



HQEWGROUP



Chip Insights

Q1 2023

# **Electronic Components Sales Market Analysis and Forecast**



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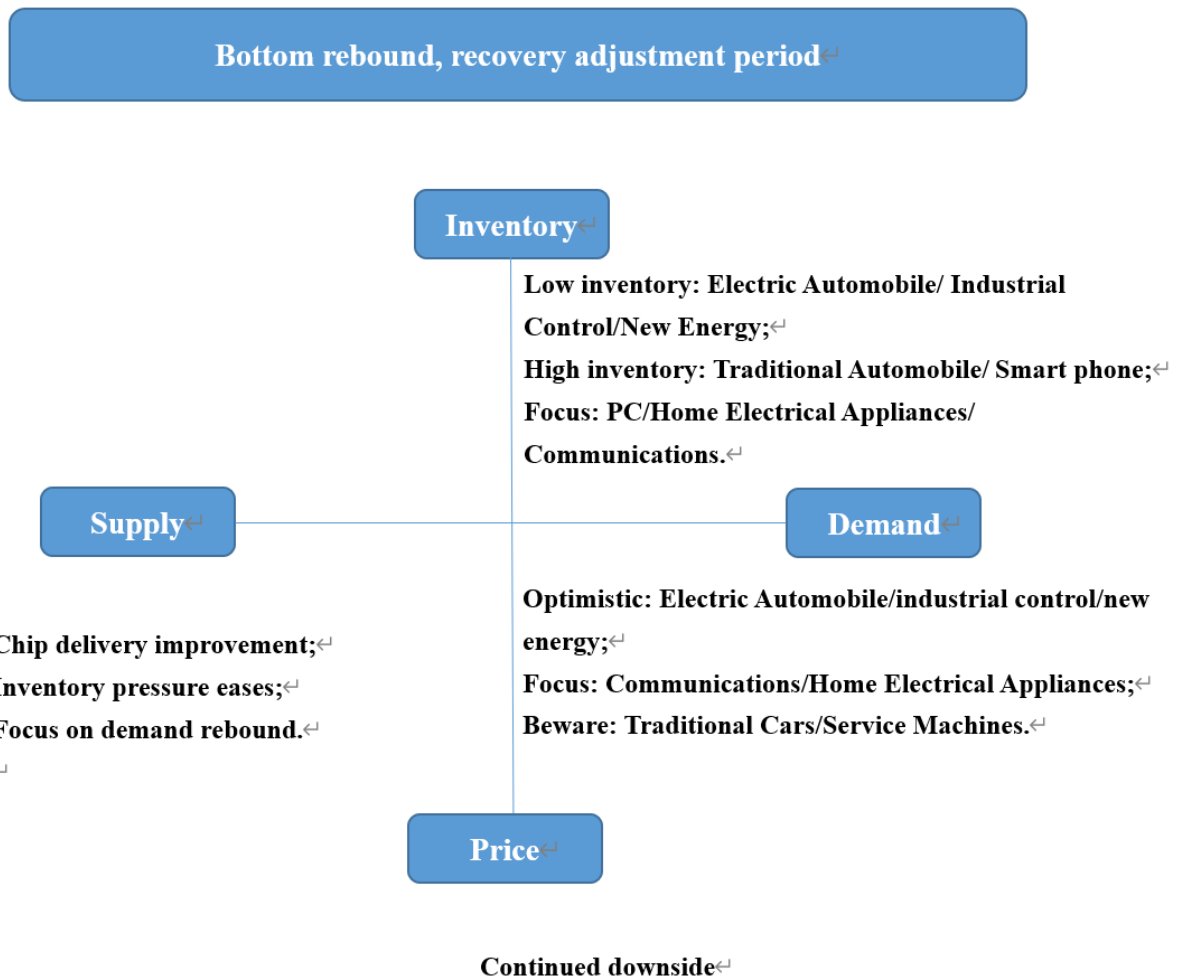


