%	40.1%	-4.6pt
Exchange rate (year-end rate)	US\$: 132.70 yen RMB: 19.01 yen	US\$: 141.83 yen RMB: 19.93 yen	-

## [Major factors for changes in current and fixed liabilities] Figures in parentheses compare with the end of FY3/23.

Short-term debt + Current portion of long-term borrowings + bonds: 47.5 billion yen (+11.3 billion yen)

Long-term debt + Bonds and convertible bond-type bonds with share acquisition rights: 87.7 billion yen (+57.2 billion yen)

Total interest-bearing debt: 135.2 billion yen (+68.4 billion yen)

## [Major factors for changes in net assets]

- Shareholder's equity: Up 10.7 billion yen (retained earnings: up 10.2 billion yen)
- Total accumulated other comprehensive income: Up 10 billion yen (Foreign currency translation adjustment: up 8.8 billion yen )
- Non-controlling interests: Up 6.0 billion yen (Power semiconductor substrates: up 4.1 billion yen, silicon parts and quartz crucibles: up 2.9 billion yen, cleaning: up 1.4 billion yen )

## [Equity ratio]

- Equity ratio: 40.1%

# Consolidated Cash Flow

(Million yen)	FY3/23	FY3/24
<b>Cash flow from operating activities</b>	<b>43,024</b>	<b>28,720</b>
Income before income tax	42,041	26,146
Depreciation	12,618	16,398
Foreign exchange loss (-: gain)	-1,402	-798
Changes in notes & accounts receivable (-: increase)	-3,139	-4,919
Changes in inventories (-: increase)	-14,354	-5,177
Changes in notes and accounts payable-trade (-: decrease)	6,516	-4,472
Loss on (-: gain) changes in equity	-651	-710
Others	1,395	2,252
<b>Cash flow from investing activities</b>	<b>-68,760</b>	<b>-92,400</b>
Payments for purchase of tangible fixed assets	-56,001	-74,489
Proceeds from sales of tangible fixed assets	236	259
Payments for purchase of intangible fixed assets	-976	-737
Payments for purchase of investment securities	-4,607	-2,098
Others	-7,412	-15,335
<b>Cash flow from financing activities</b>	<b>68,718</b>	<b>60,419</b>
Changes in short-term debt	11,687	5,314
Proceeds from long-term borrowings	24,256	57,734
Payments of long-term borrowings	-8,311	-16,860
Proceeds from issuance of convertible bond-type bonds with share acquisition rights	-	24,898
Proceeds from share issuance to non-controlling shareholders	47,607	5,183
Others	-6,521	-15,850
<b>Changes in cash and cash equivalents</b>	<b>43,326</b>	<b>901</b>
Cash and cash equivalents, beginning of year	52,579	95,905
Cash and cash equivalents, end of year	95,905	96,806

## [Operating cash flow]

**Depreciation: 16.4 billion yen YoY: Up 3.8 billion yen**

**Changes in notes and accounts receivable, inventories, and accounts payable-trade: -14.6 billion yen**

## [Investing cash flow]

**Purchase of tangible fixed assets: -74.5 billion yen**

**Others: -15.3 billion yen**

• Increase/decrease in time deposits: -14.1 billion yen

## [Financial cash flow]

**Proceeds from share issuance to non-controlling shareholders: 5.2 billion yen**

• Sensor company in Lishui: 5.0 billion yen

**Others: -15.9 billion yen**

• Redemption of corporate bonds: -4.7 billion yen

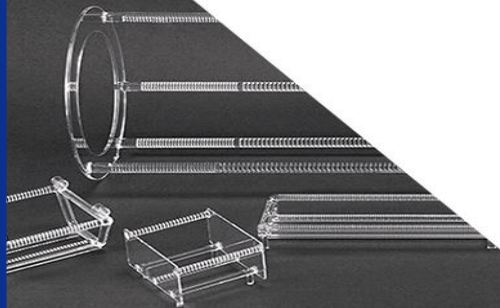
• Payment of dividends: -4.9 billion yen

• Acquisition of shares of a subsidiary (Ohizumi Mfg. Co., Ltd.): -5.9 billion yen





## FY3/25 Full-year Business Forecasts



# FY3/25 Full-year Business Forecasts

(Million yen)	FY3/24	FY3/25 (Plan)	YoY (%)	Details and assumptions of the plan
Net sales	222,430	235,000	5.7	<ul style="list-style-type: none"> <li>• The sales from manufacturing of semiconductor equipment, vacuum feedthroughs, and metal processing are expected to recover.</li> <li>• As for materials, recovery is projected to be delayed due to inventory issues.</li> <li>• Depreciation is forecast to augment due to the construction of new factories, etc.</li> </ul>
Operating income	24,872	26,000	4.5	
Ordinary income	26,537	26,000	-2.0	
Net income attributable to owners of parent	15,154	16,000	5.6	<ul style="list-style-type: none"> <li>• There will be no longer exchange gain, which was 1.4 billion yen in the previous fiscal year.</li> <li>• It is forecast that there will be no extraordinary income or loss.</li> </ul>
Depreciation and amortization	16,398	20,000	22.0	<ul style="list-style-type: none"> <li>• Increase in depreciation due to the enlargement of factories</li> </ul>
EBITDA	41,270	46,000	11.5	-
Investment amount*	78,599	63,000	-19.8	Investment in semiconductor materials and metal processing (Malaysia, Ishikawa, etc.), power semiconductor substrates (Sichuan and Malaysia), and sensors in Lishui
Assumed exchange rate (average for the period)	US\$: 141.20 yen RMB: 19.87 yen	US\$: 150 yen RMB: 21 yen	-	The yen appreciation is expected in the second half, but these exchange rates are used, because the account closing month of some business companies is December.

Note: Investment amount = Total amount of tangible fixed assets, intangible fixed assets and securities to be acquired, etc.

# Segment Information: Semiconductor and Other Equipment-related **FerroTec**

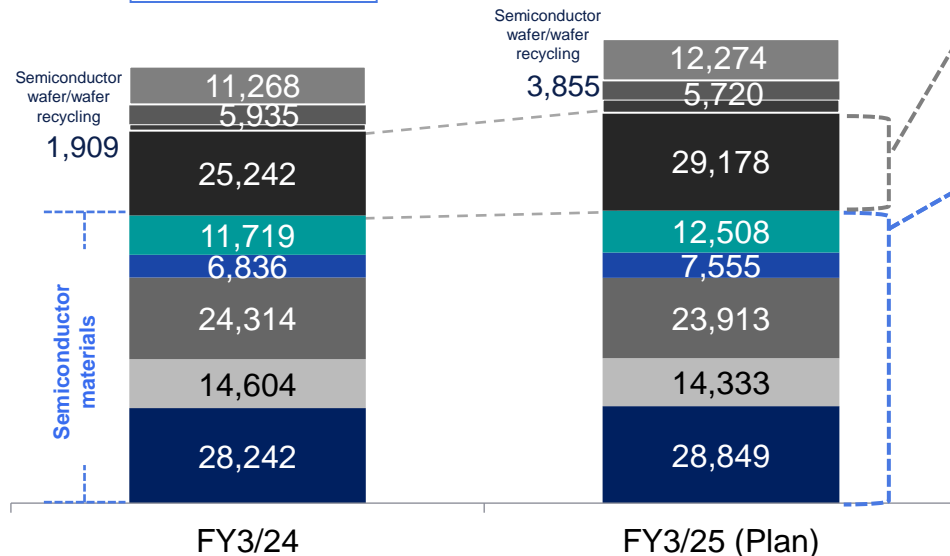
## Transition of sales

- Quartz
- Ceramics
- Equipment parts cleaning
- Wafer processing and recycling
- Quartz crucibles
- Silicon parts
- CVD-SiC
- Vacuum feedthroughs and metal processing
- EB-gun

(Million yen)

**130,072**

**138,185**



## Overview of this segment

- The manufacturing of semiconductor equipment is expected to return to normal, and the performance of vacuum feedthroughs and metal processing is forecast to recover, increasing sales.
- The performance of semiconductor materials is projected to improve, but it is assumed that the recovery will be delayed in 2024, due to the inventory adjustment at client companies.

## Vacuum feedthroughs and metal processing

- The sales of vacuum feedthroughs and metal processing from semiconductor manufacturing equipment makers have been recovering since the second half of the previous fiscal year, and are projected to be almost unchanged in 2024.

