HQEWGROUP | Chip Insights

2023.03

Electronic Components Sales Market Analysis and Forecast

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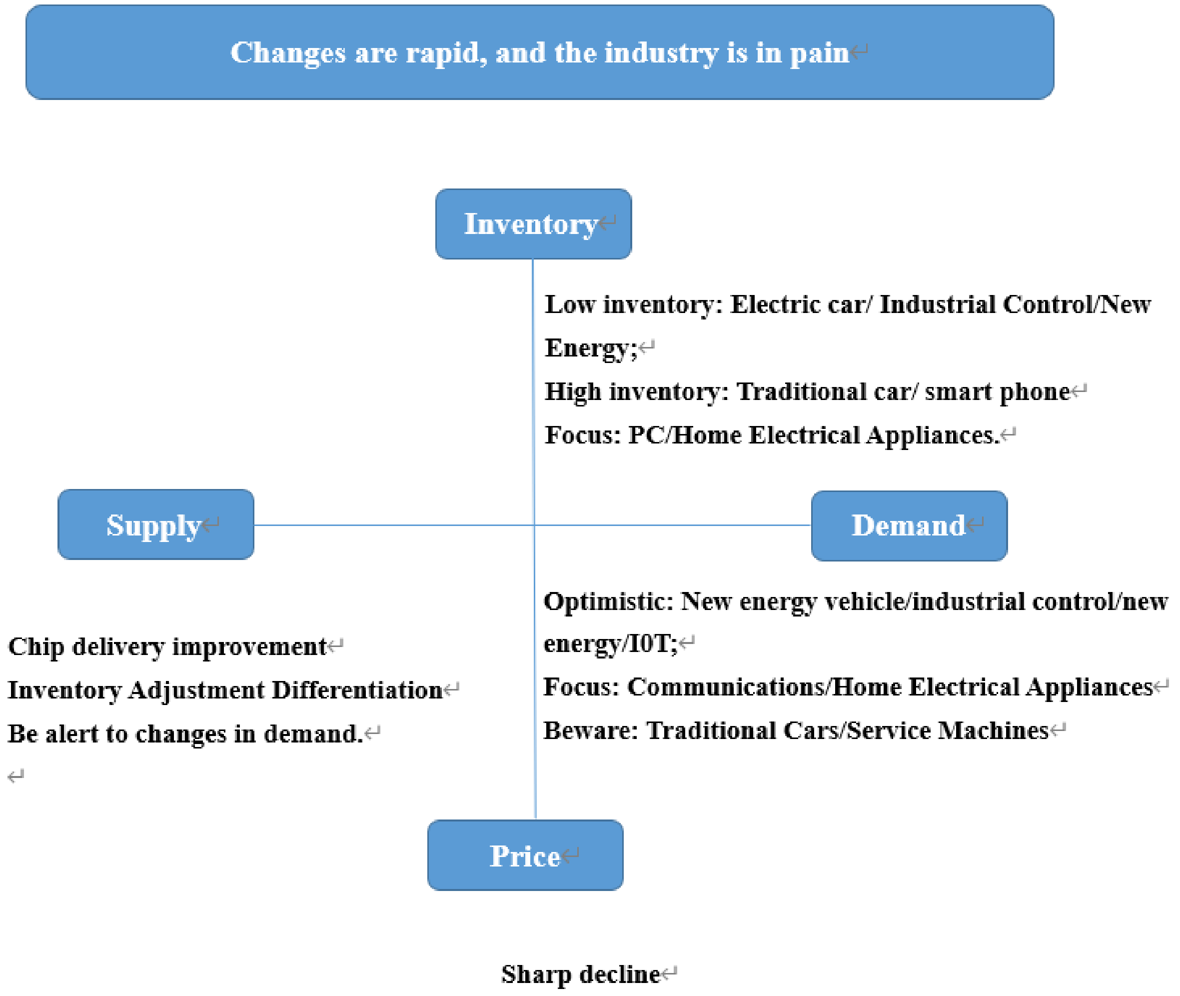
Prologue