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## Prologue



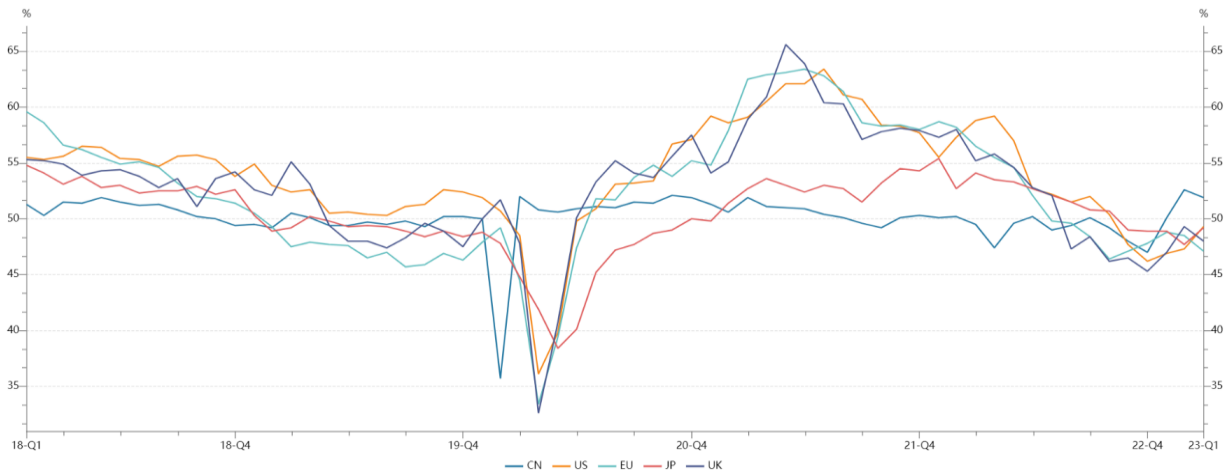
## 1 Macroeconomics and Semiconductor Trade

### 1.1 Macroeconomic Analysis

(1) Global Manufacturing Industry Continues to Hover at A Low Level, Becoming Stable and Weakening

In Q1 2023, the recovery trend of the global economy will be lowered, but except for China, major economies including the United States, the European Union, and Japan are still at a low level, and the recovery momentum is still insufficient.

Chart 1: Manufacturing PMIs of Major Global Economies in Q1



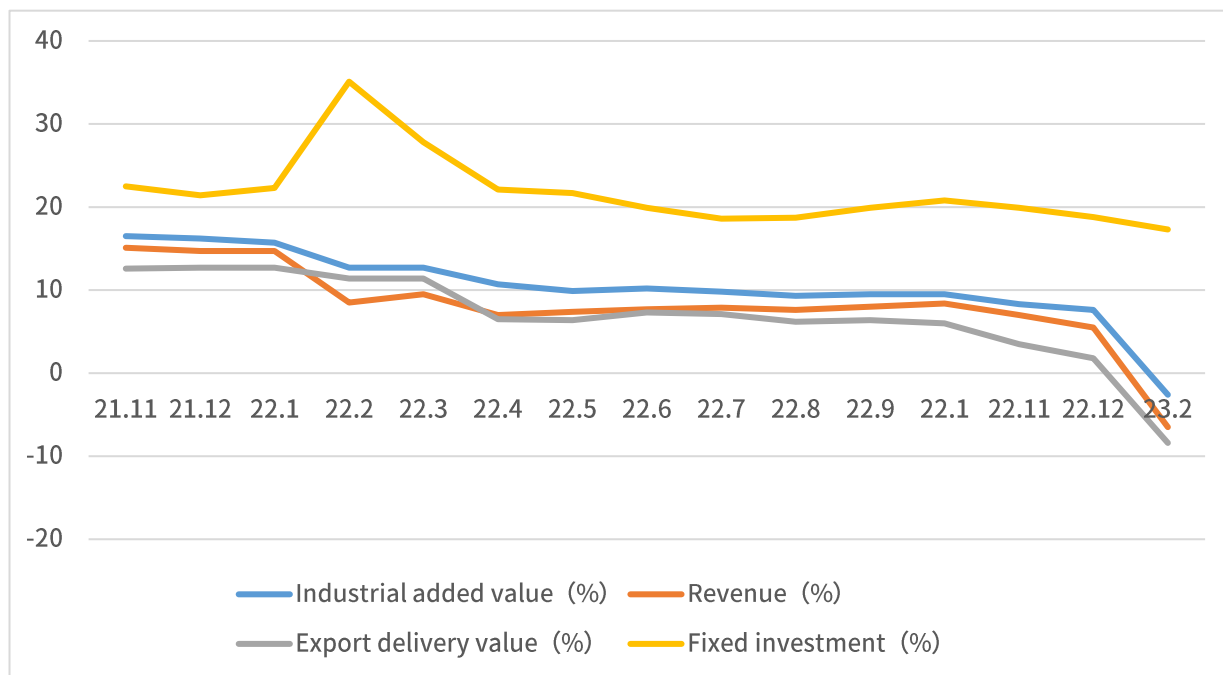
Source: NBSPRC

To sum up, the epidemic is no longer the main factor affecting the recovery of the world economy, but the stability of the supply chain is still not solid.