## Semiconductor materials, Cleaning business

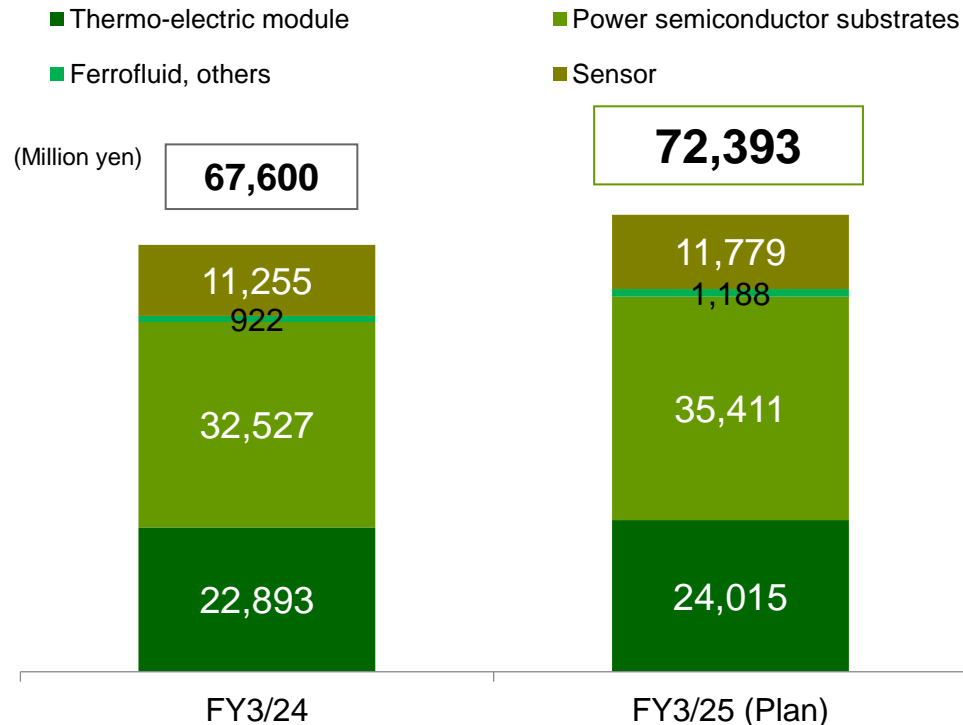
[Semiconductor materials (quartz, silicon parts, ceramics, and CVD-SiC)]

- Quartz: Sales are forecast to rise slightly YoY, as it is assumed that recovery will be delayed due to inventory issues at the clients' side.
- Silicon parts: Sales are projected to decline slightly YoY, as it is assumed that there are significant inventory issues at the clients' side.
- Ceramics: Sales are forecast to rise slightly YoY, as it is assumed that recovery will be delayed due to inventory issues at the clients' side.
- CVD-SiC: Demand is forecast to be healthy, and it is assumed that performance will remain almost unchanged from the second half of the previous fiscal year.

[Quartz crucibles, Cleaning]

- Quartz crucibles: The production capacity of Yinchuan Factory was increased in the previous year, but sales are expected to grow 9% YoY due to the significant change in demand for photovoltaic power generation.
- Cleaning: Demand has been returning to normal since the second half of the previous fiscal year, and it is assumed that same performance will continue.

## Transition of sales



## Overview of this segment

•The sales of power semiconductor substrates are expected to keep growing, and the sales of thermo-electric modules are forecast to recover.

### [Thermo-electric modules]

•It is forecast that the products for 5G communication devices will get on a recovery track and the demand related to generative AI will grow.

### [power semiconductor substrates]

•The sales of DCB and AMB substrates are expected to keep growing.

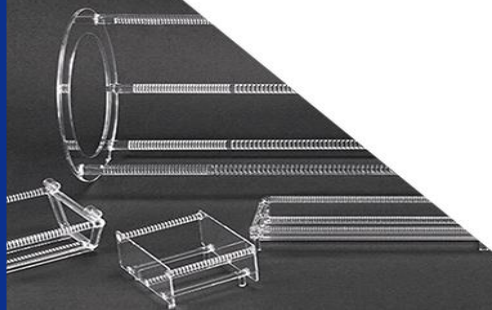
In the fourth quarter of FY3/24, order placement was adjusted, but the demand for products for EVs is expected to keep growing, and sales are expected to increase significantly, due to the investment for increasing production output.

### [Sensors]

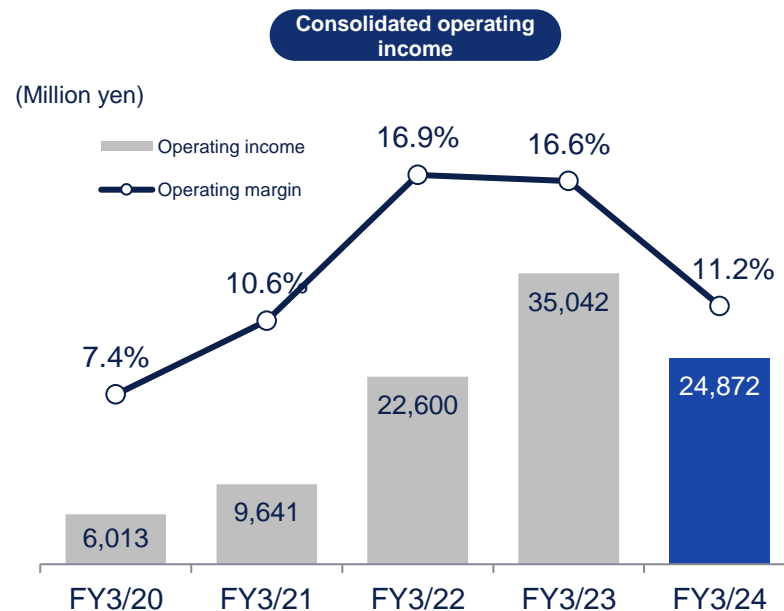
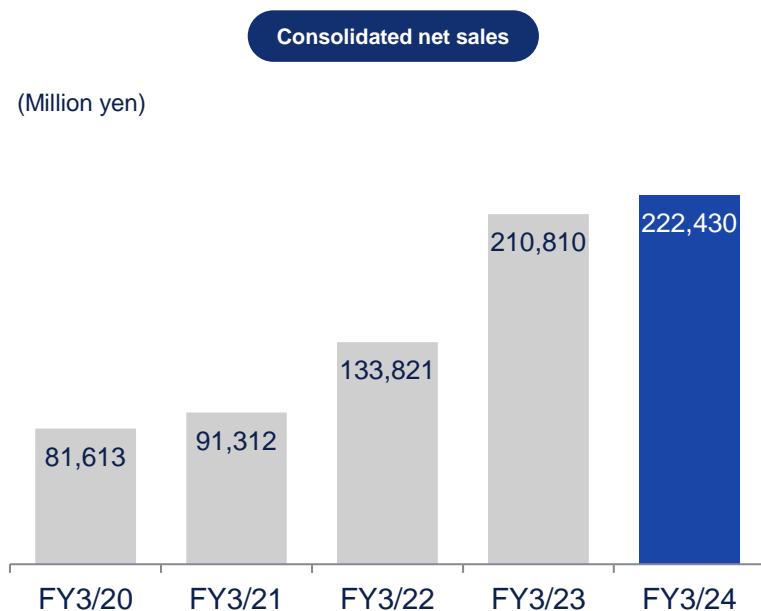
•The sales of sensors, mainly those for automobiles and air-conditioners, are projected to remain almost unchanged YoY.



# Medium-term Management Plan (FY3/25 to FY3/27)



- Amid the downturn in the semiconductor market, we enhanced the production of power semiconductor substrates, etc., so sales grew.
- We actively invested in Malaysia, etc. and preparations for manufacturing progressed steadily, but we are still at the start-up stage, so operating income declined.



# Review of KPIs in the Medium-term Management Plan

(Million yen)	Result at the time of formulation	Planned value for FY3/24		Result
	FY3/21 (actual)	Initial value	Revised value	FY3/24 (actual)
Net sales	91,312	150,000	220,000	222,430
Operating income	9,640	25,000	32,500	24,872
Operating margin	10.6%	16.7%	14.8%	11.2%
Net income	8,280	15,000	18,000	15,154
ROE	14.3%	15%	15%	7.7%
ROIC*	7.2%	8%	8%	4.4%
Equity ratio	37.9%	Over 40%	Over 40%	40%
Investment amount	14,297	26,000	96,900	78,599
Annual dividend per share	30.0 yen	Increase thanks to profit growth	100.0 yen	100.0 yen

\*ROIC = Net income attributable to owners of parent/(Interest-bearing debt + Net asset). Net asset does not include share acquisition rights or non-controlling interests' equity.  
The investment amount is the total amount of tangible fixed assets, intangible fixed assets and securities to be acquired, etc.

## Business growth

- From FY3/21 to FY3/24, net sales grew 2.43 times from 91.3 billion yen to 221.8 billion yen and operating income rose 2.60 times from 9.6 billion yen to 25.0 billion yen.
- In FY3/24, the worsening of the semiconductor market affected our business, but our position in the industry for major products improved, and our growth trend continued.

## Strengthening of our global manufacturing system

- In addition to the enhancement of production capacities of factories in China (Changshan, Sichuan, etc.), we upgraded the production sites in Kulim and Johor in Malaysia, and Ishikawa (No. 2 and No. 3) and Kumamoto in Japan.
- While increasing production capacities, we enhanced measures for dealing with customer needs arising out of the friction between the U.S. and China, etc.