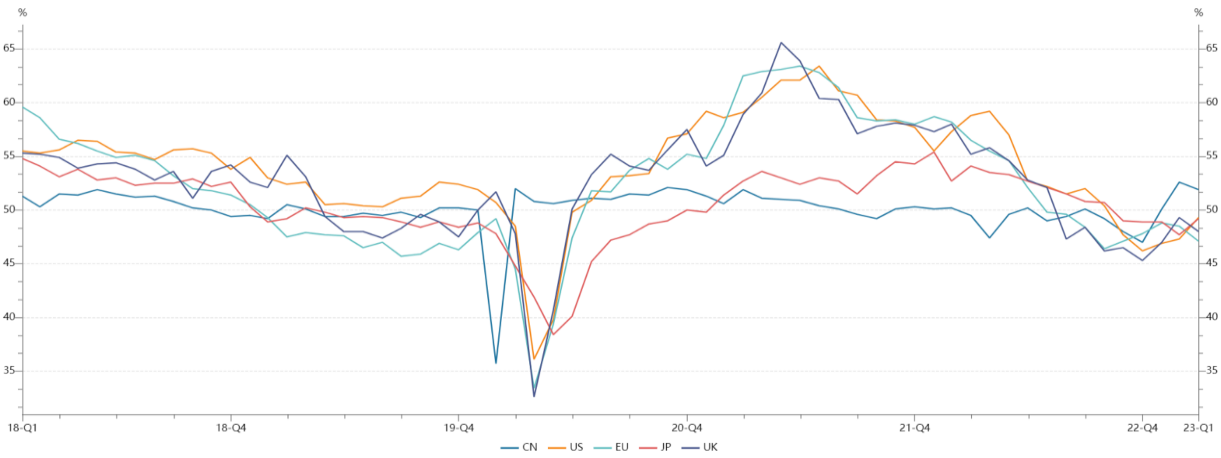


1 Macroeconomics in March

1.1 The Global Manufacturing Industry Is Stabilizing and Picking Up, with Increasing Volatility

In March, the global economy experienced a correction, but except for China, major economies including the United States, the European Union, and Japan are still at a low level, and the stabilization situation remains to be seen.

Chart 1: Manufacturing PMI of global major economies in March



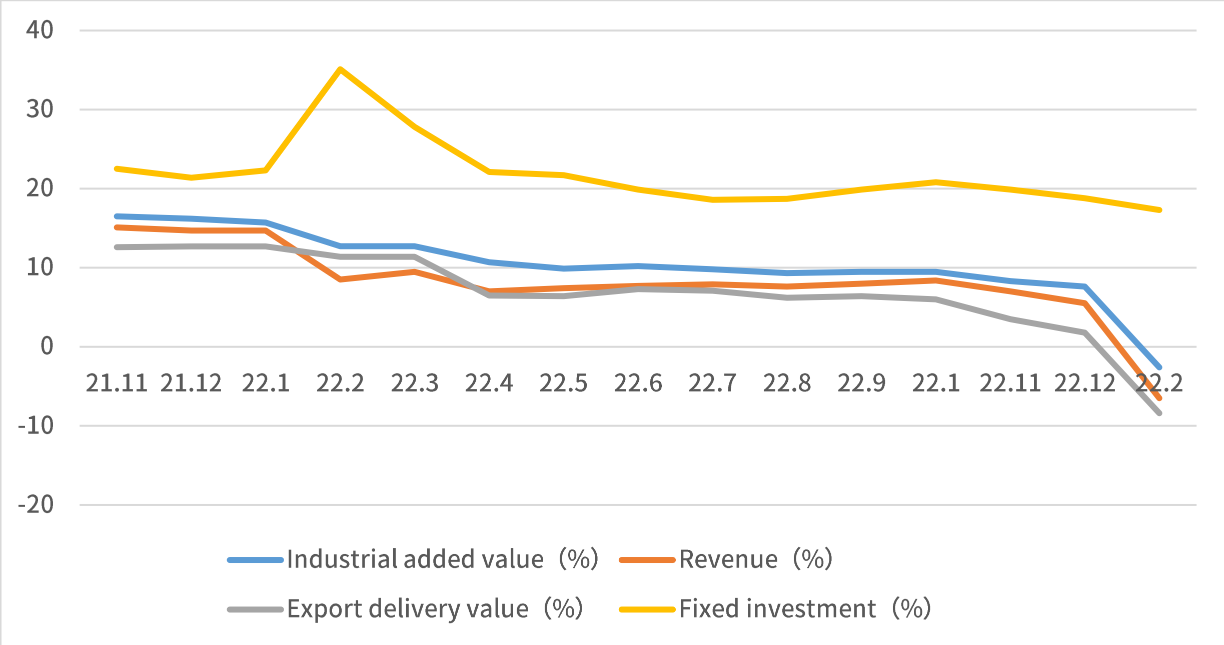
Source: NBSPRC

The epidemic is no longer the main factor affecting the recovery of the world economy. Due to the impact of geopolitical conflicts, the stability of the global industrial chain and supply chain is still unstable, and the impact of general inflation on the economy has intensified.

1.2 The Electronic Information Manufacturing Industry Declined Significantly and Continued to Decline

From January to February, the production scale of the electronic information manufacturing industry shrank slightly year-on-year, exports showed a downward trend, corporate profits declined significantly, and investment maintained rapid growth.

Chart 2: Operation of electronic information manufacturing industry in February 2022

