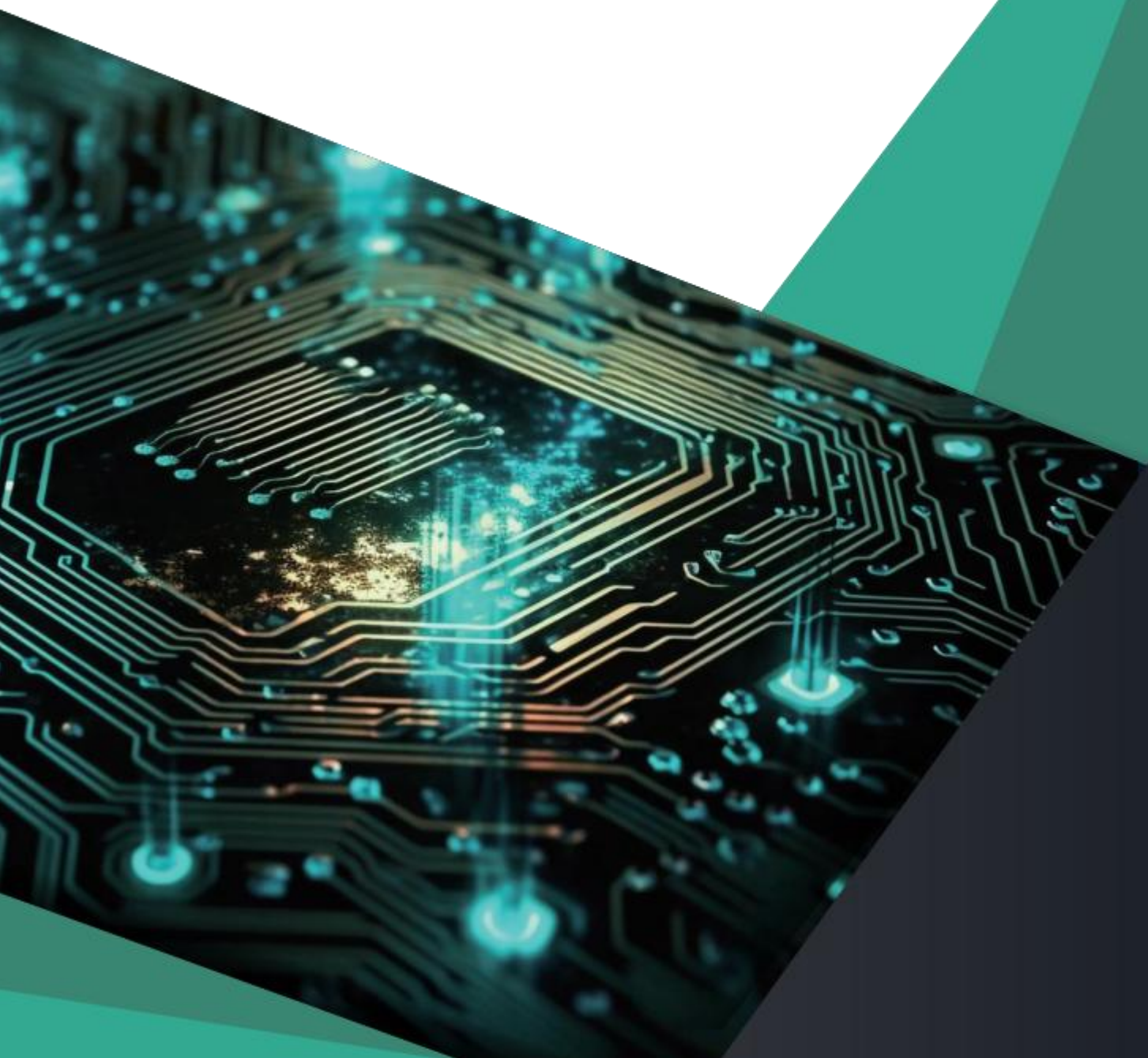
BRIOCEAN

Monthly Market Matters Report

May 2024



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Executive Summary

This report provides an overview of the semiconductor industry in May 2024 and attempts to identify essential market trends over the next month. Based on the relevant data available, the report analyses macro factors, supply chains, applications, and product market trends.

In May, global economy continues to recover, but China's manufacturing industry has observed weakened demand and supply side.

This month, the United States and Japan both proposed policies to tighten their restriction on cutting-edge products and technologies, so as to strengthen their domestic supply chain. However, China has also officially established the third tranche of "Big Fund", in order to support semiconductor industry.

In response to the wave of AI, many chipmakers change their production of DRAM into that of HBM, which may cause DRAM to be in short supply when peak season comes. Nevertheless, Nvidia has slashed the price of its AI chip H20, as facing pressure from U.S. sanctions and Huawei's competition. Several tech giants have accelerated to build data centre all over the world, signaling that demand growth of AI chips will continue to be high.

1. Macro Environment Overview

1.1 Global Economy Continues to Recover, while China's Manufacturing Supply Demand have Weakened

In May 2024, according to JP Morgan, the global manufacturing PMI was 50.9, and the overall economy continued to recover.

In Asia, China's manufacturing PMI was 49.5, down 0.9pct from the previous month. Both supply and demand sides weakened. The production index fell by 2.1pct from the previous month to 50.8 (especially the reduction in production activities during the May Day holiday), and the new orders index fell by 1.5pct from the previous month to 49.6 (Domestic demand has not yet recovered). High-tech manufacturing PMI was 50.7, down 2.3pct month-on-month, but still maintained in the expansion range.

The manufacturing PMIs of Japan and South Korea have both returned to the expansion range. Among them, Japan has returned to above the boom-bust line since May 23, and the manufacturing industry has recovered; South Korea has rebounded sharply to 51.6, mainly due to large growth in production and new orders. India's manufacturing PMI has declined, but still maintains in the expansion range. Among them, the growth rate of production and new orders has slowed down, mainly due to the reduction of working hours caused by extreme hot weather and elections; the growth rate of new export orders has accelerated significantly, reaching the highest level in 13 years, mainly due to the rapid growth of external demand. Vietnam's performance was lackluster.