## Strengthening of management foundation

- The tightening of quality control and digitalization and automation of manufacturing progressed significantly (adoption of automating equipment, AI-based inspection equipment, automated warehouses, etc.), and the R&D system for each business improved.
- The training of personnel for technology, marketing, management, machine operation, etc. progressed, and the Chinese headquarters was established.

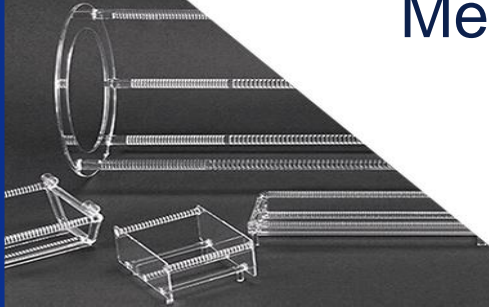
## Finance/Shareholder return

- In FY3/24, profit declined, because newly established bases, etc. were still to be operated and the semiconductor market worsened.
- Since FY3/23, we have been enhancing shareholder return under the policy of “making decisions while aiming to achieve a payout ratio of 20%.”





# Basic Policy, KPIs, and Financial Affairs of the Medium-term Management Plan



## Business growth

- To pursue the growth of businesses related to semiconductors and automobiles, and expand the businesses with significant market shares
- To strengthen our system in which the factories in Malaysia and Japan will meet the demand for products manufactured outside China, and Chinese factories will satisfy the demand for products manufactured in China

## Strengthening of production efficiency and competitiveness

- To proceed with digitalization, automation, etc. in order to increase our manufacturing capacity and improve the production efficiency and competitiveness of our factories
- To continue thoroughgoing quality control under the principle of “Quality is the most important,” strengthen our R&D system, and develop new products and technologies

## Strengthening of personnel and corporate culture

- To recruit skilled personnel, enrich our training system, and adopt stock-based compensation systems (RSU and PSU), while positioning the emphasis on personnel as an important management strategy
- A company’s culture is the foundation for the company. The guidelines for our activities are “to respect clients, employees, diligence, and trust, take action steadily, and pursue innovation,” and we will diffuse these guidelines.

## Finance/Shareholder return

- We will strive to increase revenues by starting the operation of enlarged factories early and make them contribute to performance.
- We will put importance on the increase of shareholder return and achieve a payout ratio of 20 to 30% (enrichment of shareholder return).

# KPIs of the Medium-term Management Plan

(Million yen)	FY3/24 (actual)	FY3/25 (forecast)	FY3/26 (plan)	FY3/27 (plan)
Net sales	222,430	235,000	300,000	380,000
Operating income	24,872	26,000	40,000	60,000
Operating margin	11.2%	11.1%	13.3%	15.8%
Net income	15,154	16,000	22,000	30,000
ROE	7.7%	→ 15%		
ROIC*	4.4%	→ 8%		
Equity ratio	40%	40%		
Capital investment	75,227	60,000	40,000	40,000
Annual dividend per share	100.0 yen	100.0 yen	While considering financial affairs and investment opportunities, we will make efforts to enrich dividends to <u>achieve a payout ratio of 20 to 30%.</u>	

\*ROIC = Net income attributable to owners of parent/(Interest-bearing debt + Net asset). Net asset does not include share acquisition rights or non-controlling interests' equity.

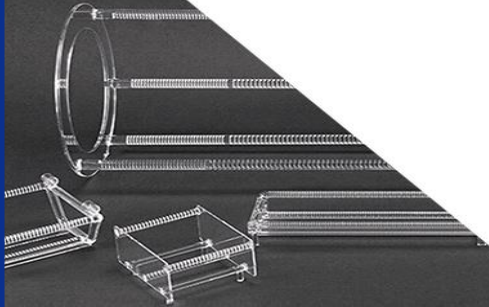
- We plan to spend a total of 140 billion yen in capital investment in 3 years, and the assumed cost for M&A is 10.0 billion yen, although it depends on investment opportunities.
- A portion of payment for equipment in Malaysia was delayed until FY3/25, causing some effects. The investment amount during the period from FY3/21 to FY3/24 was 182.5 billion yen\*, down 12.5 billion yen from the forecasted amount of 195.0 billion yen. \*Including the cost for acquiring the shares of a subsidiary in FY3/24 (posted in the financial cash flow).

**Total capital investment  
amount in the period from  
FY3/25 to FY3/27:  
140 billion yen**

- To meet the request from semiconductor-related clients for the enhancement of capacity from 2025
- To strengthen our production system outside China
- To keep investing in the automotive segment, including power semiconductor substrates
- Free cash flow is expected to improve, thanks to the increase in operating cash flow.



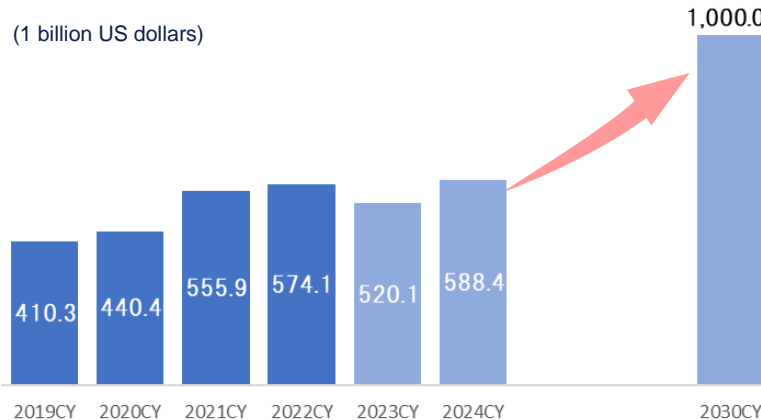
# Market Environment and Long-term Performance Trend



# The semiconductor market started recovering in 2024 and will grow at an accelerated pace in 2025.

- The scale of the semiconductor market is expected to exceed 1 trillion US dollars by 2030, and the demand for semiconductor manufacturing equipment will show an upward trend in 2024.
- Despite the impact of the semiconductor-related friction between the U.S. and China, the Chinese economy, which occupies the largest market share, is projected to grow.

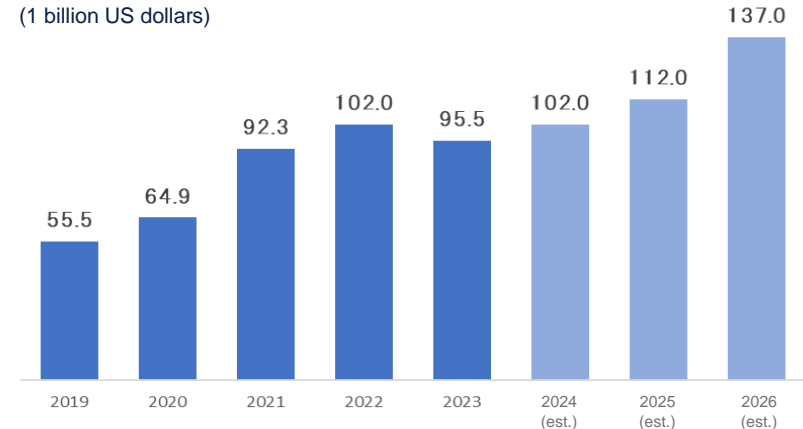
## Forecast of the semiconductor market



(1 billion US dollars)	2019CY	2020CY	2021CY	2022CY	2023CY	2024CY
Demand for semiconductors	410.3	440.4	555.9	574.1	520.1	588.4
Annual growth rate	-0.5%	+7.3%	+26.2%	+3.3%	-9.4%	+13.1%