## (2) 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 2023



Source: MIIT, Chip Insights

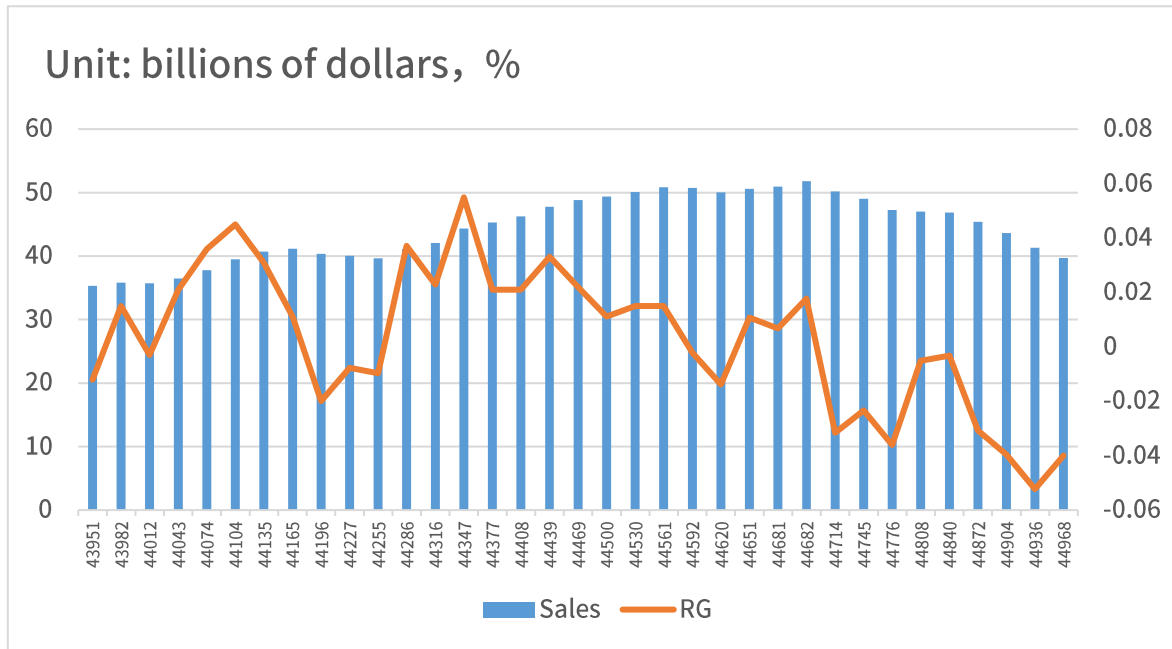
## 1.2 Semiconductor Market Analysis

### (1) Semiconductor Sales Continued to Decline, with China Taking the Lead

In February, the sales volume of the global semiconductor industry was US\$39.7 billion, a month-on-month decline for six consecutive months. The year-on-year decline reached 20.7%, the largest decline since 2009.

Chart 2: Global Semiconductor Industry Sales and Growth Rate in February

2023



Source: SIA, Chip Insights

From a regional perspective, Japan is the only region to achieve growth, while mainland China is the worst performing region, with a year-on-year decrease of 34.2%.

Chart 4: Global Semiconductor Sales by Region in February 2023

(US\$100 million)

Region/Country	January	February	Year-on-year growth (%)
America	116.8	99.5	-14.80%
Europe	45.1	44.7	-0.90%
Japan	38.6	39	1.00%
China	166.7	109.7	-34.20%
Other areas	133.2	103.9	-22.00%
Total	500.4	396.8	-20.70%

Source: SIA, Chip Insights

## (2) The Semiconductor Index Rises, and Confidence is Corrected

From the perspective of the capital market index, the Q1 Philadelphia Semiconductor Index rose by 29.18%, and the China Semiconductor (SW) Industry Index increased by 9.26%. Affected by the recovery of the supply chain, market confidence has rebounded.