In the Americas, the U.S. ISM manufacturing PMI fell back to 48.7, lower than market expectations. Among them, the ISM new orders index fell 3.7pct month-on-month to 45.4, and the overall economic demand in the United States gradually weakened; the ISM output index also fell 1.1pct month-on-month to 50.2. Mexico's manufacturing PMI was 51.2, continuing its expansion trend.

In Europe, the Eurozone manufacturing PMI rebounded to 47.3, a 14-month high, and the contraction of the manufacturing industry slowed down. Among them, Germany still performed the worst (45.4).

Manufacturing PMIs

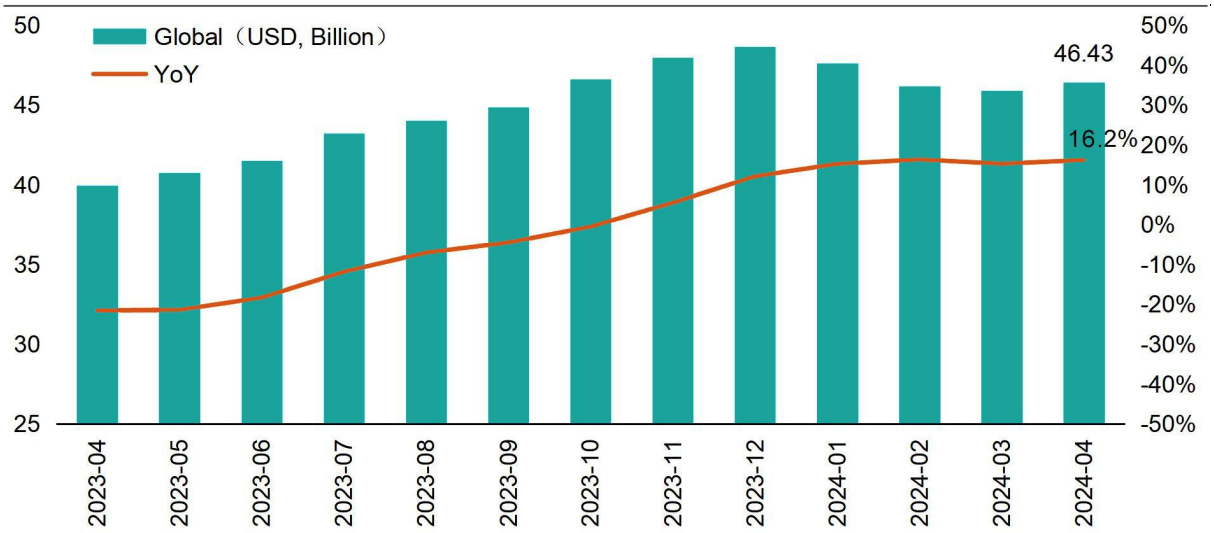
Timeline	Global	China	Japan	South Korea	India	Vietnam	The United States	Mexico	Euro Area
2023-05	49.60	48.80	50.60	48.40	58.70	45.30	46.90	50.50	44.80
2023-06	48.80	49.00	49.80	47.80	57.80	46.20	46.00	50.90	43.40
2023-07	48.70	49.30	49.60	49.40	57.70	48.70	46.40	53.20	42.70
2023-08	49.00	49.70	49.60	48.90	58.60	50.50	47.60	51.20	43.50
2023-09	49.10	50.20	48.50	49.90	57.50	49.70	49.00	49.80	43.40
2023-10	48.80	49.50	48.70	49.80	55.50	49.60	46.70	52.10	43.10
2023-11	49.30	49.40	48.30	50.00	56.00	47.30	46.70	52.50	44.20
2023-12	49.00	49.00	47.90	49.90	54.90	48.90	47.40	52.00	44.40
2024-01	50.00	49.20	48.00	51.20	56.50	50.30	49.10	50.20	46.60
2024-02	50.30	49.10	47.20	50.70	56.90	50.40	47.80	52.30	46.50
2024-03	50.60	50.80	48.20	49.80	59.10	49.90	50.30	52.20	46.10
2024-04	50.30	50.40	49.60	49.40	58.80	50.30	49.20	51.00	45.70
2024-05	50.90	49.50	50.40	51.60	57.50	50.30	48.70	51.20	47.30

Data Source: FastBull

1.2 Global Semiconductor Market Showed a Recovery Trend

In April 2024, global semiconductor market showed a recovery trend, reaching USD 46.43 billion, a monthly increase of 1.1%. From January to April 2024, global semiconductor sales reached a cumulative USD 186.14 billion, a cumulative yearly increase of 15.8%.

Global Semiconductor Sales (USD, Billion)



Data Source: SIA

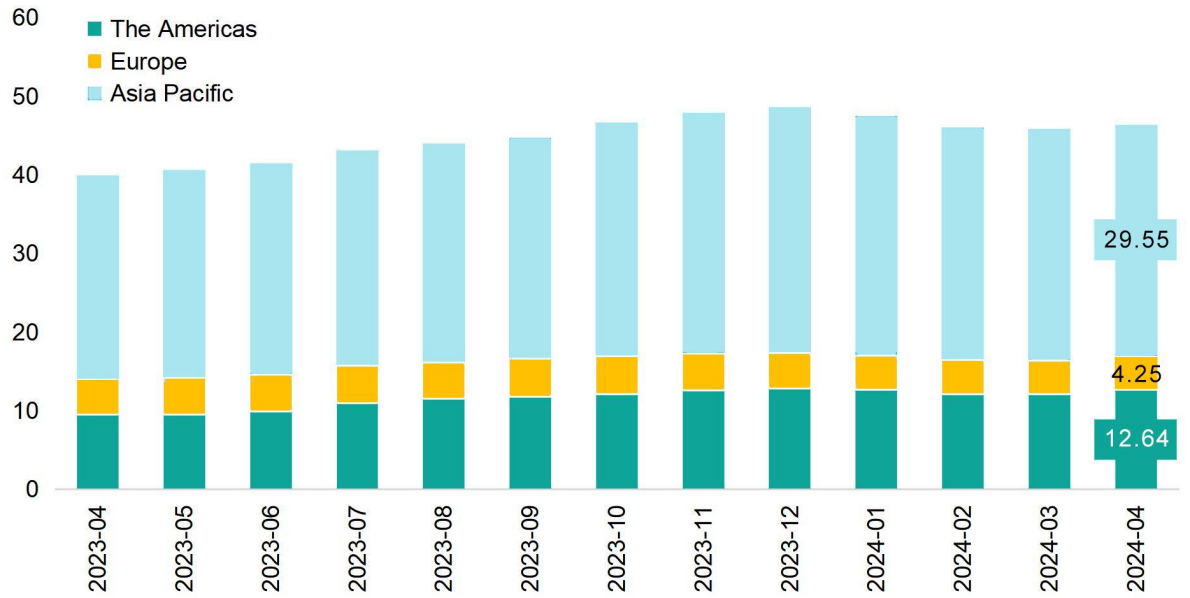
In Asia-Pacific region, sales in April were USD 29.55 billion, with monthly growth returning to positive levels (+0.2%); cumulative sales from January to April were USD 119.32 billion (cumulative year-on-year +15.7%). Among them, sales in China reached USD 14.17 billion in April, almost the same as last month.