\*Prepared by our company based on the data published by WSTS

## Forecast of WFE (Wafer Fab Equipment) market

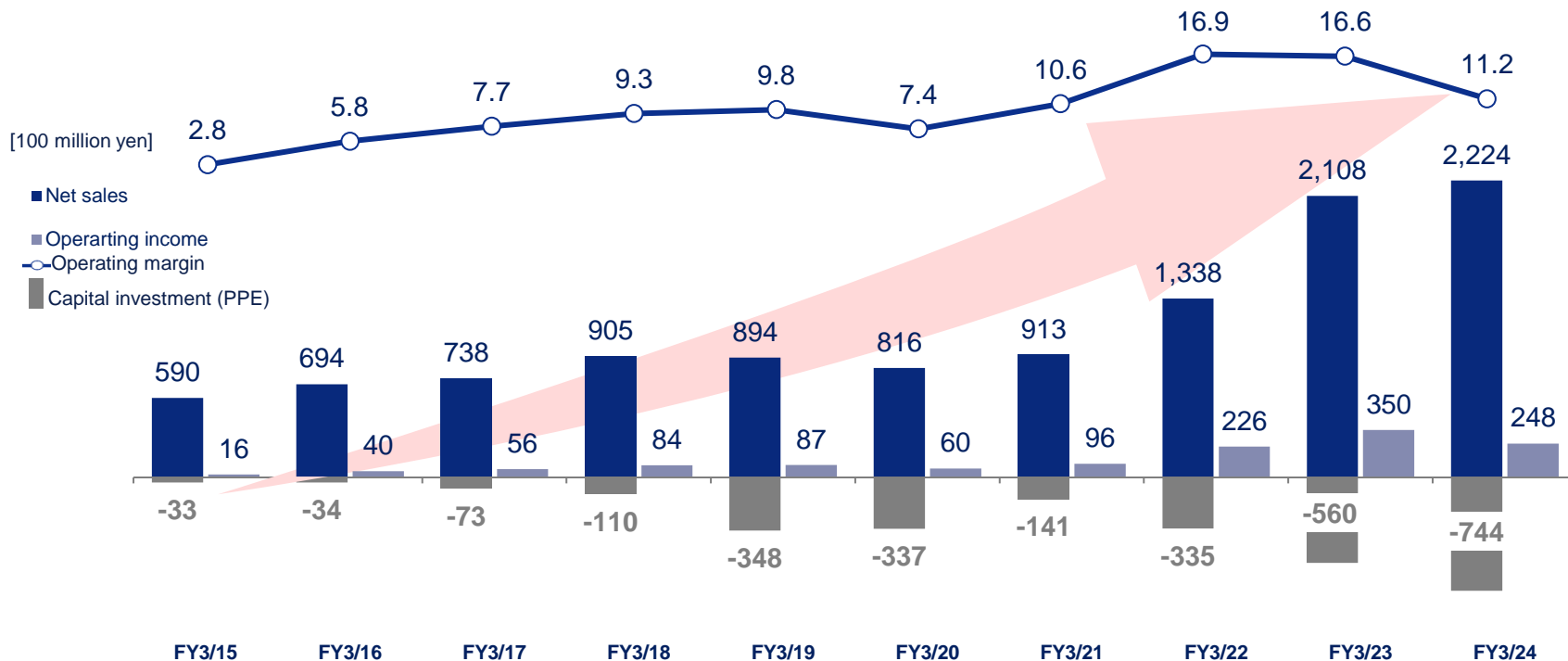


(1 billion US dollars)	2019	2020	2021	2022	2023	2024 (est.)	2025 (est.)	2026 (est.)
WFE market amount	55.5	64.9	92.3	102.0	95.5	102.0	112.0	137.0
Annual growth rate	-6.0%	+16.9%	+42.2%	+10.5%	-6.4%	+6.8%	+9.8%	+22.3%

\*Prepared by our company based on reference materials published by a certain securities firm

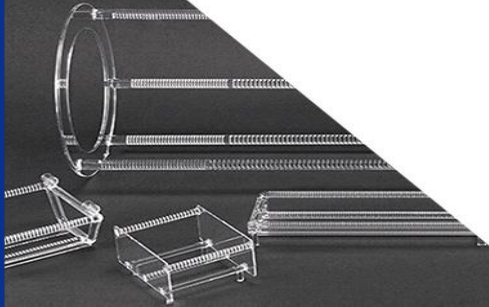
# Long-term Performance Trend

- Our sales and profit grew significantly during the period from FY3/21 to FY3/23, due to the active investment (in the enlargement of Changshan, Dongtai, and Tongling factories, etc.) and the enhancement of production capacity during the period from FY3/19 to FY3/21. → In about 3 years after investment, our efforts contributed to revenues.



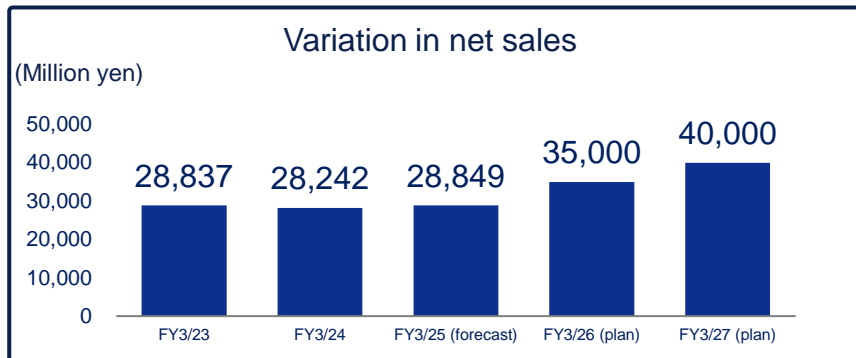


## Strategy for Each Priority Product





# Strategy for Each Product: Quartz



Manufacturing schedule

	FY2024	FY2025	FY2026
Malaysia Factory	<b>Start of operation</b>	<b>Operation</b>	<b>Full-scale operation</b>
Kumamoto Factory	-	<b>Start of operation</b>	<b>Operation</b>

To increase the total production capacity in Malaysia and Kumamoto by over 20.0 billion yen



## [Summary of 2023]

- The semiconductor market slowed down, but we strove to catch up by taking advantage of the growth of the Chinese market, so sales were flat.
- We established a new factory in Malaysia, and increased engineers for processing workpieces with fire.

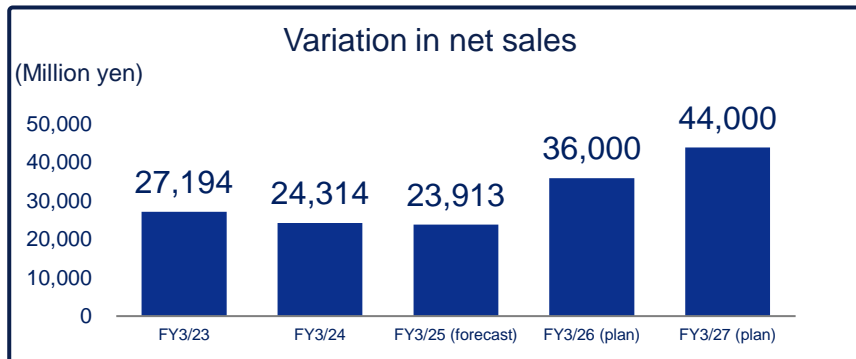
## [Outlook for medium-term performance]

- Considering the effect of consumption of inventory by users, we expect that full-scale recovery will start in 2025 or later.
- Our factory in Malaysia will meet the needs of European and U.S. clients for products manufactured outside China.

## [Investment in capacity]

- To increase production capacity to cope with the demand growth from 2025, and raise the capacity of processing workpieces with fire to cope with the growth of demand for machine processing. In 2024, we will incur the cost for investment in Malaysia.

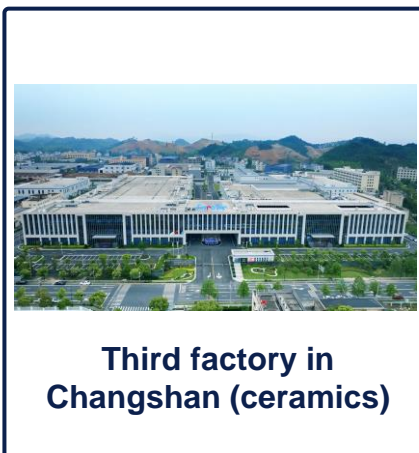
# Strategy for Each Product: Ceramics



Manufacturing schedule

	FY2024	FY2025	FY2026
Changshan Factory	Start of operation	Operation	Full-scale operation
Malaysia Factory	Start of operation	Operation	Full-scale operation
Ishikawa Factory (No. 3)	-	Start of operation	Operation

To increase the total production capacity in Changshan, Ishikawa and Malaysia by over 15.0 billion yen



## [Summary of 2023]

- Sales declined 11%, due to the slowdown of the semiconductor market, despite the expansion of the Chinese market.
- Active investment in the establishment of new factories in Changshan, Ishikawa, and Malaysia, and the increase of production capacity

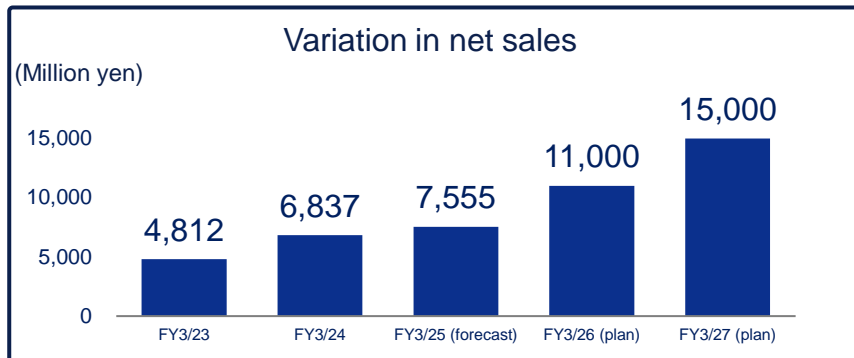
## [Outlook for medium-term performance]

- Considering the effect of consumption of inventory by users, we expect that full-scale recovery will start in 2025 or later.
- Our factories in Malaysia and Japan will meet the needs of European and U.S. clients for products manufactured outside China.