Chart 5: Trends of Philadelphia and SWS Index in Q1 2023



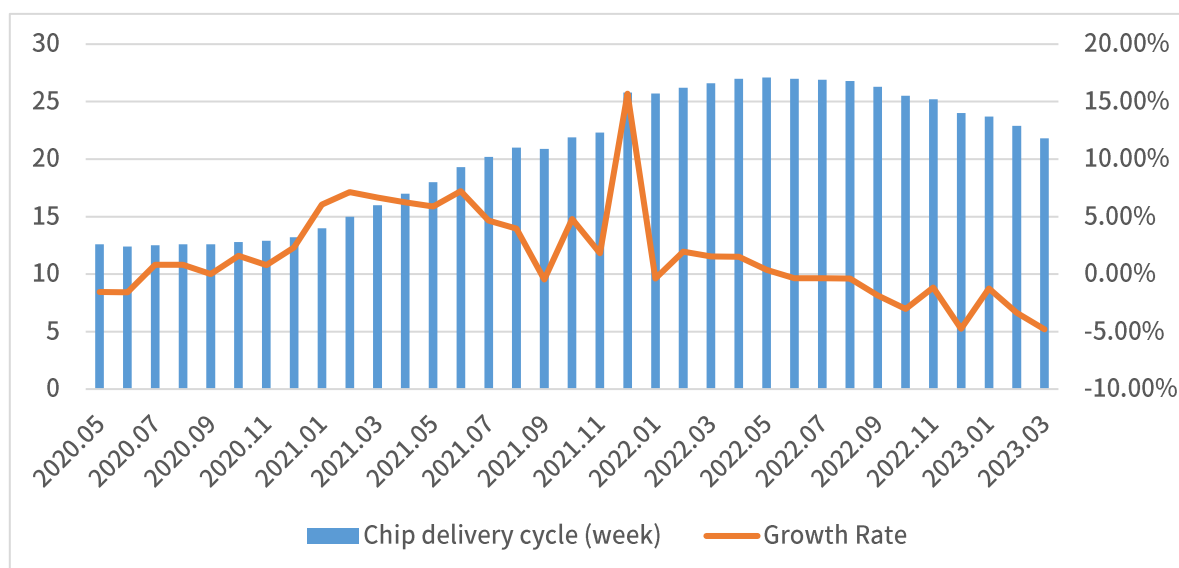
Source: Wind

## 1.3 Chip Delivery Trend

### (1) Chip Delivery Trend

In Q1 2023, the global chip delivery cycle decreased by 8.02% year-on-year, and the extensive supply chain problems are improving significantly, and the chip shortage crisis is expected to end..

Chart 6: Chip Delivery Trends in Q1 2023



Source: Susquehanna Financial Group

## (2) Supplier Delivery Cycle Summary

Looking at the delivery dates and prices of various sub-categories, the overall delivery dates and prices are on an obvious downward trend, including MCU, MOS and other popular categories, and FPGA delivery dates and prices are also tending to be stable.

Chart 7: Key Chip Supplier Chip Delivery List in Q1 2023

Category	Product	Manufacturers	Q1 lead time/week	Q2 delivery trend	Q2 price trend
MCU	8-bit MCU	ST	35-52	decline	Stablize
		Infineon	26-52	Stablize	Stablize
		Microchip	36-52+	decline	rise
		NXP	35-52	decline	Stablize
	32-bit MCU	Renesas	40	decline	rise
		ST	in short supply	rise	rise

Category	Product	Manufacturers	Q1 lead time/week	Q2 delivery trend	Q2 price trend
		Infineon	26-52	decline	Stablize
		NXP	26-52	decline	Stablize
		TI	20-45	decline	Stablize
FPGA	FPGA	AMD (Xilinx)	20-65	Stablize	rise
		Intel (Altera)	30-55	Stablize	Stablize
		Microchip (Microsemi)	32-52+	decline	Stablize
Analog chip	Sensor	AMS OSRAM	8-38	Stablize	Adjust according to the market
		Infineon	18-52	Stablize	rise
		NXP	16-52	rise	rise
		ON Semi	18-52	rise	rise
	switching regulator	Infineon	40-52	Stablize	rise
		ADI	20-35	rise	Stablize
		ON Semi	35-50	Stablize	rise
		ST	40-50	Stablize	Stablize
	signal chain	ADI	20-30	Stablize	rise
		Microchip	30-40	Stablize	Stablize
		ST	28-40	decline	Stablize
	Multi-source analog/power	ON Semi	35-42	Stablize	rise
		ST	40-50	Stablize	Stablize
	eMMC	Samsung	52-54	Stablize	Stablize

Category	Product	Manufacturers	Q1 lead time/week	Q2 delivery trend	Q2 price trend
Memory chip	EEPROM	SK Hynix	8--12	decline	Adjust according to the market
		ST	52-54	Stablize	Stablize
		ON Semi	20-40	Stablize	rise
	SRAM	Infineon	12-52	decline	Stablize
		Microchip	46-48	Stablize	rise
	NAND	SK Hynix	8--12	decline	Stablize
Discrete device	Low Voltage Mosfet	Infineon	26-54	decline	Stablize
		ST	50-54	Stablize	Stablize
		Diodes	26-54	decline	Stablize
	IGBT	Infineon	39-50	Stablize	Stablize
		ST	47-52	Stablize	Stablize
Passive components	Dedicated Capacitor	Murata	16-18	decline	Stablize
		TDK	16-18	decline	Stablize

Source: Future Electronics LTD, Chip Insights

## 1.4 Orders and Inventory Situation

Judging from the market of benchmarking companies with high popularity in Q1, the demand for NXP, ST and Infineon automotive specifications continued to grow, while the demand for industrial control materials slowed down, and consumption materials did not improve.