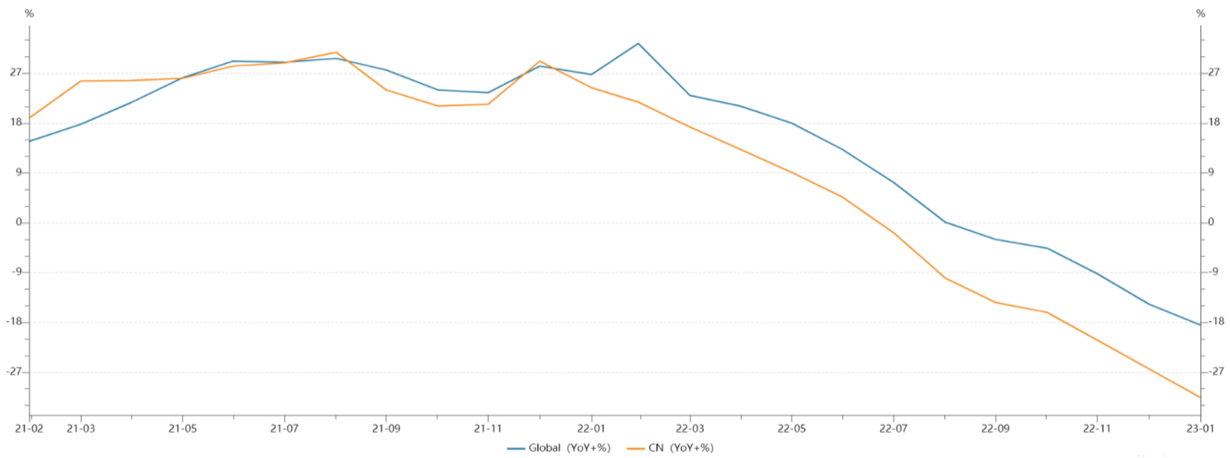


Source: MIIT、Chip Insights

1.3 Semiconductor Sales Fell Sharply, and the Index Pulled Back

In January 2023, according to the latest adjusted data, the global semiconductor industry sales fell by 18.5% year-on-year, and the Chinese market fell by 31.6% year-on-year. The semiconductor industry has entered a cyclical recession.

Chart 3: Comparison of global and Chinese semiconductor industry sales growth in January 2023



Source: SIA、Chip Insights

From the perspective of the capital market index, the Philadelphia Semiconductor Index (SOX) rose by 9.3% in March, and the China Semiconductor (SW) industry index retreated by 6.04%. Affected by the recovery of the supply chain, market confidence rebounded briefly.

Chart 4: Trends of Philadelphia and SWS Index in March

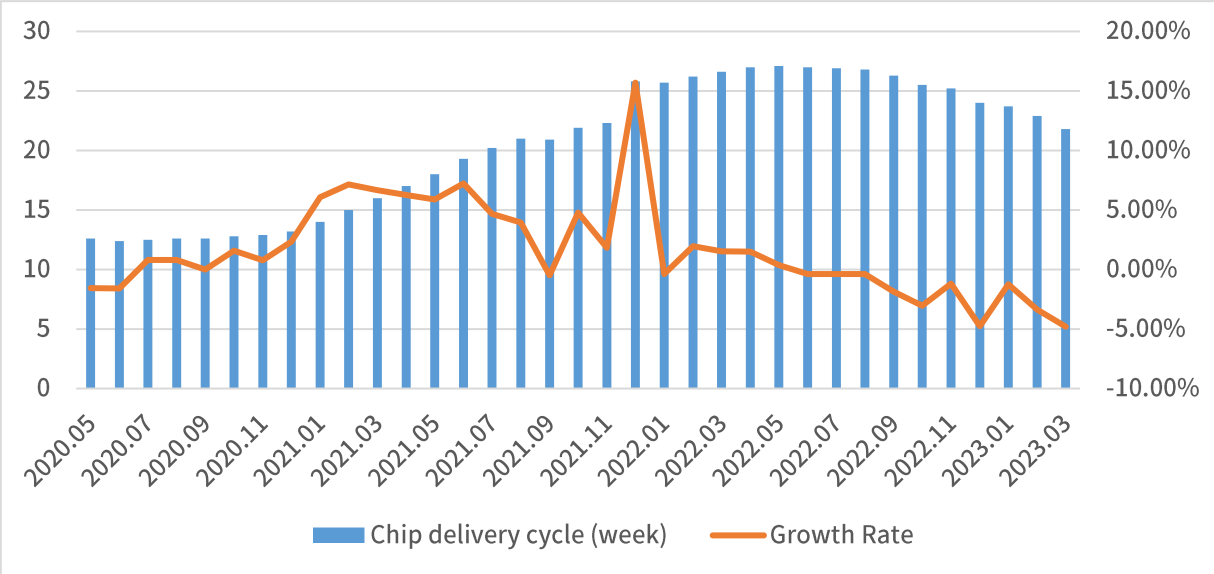
Source: Wind

2 Chip Delivery Trend in March

2.1 The Overall Chip Delivery Trend

In March, the global chip delivery cycle continued to decline from the high point in May 2022, and the cumulative delivery period was shortened by more than one month. There are various signs that the chip shortage crisis that has lasted for more than two years is expected to end.

Chart 5: Chip Delivery Trends in March



Source: Susquehanna Financial Group

2.2 List of Delivery Cycles of Key Chip Suppliers

From the perspective of the latest Q1 suppliers, the inventories of consumer material manufacturers such as Broadcom, Samsung, and SK Hynix are at a high level. The delivery dates of manufacturers with a wide range of applications, such as Microchip, ST, and NXP, have dropped significantly. The overall delivery dates of manufacturers such as Infineon and ON Semiconductor have stabilized. In terms of sub-categories, the delivery time of most automotive-grade chips has improved, and consumer products have shown a trend of turning around with the destocking market.

