

Japan DRAM - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The Japan dynamic random access memory (DRAM) market was valued at USD 3.35 billion in the current year and is expected to register a CAGR of 3.45%, reaching USD 3.97 billion over the forecast period.

Key Highlights

- The growing adoption of smartphones, PCs, and laptops in the country has increased the development of DRAM, which could reduce the boot-up time and enhance the memory space to offer higher performance.
- According to the Japan Smartphone Security Association (JSSEC), the monthly domestic shipment volume of mobile phones in the country was 1.42 million units in July 2022, which was 0.68 million units in May 2022. Further, 5G-enabled smartphones need more memory compared to previous generations. Thus, the increasing implementation of 5G contributes to market growth.
- Consumer products, such as cameras and tablets, sensors and industrial equipment, medical devices, and automotive systems, rely on DRAM flash memory embedded alongside processors to store data and the code they execute. However, data centers use DRAM flash memory for its near real-time response to read/write requests and high data transfer speed. DRAM storage trends are likely to continue to evolve as demand increases for large-scale data processing for artificial intelligence and machine learning applications.
- The advances in technology, increasing population, rise in per capita income, and easy availability of high-speed internet have increased the adoption of smartphones and advanced consumer electronics in the country. Therefore, the growing production of smartphones, tablets, laptops, and others with high processing and enhanced memory capabilities is expected to propel the Japanese dynamic random access memory (DRAM) market.
- Overall, the rising data centers and automotive sectors are expected to create massive demand for the Japanese dynamic random access memory (DRAM) market. The demand from the consumer electronics sector is expected to be constant during the forecast.

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-With the increased memory requirements in gaming, automotive, healthcare, telecommunication, and, more importantly, with growth drivers like 5G and artificial intelligence (AI), the companies have been focusing on new and innovative DRAM products. In June 2022, Micron Technology announced its plan to mass-produce advanced DRAM memory chips at its Hiroshima plant. The company would be manufacturing its '1-Beta' Memory Chips in Japan.

-Moreover, in November 2022, Micron announced to start of mass production of its new high-capacity, power 1-beta dynamic random access memory (DRAM) chips at its plant in Hiroshima, Japan. The company has also received USD 320 million from the Japanese government to make advanced chips.

Japan DRAM Market Trends

Automotive Sector Holds Significant Market Share

- The country's growing demand for electric vehicles, SUVs, and light commercial vehicles will boost the demand for Japan's dynamic random access memory (DRAM) market. The government is dominated by various domestic brands such as Honda, Toyota, Suzuki, Mitsubishi, and Nissan.

- The proliferation of electric vehicles and the rapid advancement of infotainment systems are causing the semiconductor automotive platform to face a paradigm shift. Advanced features in infotainment systems like high-definition maps, video streaming, and 3D gaming, coupled with soaring demand for ADAS, are expected to significantly drive the demand for high-capacity, high-performance solid-state drivers (SSDs), and graphics DRAM throughout the automotive industry during the forecast period.

- The Japan dynamic random access memory (DRAM) market has witnessed high demand from the automotive industry during the forecast period. One of the major factors driving the demand is the growing emphasis on autonomous driving technologies with built-in 5G infrastructure. For example, Tesla has adopted Nvidia's CPU and GPU solutions, which drove them to incorporate GDDR5 DRAM products.

- Furthermore, the advent of the Internet of Things (IoT) in the automotive industry has become a prominent hotspot for multi-purpose applications. From connected vehicles to automated transport systems, the role of IoT is expected to open up significant opportunities for the Japan DRAM market in the automotive market.

- Several automobile manufacturers are expanding their production facilities in Japan to meet the growing demand and stay ahead of the competition. For instance, in July 2023, BYD announced it to expand its footprint in Japan's passenger vehicle market. The company will offer the Atto 3 model. BYD Atto 3 is expected to go on sale in January 2023. The second model is the BYD Dolphin, scheduled to be released in mid-2023, and the third model is the all-new BYD Seal, expected to be released in late 2023.

- Moreover, according to data published by the Automobile Manufacturers Association, in FY 2023, in Japan, car Production increased to 6,31,022 Units in February 2023. The maximum volume was 9,61,994 Units, and the minimum was 2,49,772 Units. Such a rise in automobiles is likely to bring the high demand for DRAM in the Japanese automobile market.

Growing Number of Data Centers and Servers Will Boost the Market

- Dynamic random access memory DRAM is an essential component for the proper functioning of modern enterprise and data center applications; the growing data centers in Japan have significantly fueled the demand for the market. An increasing number of data centers utilize cloud computing, virtualization, and software-defined server technology, so the time between power failure and startup of the backup generator has shortened.

