

United States Semiconductor Memory - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2024 - 2029)

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Abstracts

The United States Semiconductor Memory Market size is estimated at USD 24.70 billion in 2024, and is expected to reach USD 37.70 billion by 2028, growing at a CAGR of 16.51% during the forecast period (2024-2028).

Semiconductor memory is an integral part of today's digital world as it is widely used as data storage devices in consumer, industrial, and commercial electronic devices. As demand from various industries and application areas varies significantly, different semiconductor memory devices, including DRAM, SRAM, and Flash, are available.

The United States is anticipated to remain among the major markets for semiconductor memories, as the country has the highest penetration of digital technologies and electronic devices that require memory devices for data storage/processing. For instance, according to estimations by GSMA, by 2025, mobile subscribers in North America are anticipated to grow by nearly 12 million, wherein the United States will account for three-quarters of new subscribers.

The United States has a large and established industrial sector, wherein the adoption of factory automation and industrial control solutions has remained high. With the recent trend shift in the industrial sector, wherein trends such as "Industry 4.0" continue to increase, the adoption of advanced industrial automation solutions, such as IIoT and industrial robots, continues to rise, which is creating a supportive ecosystem for the studied market to thrive, as memory devices are widely used in the supporting IT infrastructure of automation systems.

In recent years, the US government has been taking several initiatives to promote the

growth of its local industries as the US-China dispute intensifies. The impact of such trends is relatively higher in the semiconductor segment as the US government aims to have a higher command over the semiconductor industry supply chain. This is also anticipated to support the market's growth by encouraging the vendors to invest in enhancing their memory production capabilities.

However, the market's growth is challenged significantly by the growing complexity of the semiconductor memory manufacturing process as advanced nodes continue to increase. The escalating trade dispute with China is expected to affect the semiconductor industry's supply chain in the United States, which could harm the growth of the semiconductor memory market. For instance, in 2023, the Chinese government restricted importing crucial semiconductor chip manufacturing materials, including gallium and germanium.

The changing macroeconomic conditions, especially since the pandemic outbreak, are also challenging the market's growth as the demand for memory chips remains unstable owing to a slowdown in demand from various end-user industries. For instance, in the United States, consumer electronic device sales were expected to decline in 2023 after reporting a similar trend in 2022.

United States Semiconductor Memory Market Trends

Recent Initiatives by the US Government to Drive the Market's Growth

The United States has traditionally been among the leading consumer and producers of semiconductor chips. However, the last decade has witnessed a shift in the trend, with several US-based chipmakers shifting their production base to China due to cheap labor availability. However, the growing demand for semiconductor chips and the United States' ongoing dispute with China has forced the government to rethink its strategy and promote its local semiconductor industry ecosystem, creating a favorable outlook for the market's growth.

Also, the decreasing share of US-based vendors in the global semiconductor design industry has forced the government to take several initiatives. For instance, according to the Semiconductor Industry Association, the share of US-headquartered vendors in the global semiconductor chip design industry is anticipated to decline to 36% by 2030, compared to 50% in 2000.

For instance, in February 2024, the US government announced its intentions to invest

over USD 5 billion in semiconductor-related R&D and workforce needs, including in the National Semiconductor Technology Center (NSTC), to advance the government's aim of driving semiconductor-related R&D in the United States.

In recent years, the US government took several other initiatives, including bipartisan, to create helpful incentives to support the CHIPS Act of 2022, which aims to tackle some of the most significant manufacturing and innovation challenges of recent times.

According to the government, the act will invest USD 50 billion through the Department of Commerce's CHIPS for America Fund to support the local semiconductor industry.

According to the US Department of Commerce's National Institute of Standards and Technology, out of the allocated USD 50 billion for the CHIPS act, about USD 28 billion is anticipated to be spent on large-scale investments in leading-edge semiconductor manufacturing, while USD 10 billion is for new manufacturing capacity for mature and current-generation chips.

Such initiative drives leading semiconductor companies to increase their investment in the country. For instance, in April 2024, SK Hynix announced its plan to invest USD 3.87 billion to establish its first chip packaging facility in the country. The facility is planned to start its operation in 2028.

The Consumer Products Segment to Witness Significant Growth

The United States is among the leading markets for consumer electronic products as the penetration of daily household consumer devices is high compared to developing regions. A larger size of a digitally aware consumer base, along with the availability of supporting infrastructure such as cellular/broadband connectivity, further supports this trend.

