

## **Resistive RAM - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)**

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### **Report description:**

The Resistive RAM Market is expected to register a CAGR of 29.9% during the forecast period.

#### Key Highlights

- Further, the growing adoption of sensor technology, such as wearable and AI-enabled devices in various regions throughout the world, has boosted the demand for fast data transfers and high storage density, which in turn is providing a tremendous chance or possibility for the growth of the resistive random access memory market globally.
- Moreover, various multiple memory companies are investing in ReRAM technology. For instance, in April last year, CrossBar Inc., a non-volatile memory technology provider, announced new applications of its ReRAM technology for usage in secure storage and processing, where resistance to reverse engineering and physical attacks is an essential requirement of the system. The company's technology is now being offered for use in memory applications requiring higher levels of content security.
- Resistive random-access memory (ReRAM) is gaining traction as non-volatile memory (NVM) alternative, particularly in cloud and data center contexts where performance and energy efficiency are constantly improving. ReRAM technology has demonstrated lower read latency and quicker write version than flash memories while also achieving 64pJ/cell program energy, which is a 20% improvement over NAND, as the demand for data grows from users through premium services such as video streaming and from machines through the Internet of Things (IoT). In addition, the 3D vertical ReRAM arrays provide high-performance memory subsystems capable of replacing standard DRAM- or flash-based SSDs in data center environments, allowing faster data processing, storage, and retrieval in significantly smaller form factors with lower energy consumption.
- However, the soaring costs of resistive random-access memory and the complexity in various technological applications have become crucial challenges that can hinder the market's growth throughout the forecast period.
- Moreover, the COVID-19 pandemic is likely impeding the overall anticipated growth of the market, mainly attributed to the supply chain disruption, with several companies witnessing a scarcity of components like inductors and capacitors for

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manufacturing. But over the subsequent years, the innovation and implementation of new materials are expected to boost the demand for resistive random access memory in diverse verticals throughout the world.

## Resistive Random Access Memory (RAM) Market Trends

### Increasing Demand of Connected Devices Under Consumer Electronics Segment is Fueling the Demand for ReRAM

- ReRAMs can compute faster than ordinary RAMs, are better for read-intensive applications, and are ideal for storage-class memory in servers. Further, rising consumer electronics demand for interconnected devices, the increasing usage of sensor technologies, including wearable and AI-enabled gadgets, and developments by industry players, are expected to contribute to market growth.
- For instance, in August last year, Enphase Energy, Inc., a worldwide energy technology business and the world's largest producer of microinverter-based photovoltaic and storage systems launched a new collaboration with Home Connect. This accessible digital network enables home appliances of many manufacturers to be controlled with a single app.
- Higher switching speed constitutes a principal advantage of ReRAM over other nonvolatile storage technologies such as NAND flash. ReRAM draws much less power than NAND flash. That makes it best suited for memory in sensor devices for industrial, automotive, and internet of things (IoT) applications. Neuromorphic computing is another potential application for ReRAM.
- Over the past few years, a significant demand for connected devices, such as wearables, IoT, and AI-based systems, has been witnessed. Resistive RAMs are used in these devices to increase storage capacities. Moreover, with the upcoming smart cities and smart homes, the number of connected devices is bound to increase, which, in turn, will increase the demand for strong memory capacity servers.
- To serve emerging IoT requirements, several companies are introducing innovations to connect and scale remote operations, bringing real-time, secure, and bandwidth-heavy IoT applications to fruition. For instance, in September last year, Silicon Labs, the pioneer in secure, smart wireless innovation for a better-connected world, unveiled a portfolio of innovative solutions that significantly expanded its interoperability-driven, multiprotocol-supporting, and robustly-secure range with new solutions to advance the breakthroughs and patterns defining the Internet of Things, such as Amazon Sidewalk, Matter, Wi-SUN, and Wi-Fi 6.

### The Asia Pacific Expected to Hold a Major Share of the Market

- The Asia Pacific is expected to have a strong position in the global resistive random access memory market over the forecast period. China, South Korea, and India are some of the major countries that drive market growth in the Asia Pacific region. The increasing consumer electronics and automotive industry primarily fuel the demand for resistive random access memory in Asia Pacific countries.
- Moreover, many organizations are establishing data centers in this region, which will also extend the demand for the resistive RAM market. Developing nations, such as India and China, and Japan, will drive the market's growth in this region owing to the growing enterprise server, data centers, AI, and connected infrastructure.
- China is developing its domestic IC industry and plans to make more chips. The significant presence of manufacturers in the region is also a major contributing factor to the market. China is home to several global foundries with growing clout in the global semiconductor sector.
- The growing investments in the ReRAM technology-based manufacturers are boosting the market growth rate. For instance, Xinyuan Semiconductor, which focuses on the R&D of ReRAM's new memory products and associated derivative goods, has grown into China's leading new memory technology firm.
- Further, in March 2022, Fujitsu Semiconductor Memory Solution Limited revealed the release of the MB85AS12MT, a 12Mbit

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ReRAM with the highest capacity in Fujitsu's ReRAM product line. This new invention is non-volatile storage with a high memory capacity of 12Mbit in a compact package size of about 2mm x 3mm.

## Resistive Random Access Memory (RAM) Industry Overview

The Resistive RAM Market is moderately competitive and consists of several major players. Market players such as Rambus Inc., Panasonic Corporation, Adesto Technologies, Fujitsu Ltd, and Crossbar Inc., among others, are some of the major companies operating in the market. These major players are focused on expanding their production capacity and leveraging strategic collaborative initiatives to increase their market share and profitability.

In November 2022, Infineon Technologies launched TSMC's Resistive RAM (RRAM) Non-Volatile Memory (NVM) technology in its next generation of automotive microcontrollers. RRAM is an emerging embedded flash technology for microcontrollers that scales to 28nm process technologies and beyond with the reliability needed for automotive designs. The technology is more immune to interference and enables bit-wise writing without the requirement of erasing while having endurance and data retention performance comparable to current flash memory technology.

In October 2022, Weebit Nano Limited, a developer of next-generation memory technologies for the worldwide semiconductor industry, declared that it had completed the complete technology qualification of its Resistive Random-Access Memory (ReRAM) module that is mainly manufactured by its R&D partner CEA-Leti. This is the first-ever full qualification of Weebit ReRAM technology, a crucial step that must be completed for every semiconductor product on each new target process.

### Additional Benefits:

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

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