Chart 6: Latest chip supplier delivery cycle at a glance in Q1 2023

Manufac turer	Product	23Q1Delivery Date/Week	Delivery Trend	Price Trend
ST	sensor	12—24	decline	Stablize
	Amplifiers and Data Converters	28-40	decline	Stablize
	bluetooth module	20-25	decline	Stablize
	Thyristor/Triac	30-40	decline	Stablize
	8-bit MCU	35-52	decline	Stablize
	car	40-52	Stablize	Stablize
	32-bit MPU	16-20	decline	Stablize
	STM32FO	16-20	decline	Stablize
	STM32F1	16-20	decline	Stablize
	STM32L	16-20	decline	Stablize
	32-bit MCU	35-48	decline	Stablize
On semi	Amplifiers and Data Converters	26-42	decline	Stablize
	Low Voltage MOSFETs	36-52	decline	rise
	logic device	20-30	decline	Stablize
Infineon	bluetooth module	26-36	decline	Stablize
	Low Voltage MOSFETs	26-54	decline	Stablize
	32-bit MCU	26-52	decline	Stablize
NXP	8-bit MCU	35-52	decline	Stablize
	32-bit MCU	26-52	decline	Stablize
	32-bit MPU	32-52	decline	Stablize
Renesas	switching regulator	36-40	decline	rise

Manufacturer	Product	23Q1Delivery Date/Week	Delivery Trend	Price Trend
	8-bit MCU	40	decline	rise
	32-bit MCU	40	decline	rise
Microchip	FPGA	32-52+	decline	Stablize
	WiFi module	24-26	decline	rise
	8-bit MCU	36-52+	decline	rise
	32-bit MCU	36-52+	decline	rise
Diodes	Low Voltage MOSFETs	26-54	decline	Stablize
	TVS diode	18-24	decline	Stablize
	bridge rectifier	14-32	decline	Stablize
	Schottky diodes	14-52	decline	Stablize
	Zener diode	16-45	decline	Stablize
	bipolar transistor	14-45	decline	Stablize
	Digital Transistor/RETS	14-45	decline	Stablize
	general purpose transistor	14-45	decline	Stablize
	logic device	30-40	decline	Stablize
Murata	bluetooth module	26-50	decline	Stablize
	filter	16—20	decline	Stablize
	Leaded Ceramic Capacitors	16—18	decline	Stablize
	Dedicated Capacitor	16—18	decline	Stablize
Nexperia	Schottky diodes	8-50	decline	Stablize
	switching diode	8-50	decline	Stablize

Manufac turer	Product	23Q1Delivery Date/Week	Delivery Trend	Price Trend
	Small Signal MOSFETs	12-50	decline	Stablize
	Zener diode	8-50	decline	Stablize
	bipolar transistor	8-50	decline	Stablize
	Digital Transistor/RETS	8-50	decline	Stablize
	general purpose transistor	8-50	decline	Stablize
SK Hynix	NAND flash	8—12	decline	Adjust according to the market
	eMMC	8—12	decline	Adjust according to the market
kingston	eMMC	4—10	decline	Adjust according to the market
	Solid State Drive (SSD)	4—8	decline	Stablize

Source: Future Electronics、 Chip Insights

3 Orders and Inventory in March

From the perspective of corporate orders and actual inventories, the orders and inventories of consumer manufacturers have been adjusted back, and prices have been loosened; the supply and prices of automotive specifications have stabilized.

Chart 7: Orders and inventories of leading companies in March

Company	Order Status in March	Inventory in March	23Q2 Pricing Trends
Intel	Stablize	generally	Adjust according to the market

Company	Order Status in March	Inventory in March	23Q2 Pricing Trends
AMD	Stablize	generally	Stablize
Samsung	decline	generally	Stablize
TI	Stablize	Low	Adjust according to the market
ST	Stablize	Low	Adjust according to the market
ADI	Stablize	Low	Stablize
Qualcomm	decline	generally	Adjust according to the market
Broadcom	decline	generally	decline
NXP	rise	Low	rise
Infineon	rise	Low	rise
Renesas	Stablize	Low	Adjust according to the market
ONSemi	rise	none	rise
Microchip	Stablize	generally	Stablize
Micron	decline	generally	decline
SK Hynix	decline	generally	decline
Murata	decline	Low	Stablize
MediaTek	decline	generally	decline

Inventory status: high > generally > low > lower > none

Source: Chip Insights

4 Semiconductor Supply Chain in March

The destocking of consumer materials has improved. Under the destocking of traditional automobiles, the products of automotive specifications have improved significantly, and the industry's prosperity has turned slowly but steadily.

4.1 Semiconductor Upstream Manufacturers

(1) Silicon Wafer/Equipment

In March, the demand for equipment fell to a certain extent, and attention will be paid to the impact of increased restrictions in the Netherlands; affected by the demand for foundry, silicon wafers may face new shock adjustments.

Chart 8: Orders of semiconductor equipment and silicon wafer leading enterprises in March

Type	Enterprise	Order in March	Inventory in March	23Q2 order forecast
Equipment	ASML	Stablize	Low	Adjust according to market conditions
	AMAT	Stablize	Low	Stablize
	Lam	Stablize	Low	Adjust according to market conditions
	TEL	Stablize	Low	Stablize
	KLA-Tencor	Stablize	Low	Adjust according to market conditions
	NAURA	Stablize	Low	rise
	Cmsemicon	Stablize	Low	rise
Silicon wafer	ShinEtsu	decline	generally	decline
	Sumco	decline	generally	decline
	Global Wafer	decline	higher	decline
	Tai Win	decline	higher	decline

Type	Enterprise	Order in March	Inventory in March	23Q2 order forecast
	WAFER WORKS	decline	higher	decline
	National Silicon Industry Group	Stablize	generally	decline

Source: Chip Insights

(2) Fabless/IDM

In March, major manufacturers have passed the peak period of inventory adjustment, and the prosperity has turned around, focusing on expanding production for automotive-level applications.