Demand in Japan has picked up. Sales in April were USD 3.59 billion, with a narrowed yearly decline of 7.8% and a monthly growth of 2.4%.

In the Americas, demand growth performed brilliantly, with a yearly increase of 32.4% and a monthly growth of 4.2%. The Americas market becomes the main driving force for the recovery of global demand in April.

In Europe, the market continued to be sluggish, with sales declining significantly year-on-year (-7.0%) and slightly declining month-on-month.

Semiconductor Sales by Regions (USD, Billion)



Data Source: SIA

1.3 Mainly Driven by Americas & Asia Pacific Market, Global Semiconductor Market Will Impressively Grow by 16%

Recently, WSTS has raised its forecast for the global semiconductor market size in 2024. Global semiconductor sales in 2024 are expected to reach USD 611.2 billion, a yearly increase of 16.0%. Sales in the Americas are expected to reach USD 168.1 billion, a substantial yearly increase of 25.1% and market share of 27.5%. Sales in the Asia-Pacific region (including China and Japan) are expected to reach USD 387.1 billion, a year-on-year growth of 15.0%; sales in Europe are expected to be USD 56 billion, with demand growth slowing down (+0.5% year-on-year), and global market share declining to 9.2%.

Semiconductor Market Size Forecast by Regions (USD, Billion)

Semiconductor Market Size (USD, Billion)	2023A	2024E	2025E
Americas	134.4	168.1	192.9
YoY	-4.8%	25.1%	14.8%
Share%	25.5%	27.5%	28.1%
Europe	55.8	56.0	60.9
YoY	3.5%	0.5%	8.7%
Share%	10.6%	9.2%	8.9%
Asia Pacific (including China and Japan)	336.7	387.1	433.5
YoY	-11.2%	15.0%	12.0%
Share%	63.9%	63.3%	63.1%
Total World	526.9	611.2	687.4
YoY	-8.2%	16.0%	12.5%

Data Source: WSTS

From a product perspective, memory chips will observe the highest demand growth in 2024, with a yearly growth rate of 76.8%, followed by logic chips, with a yearly growth rate of 10.7%. It is expected that the AI boom will continue to drive high-end memory products and logic chips to grow significantly in volume. Attention should be paid to AI-related market opportunities.

Semiconductor Market Size Forecast by Products (USD, Billion)

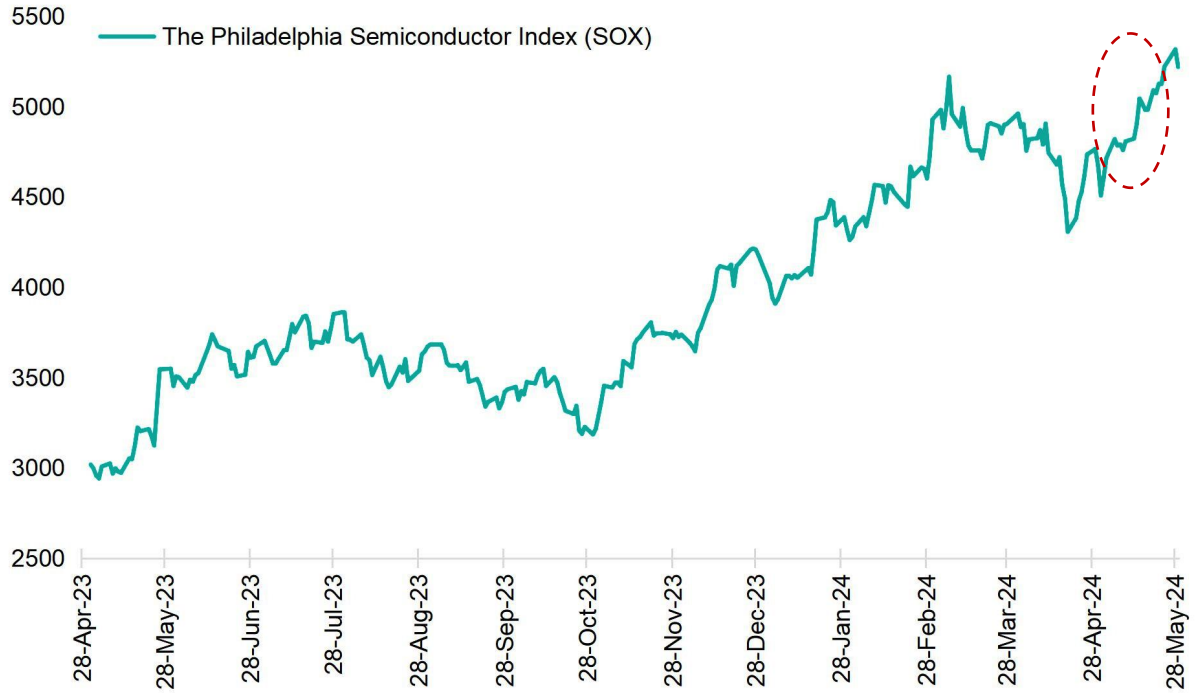
Semiconductor Market Size (USD, Billion)	2023A	2024E	2025E
Discrete Semiconductors	35.5	32.8	35.3
YoY	4.5%	-7.8%	7.7%
Optoelectronics	43.2	42.7	44.2
YoY	-1.6%	-1.0%	3.5%
Sensors	19.7	18.3	19.4
YoY	-9.4%	-7.4%	6.3%
Integrated Circuits	428.4	517.5	588.4
YoY	-9.7%	20.8%	13.7%
Analog	81.2	79.1	84.3
YoY	-8.7%	-2.7%	6.7%
Micro	76.3	77.6	81.6
YoY	-3.5%	1.6%	5.2%
Logic	178.6	197.7	218.2
YoY	1.1%	10.7%	10.4%
Memory	92.3	163.2	204.3
YoY	-28.9%	76.8%	25.2%
Total Products	526.9	611.2	687.4