Chart 8: List of Hot Market Categories and Manufacturers in Q1

Manufacturers	Typical product number	Application field	Remark
TI	MSP, TMS320, etc.	Industrial control, Automobile	Orders decrease, prices return to normal
ST	STM32F series	Automobile	Car specifications are bullish
ADI	LTM series etc.	communication	General material declines
NXP	Vehicle grade FSx, MCFx series, etc. and industrial MK series	Automobile, Industrial	Car specifications/industrial materials are optimistic, Q2 is expected to ease
On Semi	MBRS series	Automobile	Growth in demand for automotive materials
Infineon	SAK series	Automobile	Optimistic about IGBT demand, industrial control is expected to decline
Renesas	R5Fxx/ISLxx and other series	Automobile	Relatively low demand
Microchip	KSZ8999I, PIC32MX795F512, ATXMEGA128 series	Automobile, consumer electronics	Delivery Ease
Lattice	/	communication, data center	Delivery time stabilized
Qualcomm	AR8031-AL3B, AR8035-AL1A-R, etc.	Consumer Electronics	weak overall demand
Broadcom	PLX series and some car specifications, etc.	Automobile, Industrial	Long lead time

*Source: Chip Insights*

From the perspective of corporate orders and actual inventories, the orders and prices of consumer materials continued to fall, the basic demand and prices of conventional materials returned to normal, and the supply and prices of automotive/industrial materials tended to be stable.

Chart 9: Orders and Inventories of Top Companies in Q1

Company	Q1 order status	Q1 Inventory	Q2 Pricing Trend
Intel	decline	generally	Adjust according to the market
AMD	decline	generally	Stablize
Samsung	decline	generally	decline
Ti	decline	lower	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	Stablize	Low	rise
Infineon	Stablize	generally	rise
Renesas	Stablize	generally	Adjust according to the market
On Semi	Stablize	lower	rise
Microchip	Stablize	generally	Stablize
Micron	decline	generally	decline
MediaTek	decline	generally	decline

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

*Source: Chip Insights*

## 2 Semiconductor Supply Chain

The peak of inventory reduction in the supply chain has passed, and the industry's prosperity has turned slowly but steadily.

### 2.1 Semiconductor Upstream Manufacturers

## (1) Silicon Wafer/Equipment

In Q1 2023, the demand for equipment and wafer materials will enter a downward cycle.

Chart 10: Orders from Semiconductor Equipment and Silicon Wafer Head

### Companies in Q1

Type	Enterprise	Q1 order	Q1 inventory	Q2 Order Forecast
Equipm ent	ASML	Stablize	generally	Adjust according to market conditions
	AMAT	Stablize	Low	Stablize
	Lam	Stablize	generally	Adjust according to market conditions
	TEL	Stablize	generally	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
	WAFER WORKS	decline	higher	decline
	National Silicon Industry Group	Stablize	generally	decline

Source: Chip Insights

## (2) Fabless/IDM

In Q1 2023, the original factory orders will weaken, but the expansion trend will not decrease.

**Chart 11: Major Fabless/IDM latest developments in Q1**

Category	Manufacturer	Q1 News
Downsizing	Intel	Announce layoffs and pay cuts
	Qualcomm	Israel starts new round of layoffs
	IBM	Customer cut orders increased
	Micron	Singapore began to lay off staff, and the proportion of global layoffs increased to 15%
	Marvell	320 U.S. layoffs in response to industry slowdown
price	Samsung	Chip prices fall more than expected
	MediaTek	The price of 5G chips dropped to \$18; some driver ICs increased by 10-15%
Expansion	Intel	Increase investment in Vietnam by US\$1 billion
	TI	The second fab was built in Utah, USA; the second sealing and testing plant in Chengdu may be put into production within this year
	ADI	\$1 billion to upgrade Oregon semiconductor plant
	TOSHIBA	Expansion of power semiconductor production capacity
	ST	In 2023, it plans to invest about US\$4 billion to expand wafer production capacity
	Infineon	Germany's 300mm fab was approved to start early; silicon carbide production capacity will increase by 10 times in 2027
	Renesas	Consider expanding chip production capacity outside Japan
	Microchip	Invest 880 million US dollars to expand the silicon carbide 8-inch wafer factory; Oregon invests 800 million US dollars to expand