Chart 9: Latest news of major Fabless/IDM manufacturers

Manufacturers	News in March
Intel	Released Xeon processor roadmap, Intel 20A, Intel 18A test chips have been taped
AMD	Samsung plans to develop mobile GPUs based on AMD RDNA architecture
Nvidia	Will provide next-generation AI chips to Amazon and Google cloud businesses
TI	The second assembly/test plant (CDAT2) in Chengdu is expected to be put into operation within this year
Qualcomm	Automobile chip research and development center in Chengdu, optimistic about China's economic prospects
Samsung	The semiconductor business has lost 3 trillion won from January to February
MediaTek	Some driver ICs increased by 10-15%
Broadcom	Consider Intel as a potential foundry partner

Manufacturers	News in March
ADI	Collaborate with Keysight Technologies to design and develop 6G technology
ST	12-inch MCU production capacity will double in 2025
Infineon	Signed a long-term cooperation agreement with UMC on 40nm MCU chips; increase silicon carbide production capacity by 10 times in 2027
NXP	Demand for chips in the automotive and industrial sectors will continue to grow in 2023
Renesas	Announced Acquisition of NFC Company Panthronics
ON Semi	Signed a long-term supply contract for Elite SiC chips with BMW
Microchip	Invest $800 million to expand production in Oregon, and the production capacity of MCU and analog products will be tripled
TOSHIBA	Accepted JIP's 2 trillion yen takeover offer
Apple	Self-developed 5G baseband chips using TSMC's 3nm process will be available in 2024
Micron	Customer Inventory Situation Improves
Rapidus	Or invest 5 trillion yen to develop 2nm technology
SK Hynix	U.S. seeks one-year extension of China chip export control exemption
Marvell	320 U.S. layoffs in response to industry slowdown
Sony	Discuss cooperation plan for semiconductor supply with Samsung Electronics
Murata	New 200mm wafer production line in Caen, France
TAIYO YUDEN	MLCC material barium titanate new factory completed
Yageo	Product prices have stabilized, and the capacity utilization rate of standard products is about 40%~50%
Huawei	Basically realized the localization of EDA tools above 14nm

Manufacturers	News in March
YMTC	The global NAND flash memory market will reach a balance between supply and demand in the second half of the year
Fudi Technology	Layout millimeter wave radar track
Howay	Acquisition of Coretech, increasing the automotive semiconductor business
Gigadevice	Jointly launched a new fund of 500 million yuan with CICC Capital

Source: Chip Insights

(3) Foundry

In March, car specifications and material numbers are also under pressure to cut orders and cut prices. Mature manufacturing processes can cut prices by up to 20%. The OEM side has become a new storm circle.

Chart 10: Major foundry updates in March

Manufacturers	Capacity Utilization in March	Dynamics in March	23Q2 Price Trend
TSMC	70%-90%	The inventory adjustment progress of the five major customers is not as expected; the revenue in February fell by 18.4% month-on-month; the progress of setting up factories in Europe has slowed down	decline
Samsung	85%＜	10% price reduction for mature processes	decline
UMC	70%	Q1 order visibility is low	Stablize
SMIC	70%-80%	Orders will recover in the second half of the year, but prices may not necessarily rise over the same period	decline

Manufacturers	Capacity Utilization in March	Dynamics in March	23Q2 Price Trend
GlobalFoundries	85%<	Careful attention to market changes	Stablize
VIS (Vanguard International Semiconductor)	50%-60%	Capital expenditure in 2023 is estimated to be about NT$10 billion, a year-on-year decrease of 48%	decline
PSMC	About 60%	Negotiate price adjustments with customers conditionally	decline

Source: Chip Insights

(4) OSAT

In March, due to the impact of upstream production reduction and downstream destocking, the industry was still in a downward phase.

Chart 11: Dynamics of major OSAT manufacturers in March

Manufacturers	Capacity Utilization in March	Dynamics in March	23Q2 Order Forecast
ASE	80%<	Introduced state-of-the-art Fan-Out Stacked Package (FOPoP) solution	decline
JCET	About 80%	Some production lines of integrated circuit and module packaging projects started small-batch verification production	decline
Tongfu Microelectronics	80%-90%	AMD orders accounted for more than 80%, revenue accounted for 54.15%	decline
H T-Tech	80%<	Plan to implement advanced packaging and testing research and development and industrialization projects	decline

Manufacturers	Capacity Utilization in March	Dynamics in March	23Q2 Order Forecast
Chippacking Technology	80%-90%	MEMS packaging products have entered the mass production stage	decline
Small and medium OAST	40%-60%	Or usher in a wave of mergers and reorganizations	decline

Source: Chip Insights

4.2 Distributor

Distributor inventories showed a downward trend in March, and lead times for most product categories were significantly shortened.