Data Source: WSTS

1.4 Semiconductor Stock Market Soared to a New High

Catalysed by the AI concept and Nvidia's latest performance exceeding expectations, the Philadelphia Semiconductor Index continued to soar and reached a new high.

The Philadelphia Stock Exchange Semiconductor Index



Data Source: MacroMicro

1.5 The United States Has Imposed Additional Tariffs on Chinese EVs, Semiconductors and Other Products, which will Affect the Export of Chinese Local Products

The United States announced on May 14 that it would impose 100% punitive tariffs on Chinese pure electric vehicles (EVs), which is equivalent to four times the current level. It will also increase tariffs on imported products totalling USD 18 billion, including semiconductors, photovoltaic panels, steel and aluminium.

Product	Current	After	Timeline
EV	25%	100%	2024
EV Battery	7.5%	25%	
Steel & Aluminum	0%-7.5%	25%	
Photovoltaic Panel	25%	50%	
Semiconductor	25%	50%	2025
Graphite & Permanent Magnets	0%	25%	2026

1.6 The Proportion of Domestic Chip Procurement by Chinese Local Automakers will Reach 20% in 2025, which is Expected to Reshuffle Local Auto Supply Chain

According to the Financial Times, China is seeking to strengthen semiconductor supply chain, requiring top domestic automakers to increase the local procurement ratio of chips to 25% by 2025, including SAIC, BYD, Dongfeng Motor,

GAC and FAW Group. The ultimate goal is to raise this procurement ratio to a level far above original target.

1.7 HBM is Expected to be Key Investment Target of the Third Tranche of the Big Fund

The third tranche of the state-owned National Integrated Circuit Industry Investment Fund, commonly known as the "Big Fund", was registered on May 24 with a registered capital of RMB 344 billion. The "Big Fund" counts China's Ministry of Finance as its largest investor and has attracted funding from the country's biggest state-owned banks and investment vehicles linked to local governments such as Shanghai, Beijing and Shenzhen. In addition to continuing its support for semiconductor equipment and materials, the third tranche of the big fund is more likely to list high value-added DRAM chips such as HBM as critical investment targets.

1.8 Japan Continues to Tighten Controls on Semiconductors and Other Fields to Prevent the Outflow of Cutting-edge Technologies

Japan's Ministry of Economy, Trade and Industry announced to strengthen economic security, it will take strict measures in five key areas including semiconductors, advanced electronic components, batteries, machine tools and industrial robots, and aircraft parts to prevent technology from flowing overseas. The Ministry of Economy, Trade and Industry has set restrictions on companies' internal talents, customers and overseas production. Taking semiconductors as an example, when the output of cutting-edge products with a circuit line width of less than 30 nanometers increases by more than 5% in other countries, or when the output of traditional semiconductors in other countries increases by more than 10%, companies need to report to the Ministry of Economy, Trade and Industry.

Project	Detail
Employee	• Limit access to important technologies • Prevent employees from taking technology with them when they leave
Customer	• Sign confidentiality agreements when sharing technology • Regularly confirm the customers' technical management status
Overseas Production	• When other countries increase production, report to the Ministry of Economy, Trade and Industry in advance

2. Semiconductor Industry Updates

2.1 Short-term Implications

- AI has boosted the demand growth of HBM, which may lead to DRAM shortages

2.1.1 Increasing HBM's Capacity may Lead to Supply Shortage of DRAM in the Second Half of the Year

Samsung and SK hynix have predicted that prices of DRAM and HBM will remain strong this year due to the growing demand for AI-related chips. To satisfy demand, they will convert more than 20% of their DRAM production lines to HBM production lines. TrendForce predicts that original factory capacity planning will take HBM as the priority. Due to the capacity squeeze effect, DRAM products may be in short supply.

2.1.2 India's Tata Electronics is Using its Pilot Capabilities to Expand Customers

According to the Economic Times, Tata Electronics, a subsidiary of the Indian steel and automotive conglomerate, has begun exporting chips to Japan, the United States and Europe. Tata Electronics' fab is expected to produce 50,000 wafers per month, providing PMICs, DDICs, MCUs, and HPC logic ICs to support automotive, computing and data storage, wireless communications, and AI applications.

2.1.3 SMIC has Become the World's Third Largest Chip Foundry, Signaling that China's Demand is Growing Rapidly

According to a Counterpoint Research report, in Q1 2024, SMIC occupied 6% of the global market share, up from 5% last year, surpassing GlobalFoundries and UMC to become the world's third largest chip foundry, mainly because China's demand for CIS, PMICs, IoT chips and DDICs has begun to recover.

Manufacturer	Q1 2023	Q2 2023	Q3 2023	Q4 2023	2023	Q1 2024
TSMC	61%	58%	59%	61%	60%	62%
Samsung	11%	12%	13%	14%	13%	13%
Global Foundries	7%	7%	6%	6%	6%	5%
UMC	6%	7%	6%	6%	6%	6%
SMIC	5%	6%	6%	5%	5%	6%
Huahong Group	3%	4%	3%	2%	3%	2%

2.2 Mid-term Implications

- Facing business challenges amid U.S. sanctions on AI chip exports and heightened competition, Nvidia has cut the price of its AI chip H20 in China

2.2.1 Nvidia Slashes Price of its Most Advanced China Chip

Nvidia has lowered the price of its AI chip H20 in China in response to U.S. sanctions and competition from Huawei. The price of H20 chips is more than 10% lower than Huawei's Ascend 910B in some cases. It is expected that nearly 1 million H20 chips will be shipped to China in the second half of 2024.

