

# MEMORY REVENUE



## NO.4 MAY23 MEMPHIS MEMORY ESSENTIALS

Everything you need to know about the semiconductor memory industry, from legacy technologies to latest innovations.

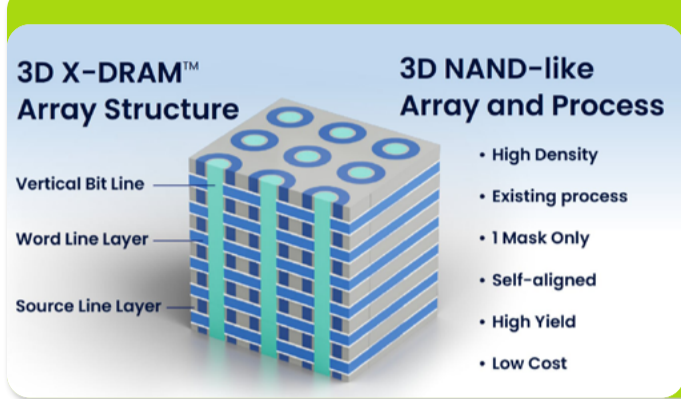
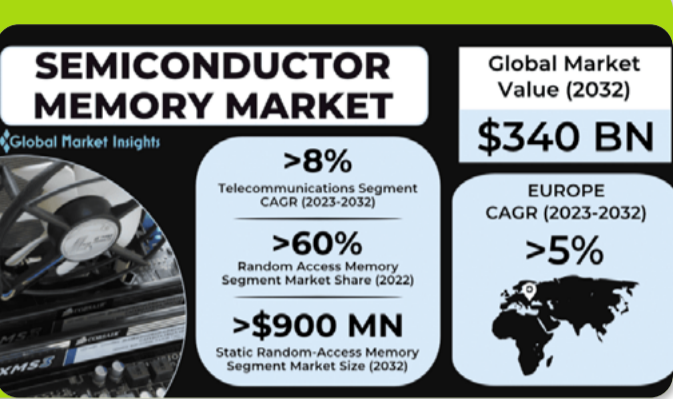
Brought to you by MEMPHIS Electronic, your specialist memory distributor. We are posting similar stories regularly on [LinkedIn](#), so follow us there to stay on top of the news.

### Will memory manufacturers survive the price slumps?

The leading memory manufacturers Kioxia, Micron, Samsung, SK Hynix, and Western Digital have lost over \$10 billion in flash memory alone as the companies had to cut down prices of already produced ICs. Gartner predicted that DRAM revenue this year will drop by 39.4% and NAND by 32.9%. Against this background, Phison Chief has warned of bankruptcies in the NAND industry if prices continue to decline.

Gartner also predicted that memory revenue will increase 70% in 2024 (DRAM will even surge to 86.6%), as the market will move to undersupply again and prices will rebound. The question is if manufacturers can live through this difficult year – and which products they discontinue along the way.

It is a critical time for the memory industry as well as for all industrial manufacturers. If you are using legacy DRAM or Flash memory technologies and are worried about a continuous supply, speak with us about possible alternatives. Stay on the pulse of development and plan ahead. We have 18 memory manufacturers in our line card. We can help find alternatives.



### Semiconductor Memory Market to Reach \$340B by 2032

Global Market Insights valued the worldwide semiconductor memory market at over USD 160 billion in 2022 and estimates it will surpass a revenue collection of USD 340 billion by 2032 with an annual growth rate of 7.5% from 2023 to 2032.

The RAM segment will demonstrate sturdy growth through 2032, owing to the rising adoption of semiconductors in automotive & electronic systems, such as SRAM, DRAM, and MRAM. Besides, automobile manufacturers are making use of RAMs for everything, right from engine control to lane-change warning, which is slated to bolster its demand in the ensuing years.