Category	Manufacturer	Q1 News
		production, and the production capacity of MCU and analog products will be tripled
	Rapidus	A semiconductor factory will be built in Hokkaido
	Yageo	MLCC production capacity is expected to increase by 10% next year
	Murata	Caen, France builds a new 200mm wafer production line
	TAIYO YUDEN	Yawata MLCC material barium titanate new factory completed
Order	TI	Customer cut orders increased
	Samsung	The semiconductor business has lost 3 trillion won from January to February
	ON Semi	Signed a long-term SiC chip supply contract with BMW; signed a silicon carbide technology cooperation agreement with Volkswagen
	Samsung	SoC will be supplied to BMW; plan to reduce purchase of silicon wafers
mergers and acquisitions	Western Digital Corp	Restart the M&A transaction negotiations with Kioxia
	Infineon	Sold HiRel DC-DC converter business
	Broadcom	Acquisition of VMware deal extended
	ON Semi	Completed acquisition of GlobalFoundries 300mm East Fishkill New York factory and manufacturing facility
	Ouster	Merger with Velodyne completed
	Renesas	Announced Acquisition of NFC Company Pantronics
	TOSHIBA	Accepted JIP's 2 trillion yen takeover offer
	Howay	Acquired SITcores to increase automotive semiconductor business
	Huawei	Basically realized the localization of EDA tools above 14nm

Category	Manufacturer	Q1 News
Domestic substitution	HiSilicon	Hisilicon mobile phone chip market share fell to 0%
	Gigadevice	The introduction of products such as car-grade MCUs into the supply chain is accelerated

Source: Chip Insights

### (3) Foundry

In Q1 2023, under the stimulation of downstream inventory adjustment, the OEM side will face the pressure of cutting orders and reducing prices.

Chart 12: The Latest Developments of Major Wafer Foundries in Q1

Manufacturers	Q1 capacity utilization rate	Q1 Dynamics	Q2 price trend
TSMC	70%-90%	Cancellation of purchases, reduction of orders, and slowdown of production expansion	decline
Samsung	85%<	Cut prices to grab orders and reduce investment	decline
UMC	70%	Decline in revenue, decline in orders, reduction in production capacity	decline
SMIC	70%-80%	Capital increase and production expansion	decline
GlobalFoundries	90%<	Conservative decision	Stablize
VIS (Vanguard International Semiconductor)	50%-60%	Lower quotes, lower payouts	decline
PSMC	60%-70%	Customer default, production capacity down	decline

Source: Chip Insights

## (4) OSAT

In Q1 2023, the industry continues to be in a low economy, and the high-end packaging and testing of Chiplets is the focus..

Chart 13: Dynamics of Major OSAT Manufacturers in Q1

Manufacturer	Q1 Capacity Utilization Rate	Q1 Dynamics	Q2 Order Forecast
ASE	80%<	Revenue cuts, optimistic about high-end packaging and testing	decline
JCET	80%-85	Chiplet series technology achieves mass production	decline
Tongfu Microelectronics	80%-90%	AMD orders accounted for more than 80%	decline
H T-Tech	80%<	Chiplet technology has been mass-produced	decline
Chippacking Technology	80%-90%	Loss in 2022	decline
Small and medium OAST	40%-60%	Low prosperity, or welcome the wave of mergers and acquisitions	decline

Source: Chip Insights

## 2.2 Distributor

The industry expects the destocking of the industry to be completed in the second half of 2023.

Chart 14: Major Component Distributor Update in Q1

Manufacturer	Q1 Dynamics
Arrow	Asia-Pacific revenue decline in 2022

Manufacturer	Q1 Dynamics
WINTech	Expected demand callback in the second half of 2023
WPG	It is estimated that the downstream inventory will stabilize in Q2; 650 million NT dollars will be acquired to expand the layout of passive components by acquiring VSELL
Mouser Electronics	Signed a global distribution agreement with Xvisio Technology
Future Electronics	Significantly shorter lead times for most product categories
CECport	successfully listed
Shenzhen Huaqiang	In 2022, the deduction of non-net profit will be 961 million yuan, a year-on-year increase of 10.76%
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
Icbase	Mass production of a variety of self-developed MCU chips

Source: Chip Insights

## 2.3 System Integration

In Q1 2023, the demand for industrial control is stable, the traditional tier1 accelerates the transformation of electrification, and the overseas deployment of consumer manufacturers accelerates.

Chart 15: Major System Integrators Update in Q1

Category	Manufacturer	Latest News in Q1
Industrial control	ABB	Increase the price by 3%-10% from February 10
	DELIXI	Product increase by 1%-11%
	Schneider	The fifth largest R&D center in China opened in Wuxi, focusing on automation