2.2.2 Intel Expects to Deliver More than 40 Million AI PC Processors This Year, Optimistic About the Growth in Demand for AI PCs

According to news, Intel Lunar Lake processors will be available in Q3 of 2024. Intel said that with the success of Core Ultra processors and the addition of Lunar Lake, it expects to deliver more than 40 million AI PC processors this year.

2.3 Long-term Implications

- AI chip industry landscape may be changed, as a plenty of chipmakers has accelerated their development of AI chips

2.3.1 TSMC Nanjing Fab Receives Indefinite Exemption from U.S.

TSMC stated that the U.S. Department of Commerce issued a "Verified End User" (VEU) authorisation to TSMC (Nanjing) Co., Ltd., confirming that items and services covered by U.S. export control regulations can be continuously provided to TSMC's Nanjing factory in the long term. Suppliers are not required to get individual licenses, and the Nanjing plant is expected to maintain its status quo.

The license obtained by TSMC this time is a long-term license, not the previous one-year exemption license. It means that in the future, if the manufacturing process does not change, there is no need to apply for a license from the U.S. Department of Commerce. TSMC's Nanjing factory currently mainly produces 16-nanometer and 28-nanometer processes.

2.3.2 Arm Plans to Develop AI Chips, which is Expected to Change the Competitive Landscape of the AI Chip Industry

According to reports, Arm, a chip design company owned by Softbank Group, plans to develop AI chips and strive to launch the first batch of products in 2025. Arm will establish an AI chip division with the goal of producing prototypes by the spring of 2025. Mass production will be handled by contract manufacturers and is expected to begin in the fall of 2025.

2.3.3 Renesas Values Indian Market, Planning to Expand its Business in India

Renesas recently announced plans to significantly expand its business in Indian market over the next few years. The company has set a clear goal to increase sales share of Indian market from less than 5% in 2022 to 10%-15% by 2030.

2.3.4 Infineon will Supply SiC Power Modules and Chips for Xiaomi SU7 Until 2027, Optimistic about Xiaomi’s Automotive Supply Chain Opportunties

Infineon announced that it will supply SiC power modules and chip products to Xiaomi Automotive SU7 until 2027. Infineon supplies two 1200 V HybridPACK Drive G2 CoolSiC modules for the Xiaomi SU7 Max version. In addition, it also supplies Xiaomi Automotive with a wide range of other products that meet different needs, such as EiceDRIVER™ gate drivers and more than 10 MCUs in

different applications. The two companies also agreed to further cooperate in SiC automotive applications to fully leverage the advantages of Infineon's SiC product portfolio.

3. Application Updates

3.1 Artificial Intelligence

- AI chip demand is expected to continue to grow

3.1.1 Microsoft Implements Dual-chip Plan, Deeply Benefiting AMD

Microsoft has introduced AMD's Instinct MI300X AI chip and Nvidia's processor to its Azure cloud service to provide diversified AI solutions. Microsoft will integrate AMD's Instinct MI300X AI chip into its Azure cloud service as an alternative to Nvidia GPUs. This not only provides customers with more choices, but also relieves purchasing pressure during peak demand periods.

3.1.2 Major Tech Giants are Investing More in Data Centres, Boosting the Growth of AI Market

Alibaba Cloud announced that it will invest in new data centres in five countries around the world, located in South Korea, Malaysia, Philippines, Thailand and Mexico. Google will invest a further EUR 1 billion to expand its data centre campus in Finland to drive the growth of its AI business in Europe. Microsoft announced investment of EUR 4 billion to develop data centres in France, aiming to strengthen its AI and cloud computing infrastructure.

3.1.3 SMCI will Ship More than 10,000 Cabinets of GB200-equipped AI Servers Next Year, and Nvidia AI Chip Orders will Continue to Grow

SMCI will ship more than 10,000 cabinets of GB200-equipped AI servers next year, accounting for up to 25% of Nvidia's overall GB200 cabinets. The supply chain has recently received notifications from SMCI about stocking up.

3.1.4 Amazon Plans to Expands its Cloud Computing Infrastructure in Singapore, Indicating that Demand for AI Chips Continues to Grow

Amazon plans to spend USD 9 billion to expand its cloud computing infrastructure in Singapore. The spending will be completed over the next four years and will double Amazon's cloud computing business (AWS) investment in Singapore. This

helps meet growing customer demand for cloud computing services and accelerates the adoption of AI.

3.2 New Energy

- In Japan and Europe market, energy storage industry may enter a period of demand growth

3.2.1 Haiju New Energy and Kelu Electronics have Reached a Strategic Cooperation in the Field of Energy Storage, Bringing Market Opportunities for Power Devices

Haiju New Energy Technology Co., Ltd. (referred to as "Haiju New Energy") has reached a long-term strategic cooperation with Shenzhen Kelu Electronic Technology Co., Ltd. (referred to as "Kelu Electronics"), a new energy industry platform under Midea Group. In the future, the two parties will focus on promoting cooperation in industrial and commercial photovoltaic, or energy storage projects in Midea factories across the country and in provinces where the peak-to-valley price difference is in line with investment returns. The planned annual cooperation scale will reach more than 300MWh.

3.2.2 Eku Energy Announces First Battery Storage Project in Japan, Signaling that Japan’s Energy Storage Industry is Expected to Grow

Eku Energy announced the launch of the Hirohara Battery Energy Storage System (BESS), located in Miyazaki Prefecture. It is Eku's first battery energy storage project in Japan. The company has reached a 20-year offtake agreement with Tokyo Gas for the project. As the global net-zero transition accelerates, Japan has launched its GX (Green Transition) policy to provide a roadmap for economic growth and emissions reduction. Increasing renewable energy generation is an important part of that roadmap, with battery storage playing a key role in balancing electricity supply and demand.

3.2.3 Star Charge and Schneider Electric Reorganise their Business, Optimistic about the Growth of Demand in the European New Energy Market

Star Charge and Schneider Electric signed a restructuring joint venture framework agreement on European charging and energy storage related business, giving full play to their respective leading advantages in R&D, manufacturing, distribution

and services, and building EV charging equipment, optical storage R&D and sales system for inverters, energy routers, lithium battery energy storage and other products.