## [Investment in capacity]

- In 2024, we will incur the cost for investment in Malaysia, and increase production capacity by starting the operation of new factories.

# Strategy for Each Product: CVD-SiC



Manufacturing schedule

	FY2024	FY2025	FY2026
Changshan Factory	Start of operation	Operation	Full-scale operation

To increase the total production capacity in Changshan and Okayama by about 10.0 billion yen



## [Summary of 2023]

- Healthy demand despite the slowdown of the semiconductor market. An increase in production capacity of Okayama Factory led to 42% increase in sales.
- Start of operation of Changshan Factory in addition to the increase in production capacity of Okayama Factory

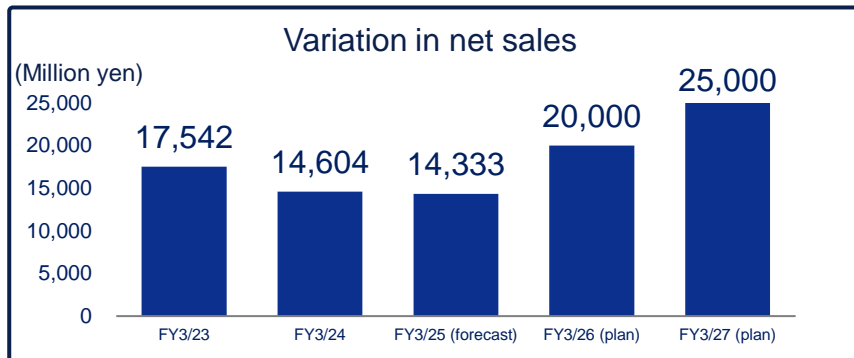
## [Outlook for medium-term performance]

- Demand for CVD-SiC from semiconductor-related clients is expected to keep growing.
- We will strive to increase sales by enhancing our production capacity.

## [Investment in capacity]

- We will boost the production capacities of Changshan Factory and Okayama Factory.

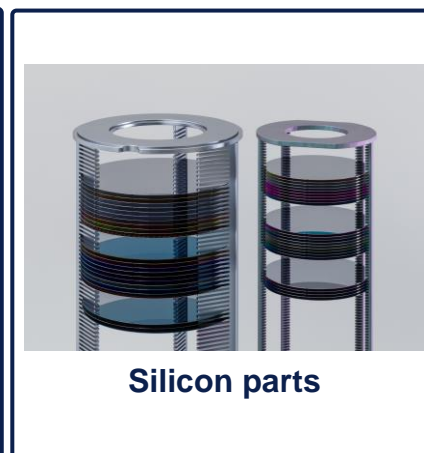
# Strategy for Each Product: Silicon Parts



Manufacturing schedule

	FY2024	FY2025	FY2026
Changshan Factory	Start of operation	Operation	Full-scale operation

To increase the total production capacity in Changshan and Yinchuan by about 10.0 billion yen



## [Summary of 2023]

- Drop in sales due to the downturn of the semiconductor market
- Considering the expected medium/long-term demand growth, we enlarged Changshan Factory to increase production capacity.

## [Outlook for medium-term performance]

- In 2024, it is assumed that sales will not increase due to inventory issues.
- From 2025, it is forecast that sales will increase thanks to the growth of demand and the rise in production capacity.

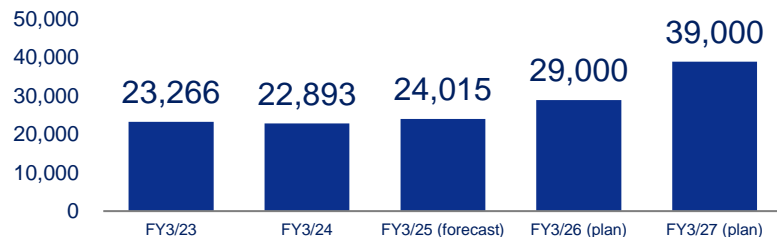
## [Investment in capacity]

- We plan to newly establish a factory in Changshan, upgrade Yinchuan Factory, and other measures, to increase production capacity.

# Strategy for Each Product: Thermo-electric Modules

Variation in net sales

(Million yen)

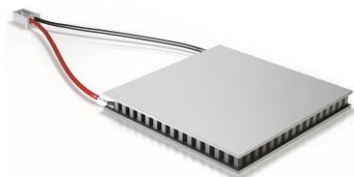


Automation and streamlining

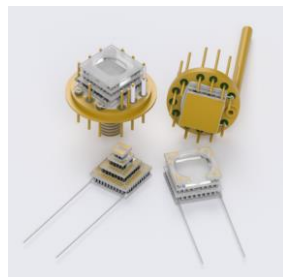


Automation, labor-saving, and streamlining

- Installation of automated assembly equipment
- Use of AI in inspection, and automation of inspection
- Adoption of automatic guided vehicles (AGVs)
- Adoption of automated warehouses



Standard module



Micromodule for optical communication

## [Summary of 2023]

- Peaking out of sales of products for bio devices for PCR, etc. and the correction phase of products for 5G communication devices
- Increase in sales of products for optical transceivers related to generative AI

## [Outlook for medium-term performance]

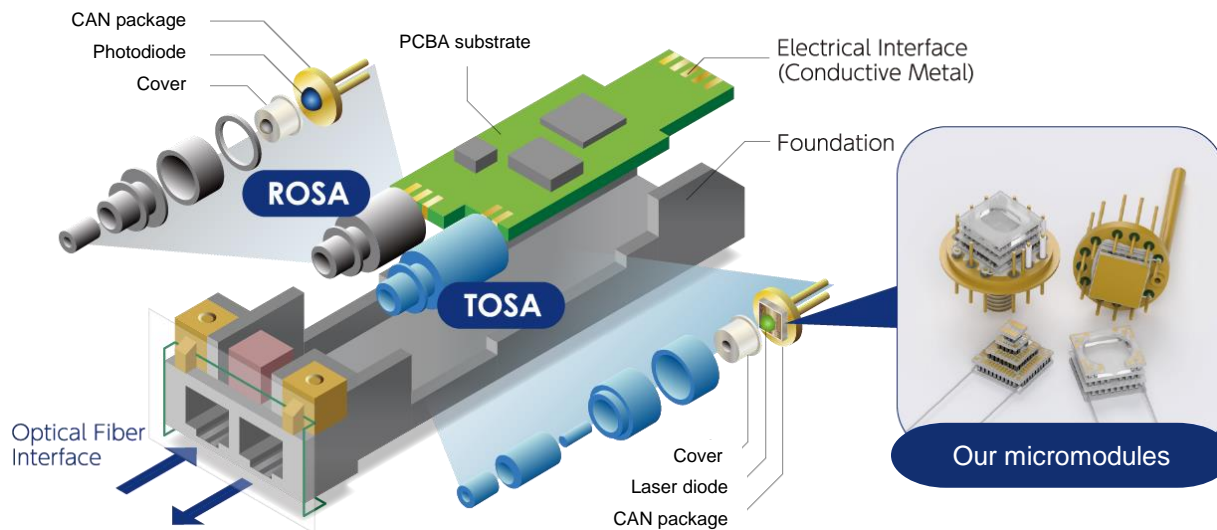
- Recovery and upward trends of products for 5G communication devices, and continuous growth of sales of products related to generative AI
- In China, the investment in and demand for 5G-A (5.5G) are expected to grow. We aim to enrich the lineup of chillers and promote sales.

## [Investment in capacity]

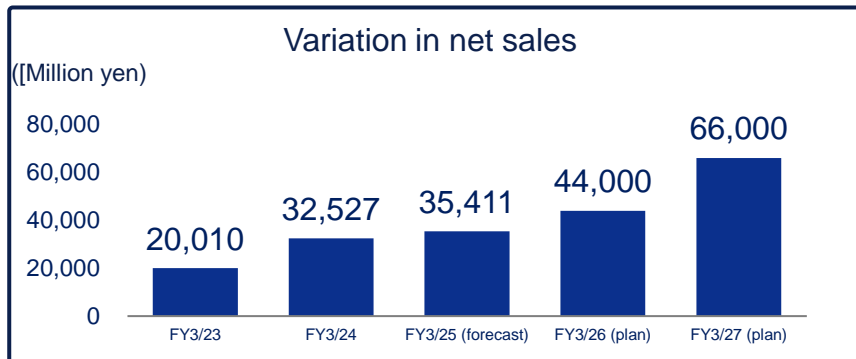
- Improvement in production efficiency through the automation of production lines
- Planning to manufacture products outside China

- Growth of the needs for heavy-data transmission due to the increase of data traffic between servers  
⇒Expansion of demand for large-capacity optical transceivers for 5G communication devices ⇒Favorable effects on thermo-electric modules (For large-capacity types [from 800 GB], we supply products to large clients.)
- The growth of demand for graphics processing units (GPUs) produced favorable effects on our business related to semiconductor manufacturing equipment.