Regionally, the North America semiconductor memory market was valued at over USD 40 billion in 2022 and is slated to demonstrate massive growth by 2032. The regional growth can be attributed to the developments in automation and digitalization as well as the use of memory-based elements in technically advanced products in the electronics industry.

Read more [here](#).

### Is 3D X-DRAM the next big thing?

We have become so used to 3D NAND that we forget that DRAM is still a planar, 2D technology. Stacking DRAMs to get density up and costs down seems like an obvious approach, but one that is difficult.

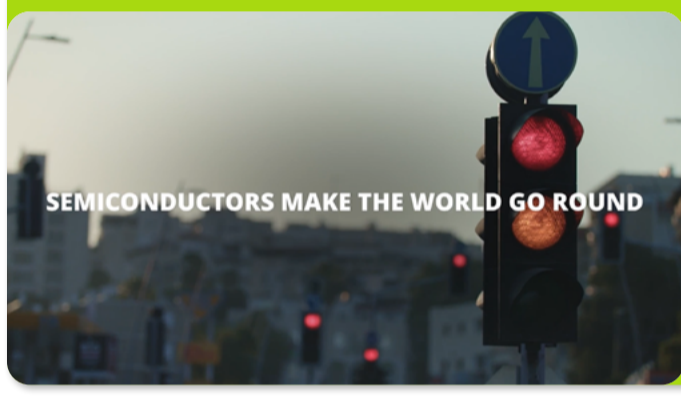
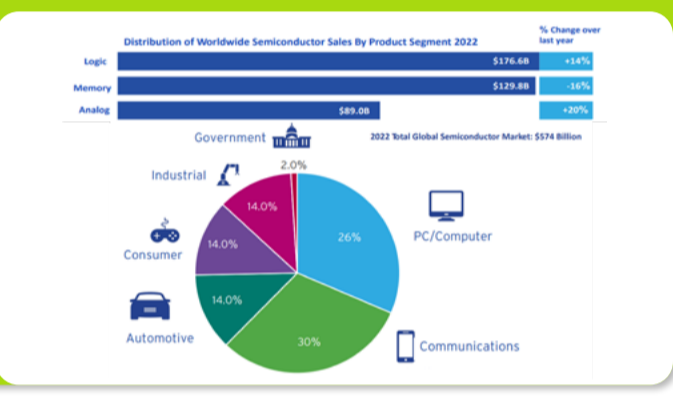
NEO Semiconductor introduced its 3D X-DRAM technology targeted to solve DRAM's capacity bottleneck with a first-of-its-kind 3D NAND-like DRAM cell array structure based on capacitor-less floating body cell technology.

It can be manufactured using today's 3D NAND-like process and only needs one mask to define the bit line holes and form the cell structure inside the holes. This cell structure simplifies the process steps and provides a high-speed, high-density, low-cost, and high-yield solution.

Based on Neo's estimates, 3D X-DRAM technology can achieve 128 Gb density with 230 layers, which is 8 times today's DRAM density.

As a fabless operation, Neo will be looking to license its technology to DRAM manufacturers such as Micron, Samsung, and SK hynix.

Read more [here](#).



### New SIA Factbook released

Semiconductors enable the systems and products that we use to work, communicate, travel, entertain, harness energy, treat illness, and make new scientific discoveries. Semiconductors were invented in America, and U.S. companies still lead the global market, accounting for nearly half the world's chip sales.

Semiconductor technology has rapidly evolved as the industry develops more advanced products and process technologies for applications in end-use industries. In recent years, the largest segments of the worldwide semiconductor industry have been memory, logic, analog, and MPU. In 2022, these products accounted for 78 percent of semiconductor industry sales.

The vast majority of semiconductor demand is driven by products ultimately purchased by consumers, such as laptops or smartphones. Increasingly, consumer demand is ripening in emerging markets including those in Asia, Latin America, Eastern Europe, and Africa.

Read all about it [here](#).