3.2.4 CIMC Puwei New Energy Project has been Invested, Bringing Opportunities for Power Devices

CIMC Puwei New Energy Project is a joint venture between Qingdao CIMC Energy Storage Technology Co., Ltd. and Powin LLC of the United States. It focuses on R&D, manufacturing and sales of energy storage equipment with the world's leading technology, which is widely used in utilities, commercial and industrial as well as microgrids. The total project investment is CNY 1 billion, with a registered capital of CNY 200 million (the U.S. side accounts for 30%).

3.3 Automotive

- Increasing demand for intelligent driving will drive up demand for automotive chips

3.3.1 Honda Cooperates with IBM for SDV, Extending its Value Chain and Stabilising Chip Supply

Honda Motor and IBM said they have signed a memorandum of understanding to jointly develop next-generation computing technologies, such as chips for software-defined vehicles (SDV), in the long-term. The agreement outlines the intention to research and develop solutions to address emerging challenges related to processing performance, power consumption and design complexity.

3.3.2 SAIC Group and Audi Signed a Cooperation Agreement to Launch a New Pure Electric Model, Accelerating the Process of Domestic Automotive Intelligence

Audi and SAIC Motor announced the signing of a formal cooperation agreement. Audi will join forces with SAIC to develop a new platform "Advanced Digitised Platform" focusing on the Chinese market, and build a new generation of high-end intelligent connected models based on this platform. The first three pure electric models cover the B-class and C-class car segments, of which the first model will be launched in 2025.

3.3.3 WeRide has Obtained the L4 Autonomous Driving Freight Testing License, with Accelerating Domestic Autonomous Driving Commercialisation Process

WeRide's self-driving freight truck, Robovan, has been approved to carry out "pure unmanned testing" and "cargo loading testing" of self-driving urban freight trucks in Guangzhou. This is China's first purely unmanned remote test license for L4 autonomous freight vehicles in an urban open road scenario.

3.3.4 NETA Automotive and CATL Signed a Ten-year Comprehensive Strategic Cooperation Agreement, Bringing Power Device Market Opportunities

On May 24, NETA Automotive and CATL signed a ten-year comprehensive strategic cooperation agreement. NETA Automotive chose CATL as its preferred partner for automotive power batteries, and CATL will provide NETA Automotive with market-competitive power battery products and service guarantees. At the same time, the two parties will further carry out in-depth cooperation in the fields of zero-carbon, CIIC integrated intelligent chassis, battery replacement, V2G (Vehicle to gird), battery recycling, and market development.

3.3.5 Major Chinese Carmakers Has Accelerated Battery Replacement Business, Bringing Opportunities such as Power Devices and AI Chips

GAC expands cooperation with CATL in battery swap business: On May 16, GAC Aion signed a cooperation framework agreement on battery swap projects with CATL and Times Electric. According to the agreement, the three parties will carry out in-depth cooperation in the development of battery-swap models, the development, production and distribution of battery-swap blocks, vehicle and battery data management, and after-sales services. Previously, on May 8, GAC Group signed a charging and swapping strategic cooperation agreement with NIO.

NIO and China FAW reached a strategic cooperation in charging and swapping: NIO and China FAW signed a strategic cooperation framework agreement on May 21. Among them, collaboration includes the establishment of battery technology standards, the development of rechargeable and replaceable battery models, battery asset management and operation, and battery industry procurement and support.

4. Product Updates

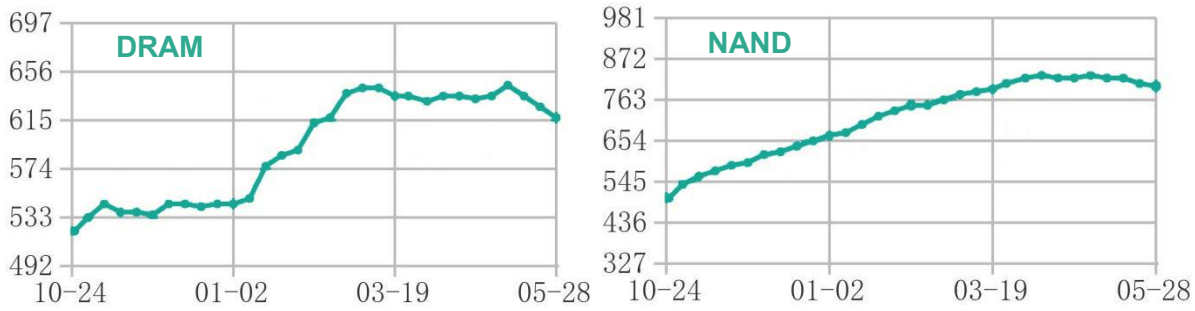
4.1 Memory: Overall Demand is Weak, While High-end Products are Popular

In May, the memory chip spot market was relatively weak. According to data from CFM, DRAM price index has dropped significantly recently, while NAND price index

has declined slightly. This is mainly due to insufficient replenishment momentum from customers, slowing demand growth, and relatively high liquidity pressure on the trade side. In the short-term, memory chip spot market will continue to be under pressure. In the second half of the year, as the industry enters the traditional peak season, memory chip prices are expected to return to the growth track.

However, high-end products such as HBM and DDR5 are in short supply. Server customers represented by the Internet companies are actively promoting the construction of AI servers, leading to positive demand performance, especially the surging demand for DDR5 and HBM.

Price Index of DRAM and NAND



Data Source: CFM

4.2 Power: Demand for SiC Outstrips Supply Side and High-voltage MOSFET Possesses Extending Lead time

According to the Supplyframe report, the shortage of SiC devices will continue in 2024, with delivery times extending. Meanwhile, high-voltage MOSFET's lead time is still long. However, the supply of other power devices is flexible and their delivery time is normalised.

In addition, according to "Latest Trends and Technology Trends in Power Device Wafer Market" report released by the Japanese market research organisation Fuji Economics, the power semiconductor wafer market size will reach JPY 281.3 billion in 2024 (a year-on-year increase of 23.4%); among which SiC die sales are expected to increase by 56.9%.