## Basic structure of an optical transceiver



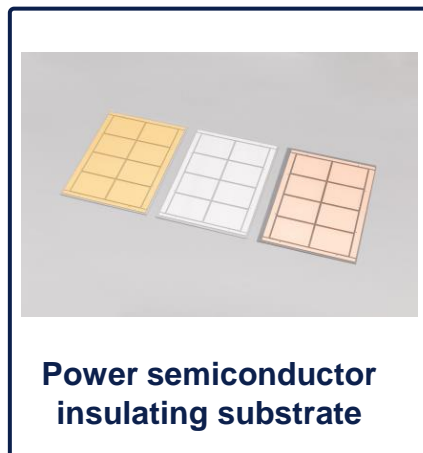
# Strategy for Each Product: Power Semiconductors



Manufacturing schedule

	FY2024	FY2025	FY2026
Sichuan Factory	Operation	Full-scale operation	⇒
Malaysia Factory	Start of operation	Operation	Full-scale operation

To increase the total production capacity in Neijiang and Malaysia by about 40.0 billion yen



## [Summary of 2023]

- Despite the correction phase in the second half of the year, a trend in demand expansion and the enhanced capacity of Dongtai Factory led to a 62% increase in sales, and our position improved to a globally top ranking company.
- Establishment of new factories in Sichuan and Malaysia, and active investment in the enhancement of production capacity

## [Outlook for medium-term performance]

- The demand for power semiconductor substrates is expected to keep growing.
- Enrichment of the lineup of DCB, AMB, and DPC substrates

## [Investment in capacity]

- Operation of new factories in Sichuan and Malaysia
- Automation progressed and production efficiency improved.



## Start of operation of a factory for manufacturing the components of semiconductor manufacturing equipment and offering-related services in Kulim, Malaysia

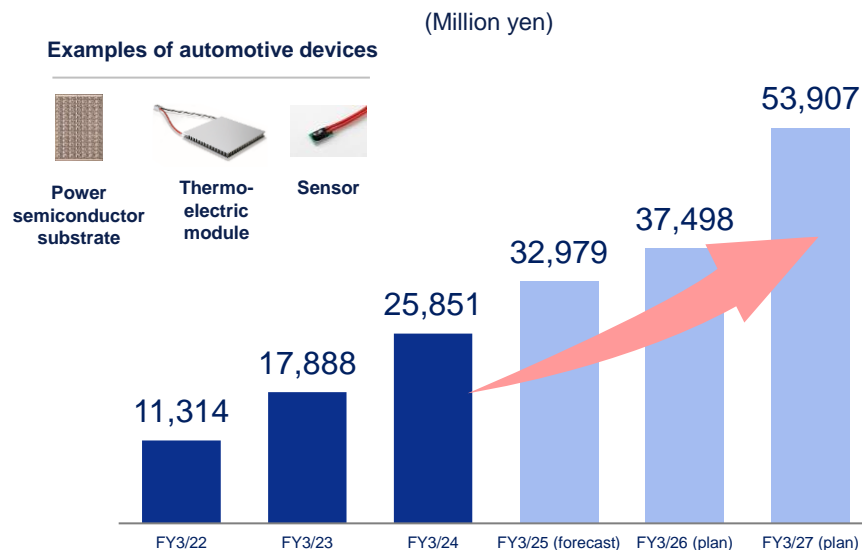
- Start of operation in January 2024. We are obtaining product certifications from major clients, and preparing for mass production to be started in the second half of the year.





- We aim to strategically expand the sales of automotive devices, such as power semiconductor substrates and thermo-electric modules, in order to take advantage of the medium/long-term growth of the next-generation automobile market.

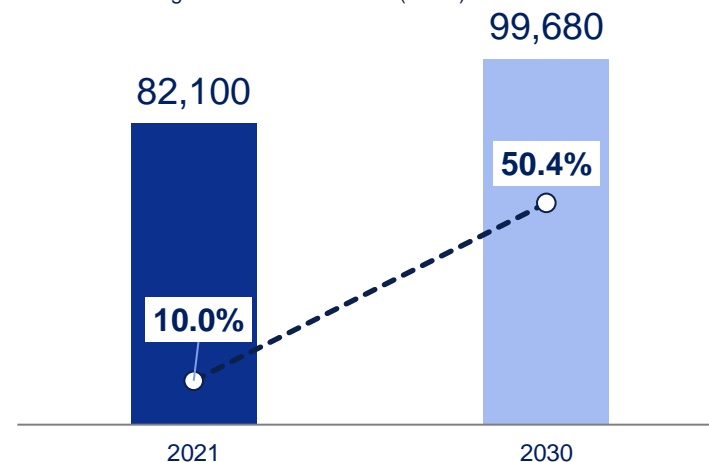
## Sales of our automotive devices



## Global automobile sales (next-generation automotive) forecast

■ Sales volume of new vehicles [unit: thousand vehicles]

●-○-● Ratio of next-generation automobiles (XEVs)



\*The sales of automotive devices mean the sales of automotive devices in the electronic device business.

\*The data on global automobile sales were produced by our company with reference to the report of Yano Research Institute.

We promoted “digitalization, automation, and visualization” of production sites.

- Various systems, including ERP and MES, have been installed in production bases in China, thereby visualizing and streamlining production processes, and improving quality (utilization of AI and adoption of robots).  
⇒ To enhance the competitiveness and advantages of factories through automation, labor-saving, and streamlining  
To enhance the investment in automation also in the new bases in Japan and Malaysia and proceed with cross-sectoral promotion



**Automatic conveyance  
system**



**Automatic warehouse  
system**



**Automatic inspection  
equipment**

To promote the DX of manufacturing processes to improve  
productivity and quality

- In order to realize business growth, we will actively recruit skilled personnel, enrich our training system, and so on, while positioning the emphasis on personnel as an important management policy.
- We will enliven communication beyond business and regional boundaries, share our corporate culture, and expand the network for cooperation.



**We are actively recruiting skilled personnel in China, too, and will engage in the development of products in the Chinese headquarters in Shanghai and research institutes for respective businesses.**

We are expanding production capacity by gradually building new factories and adding floor space toward growth from 2024 onward. The following are our main plans at present.

Business	Location	2023	2024	2025	2026	2027	2028	Assumed production capacity (100 million yen)
Power semiconductor substrates	Dongtai and Neijiang, China	<div><div>Start of operation</div><div>Small-lot production</div><div>Full-scale operation</div></div>						680
Power semiconductor substrates	Malaysia	<div><div>Start of operation</div><div>Small-lot production</div><div>Full-scale operation</div></div>						150
Ceramics	Ishikawa, Japan	<div><div>Start of operation</div><div>Small-lot production</div><div>Full-scale operation</div></div>						140
Ceramics Silicon parts	Changshan, China	<div><div>Start of operation</div><div>Small-lot production</div><div>Full-scale operation</div></div>						150
Quartz crucibles	Yinchuan, China	<div><div>Start of operation</div><div>Small-lot production</div><div>Full-scale operation</div></div>						340
Metal processing, quartz, ceramics	Malaysia	<div><div>Start of operation</div><div>Small-lot production</div><div>Full-scale operation</div></div>						250
Material, parts cleaning	Kumamoto, Japan	<div><div>Start of operation</div><div>Small-lot production</div><div>Full-scale operation</div></div>						70

# Situation of Application for Listing of Chinese Subsidiaries

- The businesses for manufacturing quartz crucibles, silicon parts, and silicon wafers are under review for listing.