Chart 12: Major component distributor updates in March

Manufacturers	News in March
Arrow	Reached a strategic cooperation with Qualcomm in AI applications
Avnet	High-voltage fast charging is the future direction of new energy vehicles
WPG	Benefiting from the demand for communications, servers, automation and automobiles, the net operating profit in 2022 will be 14.7 billion
Mouser Electronics	Signed a global distribution agreement with Xvisio Technology
Future Electronics	Significantly shorter lead times for most product categories
CECport	China Securities Regulatory Commission approves IPO registration
Yctexin	Plan to acquire 17.12% shares of WILLAS-ARRAY
Bobinfo	The proportion of overseas purchases in total purchases has been decreasing year by year
Yitoa Intelligent	Electromagnetically driven MEMS vibrating mirrors are ready for mass production

Manufacturers	News in March
Icbase	Beidou navigation-related business mainly comes from the agency of Murata, Rohm and other products

Source: Chip Insights

4.3 System Integration

In March, the demand for industrial control remained stable; the price reduction of traditional automobiles accelerated; the demand for consumer electronics differentiated.

Chart 13: Latest developments of major system integrators in March

Category	Manufacturer	Latest News in March
Industrial control	ABB	China's robot and automation demand has great room for growth, and the robot density will double by 2025
	Siemens	Signed a strategic cooperation agreement with Tianneng Battery
	Schneider	The fifth largest R&D center in China opened in Wuxi, focusing on automation
	Inovance Technology	PLC is a strategic product of the company's industrial automation business
	Rockwell	Acquired Knowledge Lens, a service and solutions provider
Automobile	Hyundai mobis	Focus on areas such as autonomous driving, smart cockpits, and robotic semiconductors
	Magna International	Plans to invest 100 million US dollars to build a new seat factory to supply GM
	Robert Bosch	New energy vehicle core components and autonomous driving R & D and manufacturing base laid foundation in Suzhou

Category	Manufacturer	Latest News in March
	Huawei	In 2022, the revenue of smart car business will be 2.2 billion yuan
	VALEO	The surge in orders for assisted driving will continue to increase investment in China
	ZF Friedrichshafen AG	ZF's sales in China will reach 7.7 billion euros in 2022, a year-on-year increase of 10%
	Borg Warner	$500 million investment in Wolfspeed
Consumer Electronics	Wingtech	Or receive orders for 25 million mobile phones and 20 million tablets from Samsung
	Huaqin	Initiated the establishment of a fund and signed a contract to settle in Fenhu, Wujiang, with a scale of 2 billion yuan
	Luxshare	The medium and long-term goal is to become Tier 1 of auto parts
	GoerTek	Some optical module products can be applied in the field of automotive electronics
	Foxconn	New electronics factory to be built in Telangana, India
	Pegatron	Plans to open second plant in India

Source: Chip Insights

4.4 Terminal Application

(1) Consumer Electronics

Prudently assessing the recovery of consumer electronics, it is estimated that global shipments of smartphones, PCs, and tablets will decline by 1% and 11.2%, respectively, in 2023.

Chart 14: The latest news from consumer electronics manufacturers in March

Category	Enterprise	News in March
Smart Phone	Apple	From January to February, surpassed Samsung to become the world's largest mobile phone manufacturer
	Samsung	This year's smartphone shipments will not reach last year's level
	Huawei	The downward trend of consumer terminal business slows down
	MI	The gross profit margin of the smartphone business will drop from 11.9% in 2021 to 9% in 2022
	OPPO	Downsizing of German and UK operations
	Lenovo	Rescuer mobile phone to give up, only keep Motorola business
	melzu	Team up with Geely to create "mobile phone + car" integration
	HONOR	Folding screen mobile phones doubled in the second half of this year compared to last year
	Vivo	Will integrate its iQOO to reduce costs and increase efficiency
PC	Lenovo	In 2022, the revenue will be 483.7 billion yuan, and the net profit will drop by about 80% year-on-year
	HP	Intel will fully withdraw from PC baseband chips, and HP's outsourcing orders will be reshuffled
	ASUS	PC inventories have already begun to decline
	Dell	PC inventory has increased
VR/AR	Meta	will continue to develop the metaverse
	GoerTek	Launched the first one-stop audio solution in the XR industry
	Apple	Mass production of AR/VR devices will be delayed until the middle and late stages of Q3

Source: Chip Insights

(2) New Energy Vehicles

The price of lithium carbonate in the upstream of lithium batteries is approaching the cost line, and the policy of exempting new energy vehicles from vehicle purchase tax will continue in 2023, and the industry's prosperity is optimistic.

Chart 15: Latest news from new energy vehicle manufacturers in March

Manufacturers	News in March
BYD	All new cars will use NVIDIA Drive Orin chips
Tesla	Next-generation platform reduces silicon carbide usage by 75%
Hyundai	Signed semiconductor outsourcing design and foundry contract with Samsung Electronics
Shanghai Volkswagen	New energy vehicle model base settled in Foshan, a variety of new energy vehicles will be put into production
BMW	Signed a long-term supply contract for Elite SiC chips with ON Semiconductor
Benz	China will be one of the fastest growing markets in the next 10 years, continue to expand investment in China
Toyota	Signed a strategic cooperation agreement with Haima Automobile on hydrogen energy development
GAC Aian	Cooperative project with Huawei becomes self-developed
Gellyauto	New energy sales in 2023 will double compared to 2022
Chery	Official drop up to 9000 yuan
NIO	The third-generation power station is planned to be officially put into use in early April
Xpeng Inc	P7i electronic control is exclusively supplied by Inovance Technology
LEADING IDEAL	Cumulative deliveries have exceeded 300,000
DENZA	From March 1st, DENZA D9 will increase by 6,000 yuan

Manufacturers	News in March
MI	Cars complete winter testing
Shanghai Automobile	A fund of 4 billion yuan is planned to focus on the fields of semiconductors and new energy

Source: Chip Insights

(3) Industrial Control

In March, the industrial control automation industry picked up synchronously with the release of downstream demand, and the demand showed a steady upward trend.