Lead Time of Power Device

Manufacturer	Product	Lead Time (Weeks)
Onsemi	High-voltage MOSFET	12 – 40
Microchip	High-voltage MOSFET	30 – 50
Infineon	High-voltage MOSFET	12 – 40
STM	SiC MOSFET	52
	Super junction IGBT	50 – 52
	MOSFET	18 – 22

Data Source: Supplyframe

4.3 MCU: Most Products have Adequate Inventory with Differentiating Structure

1) Lead time of MCUs (STM32F, L, U, MP series) from STM is stable at 14 – 16 weeks, and prices are inverted. Spot price of some chips is lower than the contract price, such as STM32F103, STM32F407 and other series.

2) Lead time of MCUs from NXP continues the trend of structural differentiation. Lead time of general-purpose MCUs (such as LPC17x) has a further shortening trend, but automotive MCUs is still long, reaching 36 – 54 weeks. Recently, it has also launched the MCX W series MCU that supports multi-protocol wireless connection, continuing to expand its business from edge AI sector.

3) Demand for Microchip's chips is sluggish. Spot inventory levels are robust, resulting in significantly reduced lead times, approximately around 4 weeks.

Lead Time of MCUs

Manufacturer	Product	Lead Time (Weeks)	Lead Time Trend
STM	MCUs (STM32F, L, U, MP series)	14 – 16	Stable
NXP	16-bit, MCU (S912x)	13 – 25	Down
	32-bit, MCU (MK64x, MK70x)	18 – 54	Unstable
	General-purpose MCU (LPC17x)	13 – 50	Down
	Automotive MCU (MP5x, FS32x, MCFx)	36 – 54	Stable
MICROCHIP	8-bit, MCU (PIC16x, AT89x, ATMEGA25x)	52	Stable
	16-bit, MCU (PIC24x, DSPIC3x)	50 – 52	Down
	32-bit, MCU (ATSAMA5x, PIC32x)	18 – 22	Lead time of most models is shortened, but that of some still long

Data Source: Internet Information

4.4 MLCC: Shipments in Q2 will Grow Steadily Due to Demand from AI Servers and ICT

According to TrendForce's forecast, MLCC shipments in Q1 2024 may be the lowest in the past three quarters. In addition to the steady growth of AI server demand in Q2, demand for other consumer electronics is low. Driven by the demand for AI servers and ICT products, MLCC shipments are projected to increase by 6.8% quarterly, reaching 1,234.5 billion units. This is anticipated to result in a modest revenue growth in Q2.

5. Key Market Trends

5.1 Chinese Automakers are Required to Purchase 25% of Domestic Chips in 2025, Optimistic about the Future Demand Growth for Chinese Automotive Chips China's Ministry of Industry and Information Technology has required automakers such as SAIC Motor, BYD, Dongfeng Motor, GAC, and FAW Group to increase the proportion of local procurement of auto-related chips by 20% to 25% by 2025. Additionally, many automotive chips, including sensors, MCUs, and PMICs, do not necessitate cutting-edge production and technology. This indicates that Chinese chipmakers are likely to experience significant benefits.

5.2 Demand for DRAM may Exceeds its Supply Due to Capacity Squeeze Effect
Samsung and SK hynix have converted more than 20% of their DRAM production lines to HBM production lines. Due to capacity squeeze effect and traditional peak season in Q2 of the year, DRAM may be in shortage.

5.3 AI Craze Continues, with Shortened Iteration Cycle of AI Chips, Leading to Demand Explosion for New Products
Technology giants, such as Alibaba Cloud, Google, and Microsoft, are accelerating the layout of data centres. In addition, related cloud service manufacturers are boosting the shipment of AI servers. In the future, the demand for AI chips (such as Nvidia GB200, H200, AMD's MI300X, etc.) will continue to grow.

Conclusion

As the blossoms of May unfurled, the global economy embarked on a journey of resurgence, yet China's manufacturing industry encountered a softening in both demand and supply sides. In this vibrant month, the United States and Japan have announced policies, tightening the reins on the export of cutting-edge products and technologies, in a strategic move to fortify their domestic supply chains. In a parallel stride, China has launched the third tranche of its "Big Fund", a beacon of support for the burgeoning semiconductor industry. HBM stands poised as a pivotal investment target, catching the eye of many.

In the wake of the surging AI tide, a transformation is afoot among chipmakers, as they pivot from the production of DRAM to the more specialised HBM, a shift that heralds potential DRAM shortages come the peak season. Yet, amidst the turbulence of the U.S. sanctions and the competitive shadow of Huawei, Nvidia has strategically adjusted the sails, reducing the price of its AI chip, the H20.

Meanwhile, the tech titans have embarked on an ambitious quest, investing heavily in the construction of data centres across the globe, a testament to the ever-escalating appetite for AI chips.

To sum up, AI developments paint a picture of a market ripe with opportunity of HBM, DRAM, and AI chips—where the winds of innovation and strategic foresight converge to shape the future of semiconductor market landscape.

References

[1] US says tariff increases on Chinese EVs, batteries and chips to start Aug. 1, Reuters, 2024
[2] China Reportedly Demands Automakers Increase Local Chip Procurement to 25%, TrendForce, 2024
[3] China Raises $48 Billion for Semiconductor Fund to Bolster Chip-Making Capabilities, Wall Street Journal, 2024
[4] Strengthening Controls on Semiconductor Equipment Exports to China, Japan Reportedly Tightens Export Control Measures Further, TrendForce, 2024
[5] HBM Boom May Lead to DRAM Shortages in the Second Half of the Year, TrendForce, 2024
[6] Tata Electronics begins export of semiconductor chip samples from Bengaluru centre, THE ECONOMIC TIMES, 2024
[7] China's SMIC is now world's third-largest chip foundry, CNBC, 2024
[8] Nvidia cuts China prices in Huawei chip fight, Reuters, 2024
[9] Intel’s Lunar Lake Processors Arriving Q3 2024, Intel, 2024
[10] TSMC’s Nanjing Plant Reportedly Pushes for Indefinite Exemption From US Before the May 31 Deadline, TrendForce, 2024
[11] SoftBank's Arm plans to launch AI chips in 2025, NIKKEI, 2024
[12] Japan chipmaker Renesas targets India for over 10% of sales, NIKKEI, 2024
[13] Infineon provides a broad range of products for Xiaomi’s new SU7 smart electric vehicle, Infineon, 2024
[14] Microsoft offers cloud customers AMD alternative to Nvidia AI processors, Reuters, 2024
[15] Alibaba Cloud announced that it will invest in new data centers in five countries around the world, stdaily.com, 2024
[16] Google invests 1 billion euros in Finnish data centre to drive AI growth, Reuters, 2024
[17] Microsoft to invest 4 billion euros in France, Reuters, 2024
[18] SMCI Will Ship More than 10,000 Cabinets of GB200-equipped AI Servers Next Year, CLS.com, 2024
[19] Amazon to Invest $9 Billion in Singapore Cloud Infrastructure, Wall Street Journal, 2024
[20] Haiju New Energy and Kelu Electronics Have Reached a Strategic Cooperation in the Field of Energy Storage, chuneng.bjx.com, 2024
[21] Eku Energy announces first battery storage project in Japan, Eku Energy, 2024
[22] Star Charge, Schneider Electric restructure European new energy joint venture business, Gasgoo, 2024