Business	Parts cleaning		Quartz crucibles and silicon parts		Power semiconductor substrates		Silicon wafer (equity method)	
Company name	Ferrotec (Anhui) Technology Development Co., Ltd.		Ningxia Danyuan Juxin Semiconductor Technology Corporation		Jiangsu Ferrotec Semiconductor Technology Co., Ltd.		Hangzhou Semiconductor Wafer Co., Ltd.	
Abbreviation	FTSVA		FTNC		FLH (formerly, FTSJ)		CCMC	
Current investment ratio	50.23%*		60.13%		55.10%		23.05%	
Stock market	ChiNext, Shenzhen		Main-Board, Shenzhen		STAR Market, Shanghai		STAR Market, Shanghai	
Listing advisor	Everbright Securities		Orient Securities Investment Banking		Huatai Securities		Haitong Securities	
Most recent valuation**	152.7 billion yen (Market capitalization on May 28)		115.5 billion yen		160.4 billion yen		314.5 billion yen	
Percentage of new shares to be issued	25%		25%		Over 10%		Over 10%	
Progress and schedule	Listing advisor registration	Listed on December 30, 2022		Nov. 4, 2021		-		Oct. 20, 2021
	Application			Jun. 30, 2023		TBD		Aug. 30, 2022
	Passing the screening		May 6, 2022	-	-	-		
	Official approval		Nov. 16, 2022	-	-	-		
	Date of listing (target)		Dec. 30, 2022	Latter half of 2024 (target)	TBD	Latter half of 2024 (target)		

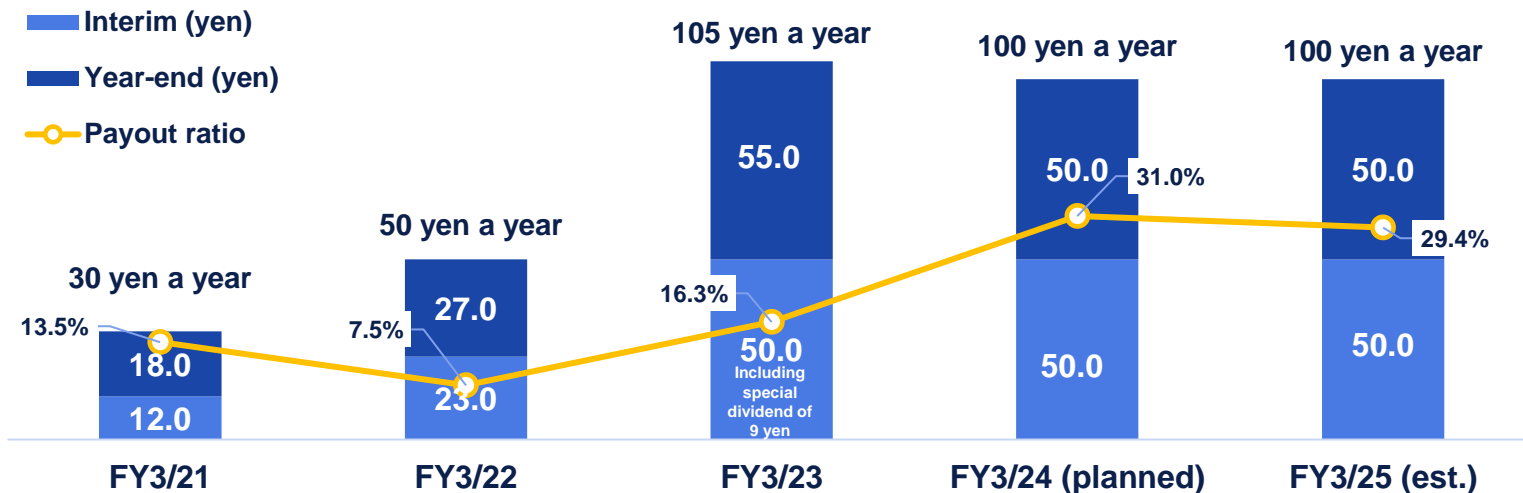
\*Investment ratio of FTSVA is based on figures after listing.

\*\*Except for FTSVA, values are calculated based on the share price at the time of the third-party allotment since 2021. 1 yuan = 20.83 yen (TTM as of Mar. 29, 2024)

## [New dividend policy]

We will determine the dividend amount while emphasizing the increase of shareholder return and taking into account financial affairs and investment opportunities, but will strive to enrich shareholder return with the aim of achieving a payout ratio of 20 to 30%.

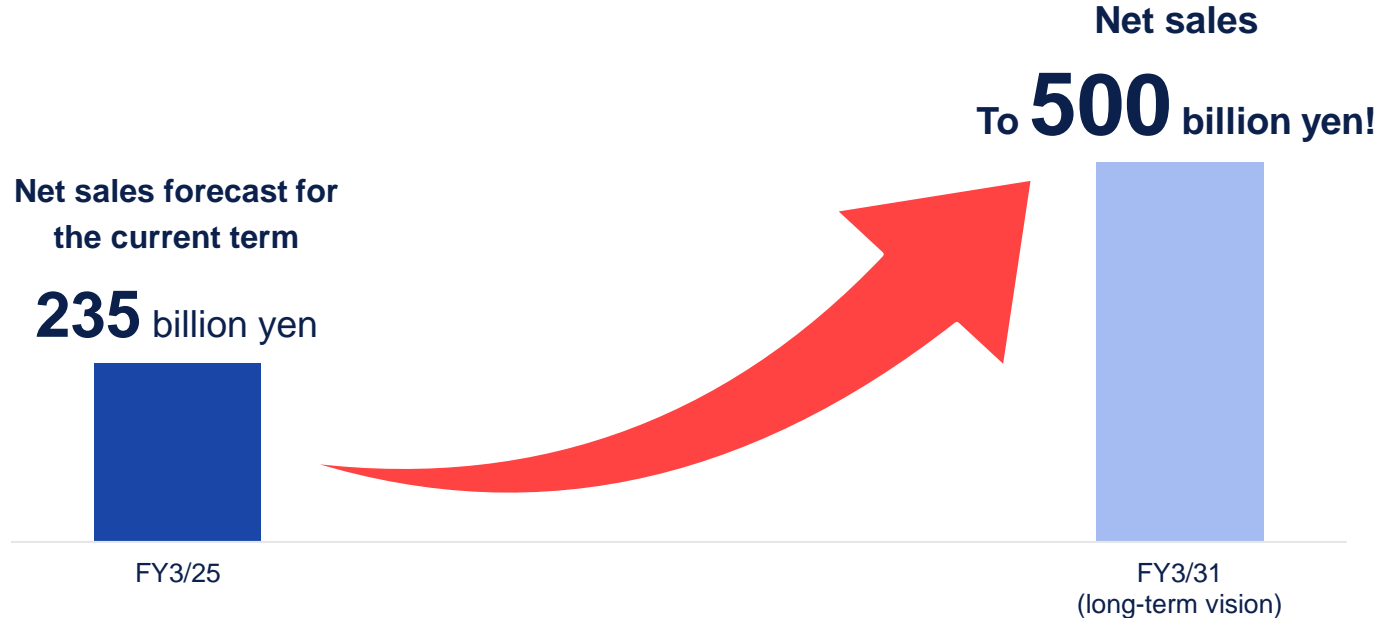
### Variation of dividend per share



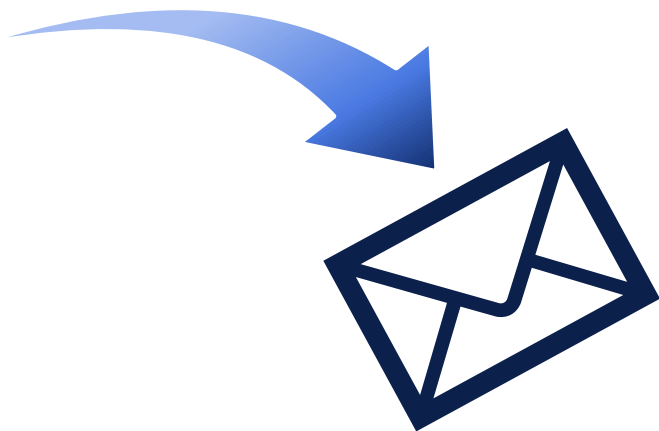
Long-term goals are net sales of 500 billion yen and net income of 50 billion yen.

We aim to achieve the long-term goals, while improving cash flows, ROE, and ROIC.

Net sales of **500** billion yen and net income of **50** billion yen in **FY2030**



Our IR news is posted on the web portal "IRSTREET" in Japanese and English, and delivered by e-mail.  
Please check the link below.



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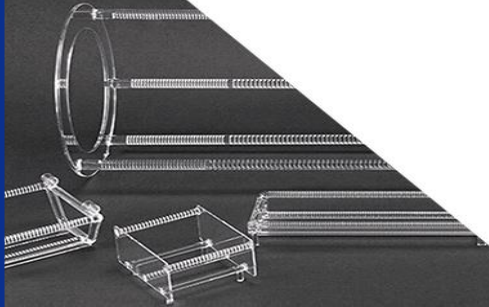
■ Sign up in English

[https://ircms.irstreet.com/member\\_registration/new\\_u.php?site=2&language=2&brand\\_selection=0&regist\\_brand\\_select\[\]=85](https://ircms.irstreet.com/member_registration/new_u.php?site=2&language=2&brand_selection=0&regist_brand_select[]=85)

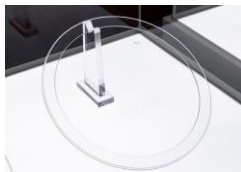




## Appendix



## Jigs and consumables for semiconductor manufacturing equipment (our mainstay material products)



Quartz



Silicon parts



Ceramics



CVD-SiC

Our strengths: Not only capital investment-linked products (vacuum feedthroughs), but also a lineup of **repeat consumables (materials)** and services (cleaning and wafer recycling) **linked to the production and operation of semiconductor device manufacturers**