Chart 16: The latest news from industrial control manufacturers in March

Manufacturers	News in March
Schneider	Will invest 16 billion to build a new factory in Hungary
Mitsubishi Electric	A new semiconductor factory will be built in Japan
Honeywell	Won the Excellent Quality Award of COMAC
Xinje Electric	The company's business involves intelligent manufacturing
INVT	The industrial automation business accounted for more than 60%, and the low-voltage inverter accounted for the main share
HCFA	Key customers in the field of robotics are Topstar, STEP, Efort, etc.
Estun	The overall price difference between industrial robot products and foreign brand products is 15%-30%
Inovance Technology	In 2022, industrial robot sales orders will achieve more than 50% growth
STEP	The company takes motion control technology as the core
MEGMEET	The field of charging piles has the production capacity of complete machines

Source: Chip Insights

(4) Photovoltaic

In March, the overseas photovoltaic application market maintained a high demand, and the European market represented by Germany showed an acceleration trend.

Chart 17: Photovoltaic manufacturers latest news in March

Manufacturers	Latest News in March
Sungrow Power Supply	The cumulative global development and construction of photovoltaic/wind power stations exceeds 25 million kilowatts
Trinasolar	Completed the fundraising of 8.865 billion yuan of convertible bonds
Ginlong Technologies	Full capacity utilization
GoodWe Technologies	Products focus on the European market
INVT	Last year, the company's photovoltaic business was mainly domestic, and in the first two months of this year, domestic and overseas accounted for half and half.
Deye Technology	Annual production of 680,000 sets of inverter series product project postponed
Growatt	In 2022, the company's photovoltaic inverter shipments will be 930,520 units
Chint	Invest in a new photovoltaic company with a registered capital of 80 million
Tebian Electric	Accelerate the research and development of household inverters

Source: Chip Insights

(5) Energy Storage

It is predicted that the installed capacity of energy storage will reach 100GWh in 2023, doubling the market size compared with 2022, and the growth rate is much higher than that of the photovoltaic market.

Chart 18: Energy Storage Manufacturer Update in March

Manufacturers	Latest News in March
Sungrow Power Supply	Signed a large order of 825MWh energy storage in the UK
KSTAR	Most of the company's shipments are concentrated in the second half of the year
SINENG ELECTRIC	Shipments of energy storage converters once again rank first in China
Clou Electronics	Energy storage business is mainly used in B-end markets such as power grids and industrial and commercial
Zhongtian	Energy storage orders exceeded 2.1 billion yuan in the first two months
Hoymiles	50 million new energy technology subsidiary
Deye Technology	In 2022, the shipment of energy storage inverters will reach 300,000 units, a sharp increase of 677% year-on-year
INVT	Mainly focus on distributed solar storage inverters
GoodWe Technologies	The shipment of low-power energy storage PCS ranks first in the world
Growatt	In 2022, the company's energy storage system shipments will be 555,764 sets

Source: Chip Insights

(6) Service Machine

In March, the growth rate of the industry was lower than expected, including Amazon, Meta, Google, and Microsoft, all of which will reduce their purchases.

Chart 19: Latest server machine manufacturer news in March

Company	Latest News in March
LEAN FREE	The annual production capacity of the three major liquid-cooled server production bases exceeds 180,000 units
Inspur	Take the lead in publishing server liquid-cooled cold plate standards
H3C	H3C's acquisition of the remaining shares is expected to be completed within this year
Dell	Semi-finished products in ODM and warehousing still to be resolved
HPE	Lower motherboard production for ODM

Source: Chip Insights

(7) Communication

The research and development of 6G technology will be fully promoted, and the next three to five years will be the window period for breakthroughs in key technologies.

Chart 20: Latest news from communications manufacturers in March

Company	Latest News in March
Huawei	In 2022, the ICT infrastructure business will be 354 billion yuan
ZTE	In 2022, the company's 5G base station, 5G core network, and optical transmission 200G port shipments will all rank second in the world
Cisco	Rank No. 1 in the global SP router and switch market in 2022
Nokia	7.6% of global 5G patents in 2022
Ericsson	In 2022, it will still be the top three suppliers in the market outside China, accounting for about 18% of the market share

Source: Chip Insights

5 Distribution and Sourcing Opportunities and Risks

5.1 Opportunities

(1) To a Higher Level, the Scale of Smart Home Devices May Exceed 279 Billion in 2026

With technological change + policy support + industrial upgrading, it is estimated that the global smart home equipment market will exceed US$279 billion in 2026. China has become the world's largest smart home producer, with an annual shipment of about 220 million units, accounting for 50% to 60% of the global smart home market share. In terms of subdivided categories, security monitoring and intelligent lighting will become key categories leading the development of the smart home market. Manufacturers to focus on include Apple, Samsung, Huawei, and Xiaomi.