Category	Manufacturer	Latest News in Q1
	Inovance Technology	In 2022, industrial robot sales orders will achieve more than 50% growth
	Rockwell	Acquired Knowledge Lens, a service and solutions provider
Automobile	Hyundai mobis	In the next three years, the investment in mobile travel solutions will exceed 53 billion yuan
	Magna International	Invest nearly 700 million US dollars to expand the production of electric vehicle related products
	Robert Bosch	New energy vehicle core components and autonomous driving R & D and manufacturing base laid foundation in Suzhou
	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	Plans to build a chip factory in Saarland, Germany
	Borg Warner	\$500 million investment in Wolfspeed
Consumer Electronics	Wingtech	Actively deploy new energy fields
	Huaqin	Focus on smart hardware and try to enter the automotive electronics market
	Luxshare	The medium and long-term goal is to become Tier 1 of auto parts
	GoerTek	Smart wearable products are the company's established strategic direction
	Foxconn	Expansion to Southeast Asia in 2023
	Pegatron	Plans to open second factory in India

Source: Chip Insights

## 2.4 Terminal Application

### (1) Consumer Electronics

In Q1 2023, the demand for consumer electronics is still sluggish, but the recovery is rapid.

Chart 16: Consumer Electronics Manufacturers Latest News in Q1

Category	Enterprise	News in Q1
Smart Phone	Apple	From January to February, surpassed Samsung to become the world's largest mobile phone manufacturer
	Samsung	Smartphone shipments will drop by 4.1% in 2022, and this year's shipments may be lower than last year's level
	Huawei	The downward trend of the consumer terminal business has slowed down; the market share of folding screen mobile phones is No. 1 in China
	MI	In 2022, the gross profit margin of smartphones will drop to 9%; or will obtain the production qualification of new energy vehicles
	Oppo	Shrink business in Germany and the UK; self-developed mobile phone AP or mass production by the end of the year
	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	Integrate its iQOO to start cost reduction and efficiency increase
PC	Lenovo	PC shipments in 2022 will be 69 million units, down 17.3% year-on-year
	HP	HP Outsources PC Baseband Chip Orders Shuffle
	ASUS	PC inventories have already begun to decline
	Dell	PC inventory increased; about 6,650 jobs to be cut

Category	Enterprise	News in Q1
VR/AR	Meta	Acquired smart lens provider Luxexcel to strengthen AR business
	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) Automobile

In Q1 2023, the price of traditional fuel vehicles will be reduced and promoted, and attention will be paid to the reshuffle period of the auto industry and changes in the supply chain.

Chart 17: Auto Manufacturer Update in Q1

Manufacturers	News in Q1
BYD	Vietnam plans to set up an auto parts factory; all new cars will use NVIDIA Drive Orin chips
Tesla	The next-generation platform reduces the amount of silicon carbide used by 75%; plans to expand the Texas super factory by US\$776 million
Hyundai	Signed semiconductor outsourcing design and foundry contract with Samsung Electronics
Shanghai Volkswagen	This year, 25,000 new charging piles will be built; the new energy vehicle model base will be settled in Foshan
BMW	The proportion of electric vehicles will reach 50% by 2030
Benz	China will be one of the fastest growing markets in the next 10 years, continue to expand investment in China
Toyota	Planned investment in pure electric vehicles including batteries exceeds 4 trillion yen

Manufacturers	News in Q1
GAC Aian	In 2023, the sales target of 500,000 vehicles will be hit; the cooperation project with Huawei will become self-developed
Gellyauto	New energy sales in 2023 will double compared to 2022
Chery	Official drop up to 9000 yuan
NIO	Planning to build a new 40GWH capacity battery factory in Hefei
Xpeng Inc	P7i electronic control is exclusively supplied by Inovance Technology; the target is to deliver 450,000 new cars in 2023
LEADING IDEAL	A total of more than 300,000 vehicles have been delivered
DENZA	From March 1st, Tengza D9 will increase by 6,000 yuan
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 Q1 2023, the industrial control market demand will maintain a steady growth trend.

Chart 18: Industrial Control Manufacturers Latest News in Q1

Manufacturers	News in Q1
Schneider	Will invest 16 billion to build a new factory in Hungary
Mitsubishi Electric	A new semiconductor factory will be built in Japan
Honeywell	\$505 million sale of its power conversion division; COMAC Excellent Quality Award
Xinje Electric	The company's business involves intelligent manufacturing

Manufacturers	News in Q1
INVT	1.05 billion yuan is planned to invest in the third phase of INVT Suzhou Industrial Park
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	Orders from traditional car companies such as GAC and Chery began to increase
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 Q1 2023, continue to pay attention to the progress of overseas market demand.