**Vacuum feedthroughs**

\*Semiconductor and FPD production equipment parts (Market share: 65% (largest))



**Metal precision machining**

\*Growth forecast due to increase in future customers (factories) in China



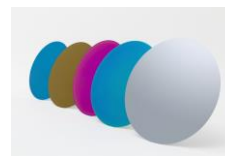
**Equipment parts cleaning**

\*Focus on the Chinese market



**Quartz crucibles**

\*For semiconductors, solar cells, and Photovoltaic



**Wafer recycling**

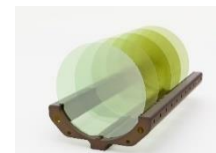
\*Focus on the Chinese market (New business launched in FY3/22)

## Businesses at equity-method affiliates



**Silicon wafers**

\*Monthly production capacity: 6-inch: 420 thousand, 8-inch: 450 thousand, 12-inch: 250 thousand

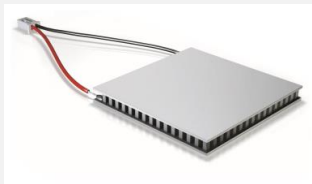


**SiC wafers**

\*Development and mass-production (New business launched in FY3/22)

# Line-up of Our Electronic Device-related Products

## Thermo-electric modules



\*As temperature adjustment devices, thermo-electric modules are increasingly used in the fields of automobiles, semiconductor manufacturing equipment, communications, medical biotechnology, consumer products, etc.  
(Market share: 36% (largest))



### Chiller

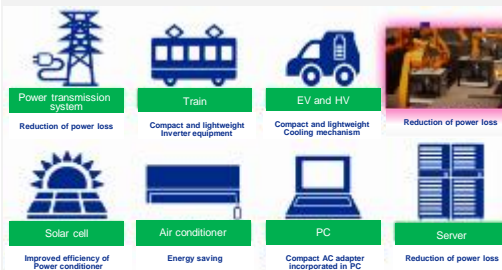
A chiller (constant-temperature water circulation equipment) is equipment for circulating liquid, such as water, while cooling or heating it to keep a predetermined temperature. It is used for keeping the temperature of objects, such as heat sources of facilities and equipment, constant.

## Insulating substrates for power semiconductors



\*In response to **the global trend of power consumption reduction**, the demand from clients needing power semiconductors is growing. (DIRECT COPPER BONDING technology for bonding a copper circuit to an alumina ceramics substrate)

## Application of power semiconductors



## Ferrofluid



\*Used in a wider range of fields, including automobile speakers, high quality sound TV speakers, and smartphone vibration  
(Market share: 80% (largest))

## Temperature sensors (thermistors) \*Ohizumi Mfg.



\*Thermistors are semiconductor ceramics that change resistance significantly according to temperature changes. They are broadly used as temperature sensors for automotive devices, home appliances, optical communications, etc. The demand for them is growing thanks to the electrification of vehicles and digitalization.

# Sales by Product for FY3/24 (First and Second Half)

(Million yen)	FY3/23 Results			FY3/24 Results					
	Full-year	1 <sup>st</sup> half	2 <sup>nd</sup> half	Full-year	YoY	1 <sup>st</sup> half	YoY	2 <sup>nd</sup> half	YoY
Semiconductor and other equipment-related	132,194	63,791	68,403	130,072	-1.6%	60,257	-5.5%	69,815	2.1%
Vacuum feedthroughs	27,976	12,833	15,142	25,242	-9.8%	11,730	-8.6%	13,512	-10.8%
Quartz	28,837	13,983	14,854	28,242	-2.1%	11,584	-17.2%	16,658	12.1%
Silicon parts	17,542	9,325	8,217	14,604	-16.7%	7,712	-17.3%	6,892	-16.1%
Ceramics	27,194	13,030	14,164	24,314	-10.6%	11,657	-10.5%	12,657	-10.6%
CVD-SiC	4,812	1,962	2,850	6,836	42.1%	2,999	52.9%	3,837	34.6%
EB-Gun, LED	8,036	3,907	4,129	5,935	-26.1%	3,011	-22.9%	2,924	-29.2%
Wafer processing (out of scope of consolidation)	236	85	151	129	-45.3%	43	-49.4%	86	-43.0%
Wafer recycling	1,501	652	849	1,780	18.6%	753	15.5%	1,027	21.0%
Equipment parts cleaning	12,170	5,939	6,231	11,719	-3.7%	5,424	-8.7%	6,295	1.0%
Quartz crucibles	3,891	2,075	1,816	11,268	189.6%	5,341	157.4%	5,927	226.4%
Electronic device	53,024	23,073	29,952	67,600	27.5%	32,840	42.3%	34,760	16.1%
Thermo-electric modules	23,266	11,546	11,721	22,893	-1.6%	10,640	-7.8%	12,253	4.5%
Power semiconductor substrates	20,011	7,919	12,092	32,527	62.5%	16,103	103.3%	16,424	35.8%
Ferrofluid, others	936	485	451	922	-1.5%	398	-17.9%	524	16.1%
Sensor	8,811	3,123	5,688	11,255	27.7%	5,697	82.4%	5,558	-2.3%
Others	25,590	10,640	14,950	24,757	-3.3%	12,396	16.5%	12,361	-17.3%
Total	210,810	97,505	113,305	222,430	5.5%	105,494	8.2%	116,936	3.2%

\*Figures are partially rounded.

# Business Forecasts of Each Segment/Product for FY3/25 (First and Second Half)

(Million yen)	FY3/24 Results			FY3/25 Forecast					
	Full-year	1 <sup>st</sup> half	2 <sup>nd</sup> half	Full-year	YoY	1 <sup>st</sup> half	YoY	2 <sup>nd</sup> half	YoY
Semiconductor and other equipment-related	<b>130,072</b>	60,257	69,815	<b>138,185</b>	6.2%	64,671	7.3%	73,514	5.3%
Vacuum feedthroughs	<b>25,242</b>	11,730	13,512	<b>29,178</b>	15.6%	13,656	16.4%	15,522	14.9%
Quartz	<b>28,242</b>	11,584	16,658	<b>28,849</b>	2.1%	13,501	16.5%	15,348	-7.9%
Silicon parts	<b>14,604</b>	7,712	6,892	<b>14,333</b>	-1.9%	6,708	-13.0%	7,625	10.6%
Ceramics	<b>24,314</b>	11,657	12,657	<b>23,913</b>	-1.6%	11,191	-4.0%	12,722	0.5%
CVD-SiC	<b>6,836</b>	2,999	3,837	<b>7,555</b>	10.5%	3,536	17.9%	4,019	4.8%
EB-Gun, LED	<b>5,935</b>	3,011	2,924	<b>5,720</b>	-3.6%	2,677	-11.1%	3,043	4.1%
Wafer processing (out of scope of consolidation)	<b>129</b>	43	86	<b>99</b>	-23.3%	46	7.0%	53	-38.4%
Wafer recycling	<b>1,780</b>	753	1,027	<b>3,756</b>	111.0%	1,758	133.5%	1,998	94.5%
Equipment parts cleaning	<b>11,719</b>	5,424	6,295	<b>12,508</b>	6.7%	5,854	7.9%	6,654	5.7%
Quartz crucibles	<b>11,268</b>	5,341	5,927	<b>12,274</b>	8.9%	5,744	7.5%	6,530	10.2%
Electronic device	<b>67,600</b>	32,840	34,760	<b>72,393</b>	7.1%	33,880	3.2%	38,513	10.8%
Thermo-electric modules	<b>22,893</b>	10,640	12,253	<b>24,015</b>	4.9%	11,239	5.6%	12,776	4.3%
power semiconductor substrates	<b>32,527</b>	16,103	16,424	<b>35,411</b>	8.9%	16,573	2.9%	18,838	14.7%
Ferrofluid, others	<b>922</b>	398.4	523.6	<b>1,188</b>	28.9%	556	39.6%	632	20.7%
Sensor	<b>11,255</b>	5,697	5,558	<b>11,779</b>	4.7%	5,512	-3.3%	6,267	12.8%
Others	<b>24,757</b>	12,396	12,361	<b>24,422</b>	-1.4%	11,449	-7.6%	12,973	5.0%
Total	<b>222,430</b>	105,494	116,936	<b>235,000</b>	5.7%	110,000	4.3%	125,000	6.9%

\*Figures are partially rounded.

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- The forward-looking statements in this document are based on information available as of the date of publication of this document and assumptions concerning uncertain factors affecting future results.
- Actual results may differ materially from these forecasts due to various factors. Such factors include, but are not limited to, international conditions, economic conditions, product supply and demand trends, raw material prices, market conditions, and exchange rates.
- Quantitative targets and capital investments in these materials represent medium-to long-term strategies and visions, and are not performance forecasts. We undertake no obligation to update any information with respect to these matters.
- For official forecasts, please refer to the disclosure of financial results based on the Tokyo Stock Exchange Regulations.

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