- The Internet of Things IoT technology and big data will increase investment in the data center, further creating new growth opportunities for Japan's dynamic random access memory (DRAM) Market. Japanese companies are experiencing massive data

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generation across all industries, including healthcare, banking, financial services, and insurance (BFSI), IT and telecom, and government & defense. The growth of cloud computing, increased penetration by foreign cloud providers, and increased investments by domestic players are some of the major factors driving the market growth.

- The increase in new mobile computing devices has led to the rise in the utility of data centers among various organizations. Further, many vendors in the market are establishing new data centers, driving the studied market. For instance, In April 2023, Datadog, Inc. announced to launch of its new data center in Tokyo, Japan. This new data center in Japan will help the company and its customers comply with local data privacy and security regulations by processing and storing data locally.
- Similarly, in January 2023, Optage Inc. announced plans to construct a new data center in Osaka, Japan. The facility is located in the Higashi-Umeda district, covers an area of 2,250 square meters, and has 14 floors.
- In order to cater to such requirements, vendors are releasing new products to remain competitive in the market. For instance, in May 2022, Samsung Electronics announced the development of DRAM memory technology based on the Compute Express Link to upgrade the performance of the data centers. The DDR5 is designed to support the CXL interface, which is an open industry-standard interconnect based on the PCI Express (PCIe) 5.0 interface that is designed to enable the data centers with high-speed and low latency communications between the processor, host, and the devices such as memory buffers, accelerators, input and output devices.
- Moreover, with the growing government initiative in the country, the demand for Japanese dynamic random access memory (DRAM) has also been increasing at a similar rate. For instance, in August 2022, the Japanese Government announced plans to build several new data centers across the country along with decentralizing landing bases for submarine cables to diversify landing points. Through this, the Government aims to reduce the disparity between rural and urban areas and provide greater resilience against natural disasters or potential sabotage.

Japan DRAM Industry Overview

The dynamic random access memory (DRAM) market in Japan is characterized by moderate consolidation, with numerous key players vying for an increased market share. Prominent companies such as Samsung Electronics, SK Hynix, and Winbond, among others, play a pivotal role in shaping the industry. Their commitment to incessant innovation, underpinned by substantial investments in research and development, has facilitated their attainment of a competitive edge over their peers.

In January 2023, SK Hynix unveiled its LPDDR5T DRAM, representing a noteworthy advancement over the existing LPDDR5X technology. This innovative LPDDR5T technology is well-suited for diverse applications, including artificial intelligence, smartphones, virtual and augmented reality, and machine learning.

In December 2022, Samsung Electronics Co., Ltd. introduced its 16-gigabit (Gb) DDR5 DRAM. This cutting-edge DRAM is crafted utilizing the industry's first 12nm class process technology, making it highly suitable for enhancing sustainability in operations, especially in data centers, next-generation computing, and AI-driven systems.

In May 2022, Transcend Information, Inc. (Transcend), a renowned manufacturer of memory and digital storage products, announced the availability of its next-generation DDR5 DRAM modules, specifically designed for both business and personal computers. These DDR5 memory modules from Transcend surpass JEDEC standards in terms of speed, capacity, and reliability, ushering in groundbreaking performance in applications such as the metaverse, high-performance computing (HPC), and the virtual economy.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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Table of 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 Value Chain Analysis

4.3 Industry Attractiveness - Porter's Five Forces Analysis

4.3.1 Bargaining Power of Suppliers

4.3.2 Bargaining Power of Consumers

4.3.3 Threat of New Entrants

4.3.4 Threat of Substitute Products

4.3.5 Intensity of Competitive Rivalry

4.4 Impact of Macroeconomic Trends on the Market

5 MARKET DYNAMICS

5.1 Market Drivers

5.1.1 Growing Adoption of High-End Smartphones and Consumer Electronics

5.2 Market Challenges

5.2.1 Rising Raw Material and Production Prices

6 MARKET SEGMENTATION

6.1 By Architecture

6.1.1 DDR3

6.1.2 DDR4

6.1.3 DDR5

6.1.4 DDR2/Other Architecture

6.2 By Application

6.2.1 Smartphones/Tablets

6.2.2 PC/Laptop

6.2.3 Datacenter

6.2.4 Graphics

6.2.5 Consumer Products

6.2.6 Automotive

6.2.7 Other Applications

7 COMPETITIVE LANDSCAPE

7.1 Company Profiles

7.1.1 Samsung Electronics Co. Ltd.

7.1.2 Micron Technology Inc.

7.1.3 SK Hynix

7.1.4 Nanya Technology Corporation

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- 7.1.5 Winbond Electronics Corporation
- 7.1.6 Transcend Information
- 7.1.7 Kingston Technology
- 7.1.8 Infineon Technologies AG
- 7.1.9 ATP Electronics
- 7.1.10 Elpida Memory Inc.

8 INVESTMENT ANALYSIS

9 FUTURE OF THE MARKET

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