In the United States, over 90% of the population has broadband. The US government has taken several initiatives to make broadband connectivity universal in recent years. For instance, in June 2023, the US government announced USD 42 billion in funding to be distributed among the nation's 50 states and US territories to make high-speed broadband accessible by 2030.

In recent years, the proliferation of smart home devices has increased among US consumers. As smart home devices offer innovative features, they add significant value

to the consumer's day-to-day life. According to the Consumer Technology Association (CTA), the revenue through the sales of emerging technology devices such as OLED TVs, portable gaming consoles, smart light bulbs, and augmented reality headsets/eyewear in the United States was anticipated to reach USD 8.6 billion in 2023 in the United States, compared to USD 5.1 billion in 2021.

Wearable technology is also witnessing significant growth in the consumer segment as devices such as smartwatches and smart glasses, among others, have gained widespread acceptance across various consumer segments. Hence, the growing demand for wearable devices is also expected to support the market's growth. For instance, according to CTA, the sales of wearable devices in the United States were anticipated to reach USD 13.8 billion in 2023, compared to USD 7.7 billion in 2018.

United States Semiconductor Memory Industry Overview

The US semiconductor memory market is fragmented as the number of players in the memory market has been increasing, driven by a growing demand and a favorable regulatory environment. Considering the growing competition, vendors in the market are continuously adopting innovative business strategies such as expansion, adoption of new technologies, partnerships, and acquisitions. Some key market players include Micron Technology Inc., Samsung Electronics Co. Ltd, Alliance Memory, and Microchip Technology.

August 2023: Samsung Electronics announced the development of 32-gigabit (Gb) DDR5 DRAM. According to the company, the new DRAM is based on 12 nanometers (nm)-class process technology. It is anticipated that the development of DRAM modules of up to 1 terabyte (TB) will be facilitated to serve the growing need for high-capacity DRAM in the era of AI and big data.

August 2023: NVIDIA launched the next-generation NVIDIA GH200 Grace Hopper platform. According to the company, the platform comprises 282GB of the latest HBM3e memory technology. It delivers up to 3.5 times more memory capacity and three times more bandwidth to support advanced applications such as generative AI.

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Contents

1 INTRODUCTION

- 1.1 Study Assumptions and Market Definition
- 1.2 Scope of the Study

2 RESEARCH METHODOLOGY

3 EXECUTIVE SUMMARY

4 MARKET INSIGHTS

- 4.1 Market Overview
- 4.2 Industry Attractiveness - Porter's Five Force Analysis
 - 4.2.1 Bargaining Power of Suppliers
 - 4.2.2 Bargaining Power of Buyers
 - 4.2.3 Threat of New Entrants
 - 4.2.4 Threat of Substitute Products
 - 4.2.5 Intensity of Competitive Rivalry
- 4.3 Technology Snapshot
- 4.4 Industry Value Chain Analysis
- 4.5 Impact of Macroeconomic Factors on the Market

5 MARKET DYNAMICS

- 5.1 Market Drivers
 - 5.1.1 Recent Initiatives by the U.S. Government to Drive the Chip Production Industry
 - 5.1.2 Increasing Use & Interest in Smart Devices
- 5.2 Market Restraints
 - 5.2.1 Increasing Fabrication Complexity & Time Involved

6 MARKET SEGMENTATION

- 6.1 By Type
 - 6.1.1 DRAM
 - 6.1.2 SRAM
 - 6.1.3 NOR Flash
 - 6.1.4 NAND Flash

6.1.5 ROM & EEPROM

6.1.6 Other Types

6.2 By Application

6.2.1 Consumer Products

6.2.2 PC/Laptop

6.2.3 Smartphone/Tablet

6.2.4 Data Center

6.2.5 Automotive

6.2.6 Other Applications

7 COMPETITIVE LANDSCAPE

7.1 Company Profiles

7.1.1 Micron Technology Inc.

7.1.2 Microchip Technology Inc.

7.1.3 Samsung Electronics Co. Ltd

7.1.4 STMicroelectronics NV

7.1.5 Infineon Technologies AG

7.1.6 Analog Devices Inc.

7.1.7 Alliance Memory Inc

7.1.8 Kioxia America Inc.

7.1.9 Fujitsu Semiconductor Memory Solution (Fujitsu Ltd)

7.1.10 SK Hynix Memory Solutions America Inc.

7.1.11 ROHM Semiconductor

7.1.12 Neo Semiconductor

8 INVESTMENT ANALYSIS

9 FUTURE OUTLOOK OF THE MARKET

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