Chart 19: Photovoltaic Manufacturers' Latest News in Q1

Manufacturers	News in Q1
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	Adequate orders and full capacity utilization
GoodWe Technologies	Products focus on the European market
INVT	In 2022, the company's photovoltaic business will be mainly domestic, with domestic and overseas accounting for half and half in the first two months of this year
Huawei	Photovoltaic inverter market share will reach 24.7% in 2022

Manufacturers	News in Q1
Deye Technology	The annual output of 680,000 sets of inverter series projects has been postponed; the company's IGBT localization rate is about 50%
Growatt	In 2022, the company's photovoltaic inverter shipments will be 930,520 units; overseas factories will be located in Vietnam
Chint	2023 module shipment target 30GW, 2025 production capacity 70GW
Tebian Electric	It is planned to invest 4 billion yuan in the construction of household distributed photovoltaic projects

Source: Chip Insights

## (5) Energy Storage

In Q1 2023, focus on opportunities in the domestic industrial and commercial energy storage industry chain.

Chart 20: Energy Storage Manufacturer Update in Q1

Manufacturers	News in Q1
Sungrow Power Supply	In 2023, the shipment of large-scale storage is expected to be 15GWh, and the shipment of household energy storage inverters is about 700,000-900,000 units
KSTAR	In 2023, energy storage revenue will be raised to 4.5-5 billion yuan
SINENG ELECTRIC	The energy storage converter market is the largest in China in terms of shipments; the US market is being explored
Clou Electronics	Midea's Acquisition Uncertainty Increases
Zhongtian	Energy storage orders exceeded 2.1 billion yuan in the first two months
Hoymiles	The main markets for energy storage are in Europe, the Asia-Pacific region, and the US market layout
Deye Technology	The company's shipments of 15KW and above products in the US market accounted for about 20%

Manufacturers	News in Q1
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 Q1 2023, the growth rate of the server market is lower than expected, and uncertain risks increase.

Chart 21: The Latest Developments of Server Manufacturers in Q1

Manufacturers	News in Q1
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
Google	Plan to develop self-developed server chips
Wingtech	Server products are already in customer testing, business is still early

Source: Chip Insights

## (7) Communications

In Q1 2023, 5G construction will enter a stable period and focus on the development of 5G +/6G technology.

**Chart 22: The Latest Developments of Communication Manufacturers in Q1**

Company	Latest News in Q1
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	8,500 layoffs will be laid off in stages around the world
Samsung	Announcement of standardized 5G NTN technology

*Source: Chip Insights*

## 3 Distribution and procurement opportunities and risks

### 3.1 Opportunities

In Q1 2023, focus on recovery opportunities in the consumer market.

**Chart 23: Segmentation Opportunities Focus in Q1**

Product	Development prospect	Related companies
in-vehicle cameras	The scale of China's automotive ADAS cameras can reach 25 billion yuan	Bosch, Valeo, TTE, Desay SV, etc.
Driver IC	The driver IC market is expected to recover in the second half of the year	Samsung, Magna, RAYDIUM, Chipone North, etc.

Product	Development prospect	Related companies
Computing chips	ChatGPT's popularity increases the demand for computing power chips	Nvidia, Qualcomm, Samsung, Huawei, etc.
car panel	Automotive panel shipments will exceed 200 million units in 2023	Samsung, BOE, Tianma and Chipone North, etc.
smart home	The scale of smart home devices may exceed 279 billion in 2026	Apple, Samsung, Huawei, Xiaomi, etc.
foldable phone	Global foldable phone shipments may reach 19 million units in 2023	Samsung, Huawei, BOE, Tianma, etc.
SiC Power Devices	SiC power devices will exceed 2.2 billion in 2023	ST, ON Semiconductor, Infineon and BYD Semiconductor, etc.

Source: Chip Insights

## 3.2 Risk

In Q1 2023, potential risks in the automotive supply chain deserve attention.

Chart 24: Market Segment Risk Warning in Q1

Product	Risk Warning	Related companies
AR/VR equipment	Shipments of AR/VR devices to decline by 12% in 2022	Meta, Huawei and Goertek
storage	Samsung's chip division's Q4 profit plummets by 90%	Samsung, SK Hynix, CXMT, YMTC, etc.
MCU	Consumer MCU price cuts to reduce inventory	ST, NXP and Nuvoton, Generalplus, Sonix, GigaDevice, etc.
MLCC	The production capacity of passive component manufacturers has been reduced	TAIYO YUDEN, Murata, Yageo, etc.
mobile phone OEM	Handset OEMs continue to make inventory adjustments	Samsung, Xiaomi, Wingtech, Huaqin, LongQi Scientific, etc.

Product	Risk Warning	Related companies
PMIC, MOSFET, MCU, etc.	The chip supply chain of car companies may be caught in a price cut	TI, NXP, ST, etc.

*Source: Chip Insights*

## 4 Summarize

In Q1 2023, the destocking of the industry accelerated, the inventory pressure eased, and some terminal demand showed signs of recovery. The industry as a whole is in the throes of transitional adjustment, and the recovery cycle may be earlier than expected. Careful attention should be paid to terminal demand and marginal changes in inventory of leading manufacturers.

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