(2) Prosperous, Global Shipments of Foldable Mobile Phones May Reach 19 Million Units in 2023

According to incomplete statistics, in 2023, there will be 37 foldable mobile phones launched by multiple brands including Samsung and Huawei. More than 22 million pieces, and the output exceeds 20 million units. Focus on panel and chip manufacturers Samsung, BOE, Tianma and Magna, Chipone North, etc.

(3) The Future Is Promising, Sic Power Devices Will Exceed 2.2 Billion in 2023

According to statistics, in 2022, SiC power devices are mainly used in fields such as electric vehicles and new energy, with market sizes of US$1.09 billion and US$210 million, accounting for about 67.4% and 13.1%. In 2023, as ST, ON Semiconductor, Infineon, and BYD Semiconductor's projects in the automotive and new energy fields become clear, the overall SiC power component market will reach US$2.28 billion, a year-on-year increase of 41.4%. Focus on the progress of domestic and foreign head module manufacturers such as ST, ON Semiconductor, Infineon and BYD Semiconductor.

(4) The Market Is Improving, and the Price of Mobile Phone HD Version TDDI Chips Has Risen by 10%

Since the beginning of March, the quotations of HD-quality TDDI chips in the mainstream mobile phone market have risen by 10%. This is the first price increase for IC design factories after inventory adjustment since the second half of 2022. It is reported that the short supply of HD version TDDI will continue until April, and when the production capacity and supply return to normal in May, the price may return to normal. Focus on manufacturers such as focaltech, Novatek, Himax and Willsemi.

5.2 Risk

(1) The Market Is Sluggish, and Smartphone Oems Continue to Make Inventory Adjustments in February

In February, global smartphone shipments (wholesale) and sales (retail) fell 11% and 5% year-on-year, respectively. Despite the decline in numbers, the smartphone market has improved from January. The total industry inventory balance/change remained negative in February, indicating that major OEMs were still in a state of inventory adjustment in February. In terms of specific companies, Samsung, Xiaomi, Honor and OV have a certain room for inventory optimization, and pay close attention to the risk of changes in their supply chains.

(2) Cut The Order and Price, Pay Attention to the New Changes in the Chip Supply Chain of Auto Companies

Recently, more than 40 auto brands and about 100 models in the domestic market have launched price reduction promotions. Auto companies' price reductions have affected the automotive chip industry, and the trend of cutting orders and prices in the supply chain has become more intense. In addition, as traditional automobiles began to cut orders, originally popular automotive-grade products such as power management ICs, MOSFETs, and MCUs began to face price adjustment risks.

5.3 Policy Trends

In this month, cautiously pay attention to the impact of geopolitical conflicts on the supply chain of the chip industry; the supply chain of new energy vehicles has become the focus of attention of various countries.

Chart 21: List of key policies in the field of components in March

Region	Policy/News	Specific content	Affected manufacturers/supply chain
European Union	Withdraw the 2035 ban on sales of fuel vehicles	Sustain European competitiveness in the automotive and supply chain sectors	Volkswagen, BMW, Mercedes-Benz and Bosch, Continental, Valeo, etc.
U.S.	Chip spending 'guardrail' rules on state	Impose restrictions on the technology of China and other countries in the field of chips and semiconductor equipment	Intel, TSMC, Samsung, GlobalFoundries, ASML, AMAT, Lam, KLA-Tencor, etc.

Region	Policy/News	Specific content	Affected manufacturers/supply chain
Japan	Announced the removal of restrictions on the export of semiconductor technology to South Korea	Lifting Japan's export restrictions on three materials including semiconductor raw materials to South Korea	Samsung, SK Hynix, etc.
	Restrict the export of 23 types of semiconductor equipment	Imports of Chinese chip-making equipment restricted	SMIC, Hua Hong, China Resources Micro and China Micro, etc.
Netherlands	Increase restrictions on the export of manufacturing equipment for advanced processor chips	China's lithography machine imports are restricted	
South Korea	Create a semiconductor industry cluster	$422 billion to be invested in key technologies from chips to electric vehicles by 2026	Samsung, LG, SK Hynix, Hyundai, etc.
Guangdong	Several Policies and Measures for Promoting High-quality Development of Investment Promotion in Guangdong Province	Focus on introducing 20 strategic industrial cluster projects such as semiconductors	Focus on industrial clusters such as semiconductor manufacturing
Shenzhen	Municipal Industry and Information Technology Bureau's Implementation Rules for the Special Support Plan for the Smart Sensor Industry (Draft for Comment)	Shenzhen publicly solicits opinions on the special support plan for the smart sensor industry	Create a smart sensor industry cluster

Source: Chip Insights

6 Summarize

In March, from the demand side, terminal demand represented by consumer goods was in the final stage of destocking, the peak of industry inventory adjustment has passed, and customer inventory has normalized; on the supply side, major manufacturers have adjusted supply, and distributors' inventory It also fell sharply, and it is expected that Q2 will start to recover. In summary, although the overall data is still relatively pessimistic, there are signs of improvement relative to 2022Q4.

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