[23] CIMC Puwei New Energy Project is a joint venture between Qingdao CIMC Energy Storage Technology Co., Ltd. and Powin LLC of the United States, chuneng.bjx.com, 2024
[24] Honda and IBM Sign Memorandum of Understanding to Explore Long-term Joint Research and Development of Semiconductor Chip and Software Technologies for Future Software-Defined Vehicles, IBM, 2024
[25] Audi and SAIC Deepen Ties to Launch Electric Car Lineup in China, Caixin Global, 2024
[26] WeRide Has Obtained the L4 Autonomous Driving Freight Testing License, Jiemian News, 2024
[27] NETA Automotive and CATL Signed a Ten-year Comprehensive Strategic Cooperation Agreement, CATL, 2024
[28] GAC expands cooperation with CATL in battery swap business, GAC Group, 2024
[29] NIO and China FAW reached a strategic cooperation in charging and swapping, yicai.com, 2024
[30] Some Internet manufacturers have added orders to HBM, CFM, 2024
[31] MLCC Shipments Expected to Increase by 6.8% in Q2 Thanks to Strong AI Server Demand, TrendForce, 2024

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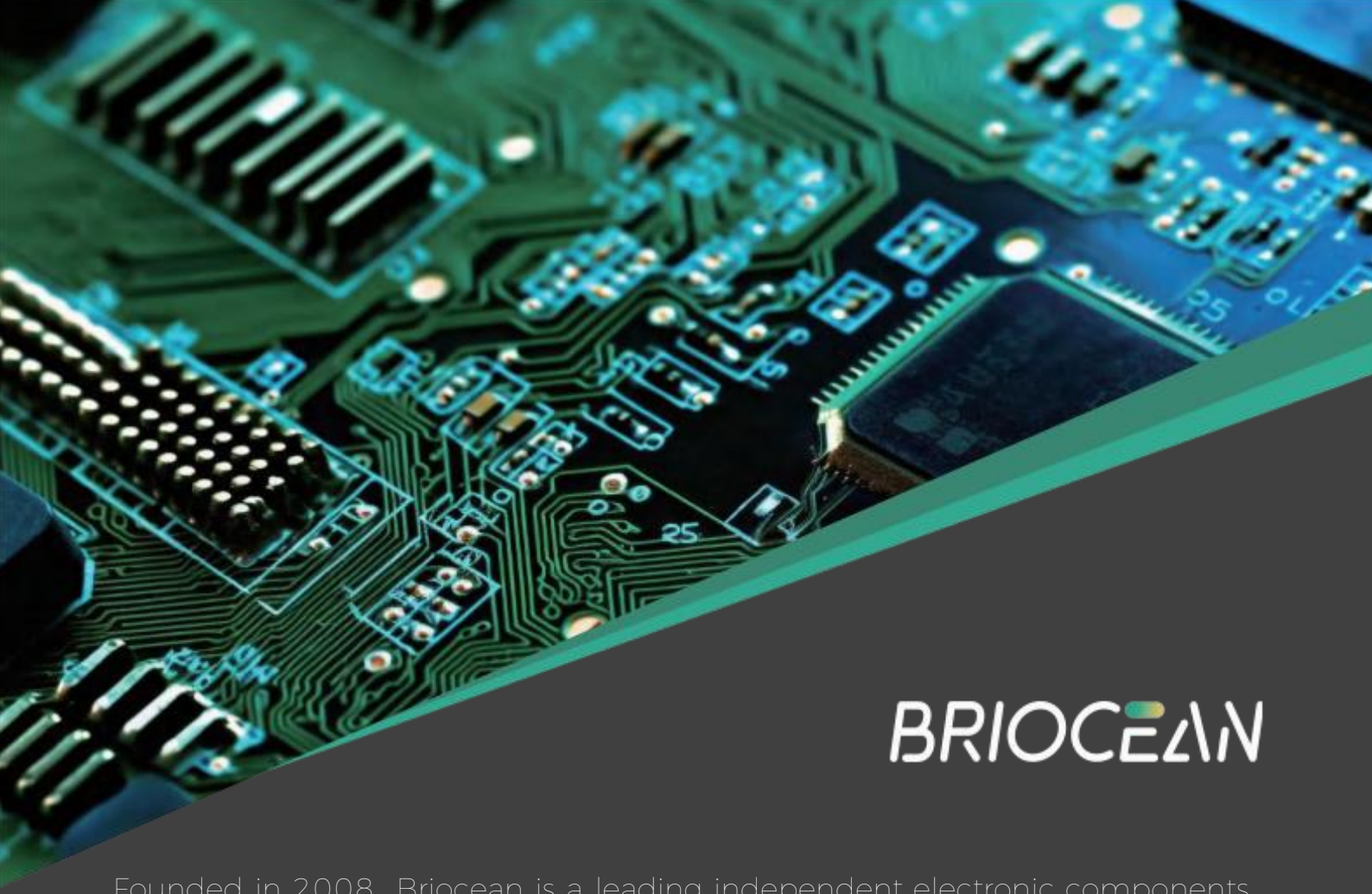

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