### Get to know Neumonda!

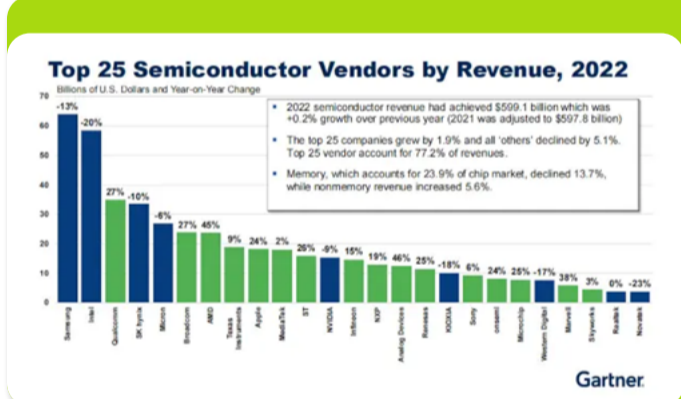
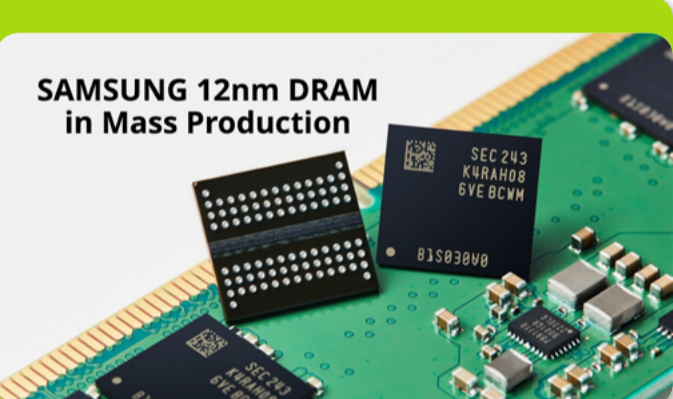
As you know, MEMPHIS Electronic is part of Neumonda Group and we play an important role in the company's vision of providing the most comprehensive memory application expertise under one roof. Want to know how? Check out the [new website and video](#).

We are proud to be part of a team that aims to do nothing less than revolutionize DRAM memory testing with their new Rhinoceros tester. The numbers speak for themselves:

- 1,000 x lower invest
- 1,000 x lower weight
- 100 x lower energy consumption

It doesn't test in the conventional sense. The Rhinoceros tester puts memory ICs through their paces in real life conditions simulating the application to predict accurately how well a memory will do in that target system. No one else can do that today, that's unique.

Read all about it [here](#).



### Samsung 12nm DRAM in mass production

Samsung Semiconductor has started mass production of its 16-gigabit (Gb) DDR5 DRAM, which utilizes the industry's most advanced 12nm (nanometer) process technology.

Compared to the previous generation, Samsung's new 12nm-class DDR5 DRAM reduces power consumption by up to 23% while enhancing wafer productivity by up to 20%.

This technological leap was made possible through the use of a new high-k material that increases cell capacitance, and proprietary design technology that improves critical circuit characteristics. Combined with advanced, multi-layer extreme ultraviolet (EUV) lithography, the new DRAM features the industry's highest die density, which enables a 20 percent gain in wafer productivity.

Samsung plans to broaden its DRAM lineup built on this cutting-edge 12nm-class process technology into a wide range of market segments, as it continues to work with industry partners to support the rapid expansion of next-generation computing.

Read more [here](#).

### Top 25 Semiconductor Companies

Gartner has released the the ranking of the top 25 semiconductor manufacturers in the world by 2022 revenue. This shows that global semiconductor revenue was US\$599.1 billion in 2022, an increase of just 0.2 percent compared with 2021. The US has 14 companies in the top 25, South Korea two, Taiwan, Europe and Japan three each.

The decline in the memory market in 2022 brought down the sales of SK Hynix, Micron, Western Digital and Samsung.

The total revenue of the top 25 semiconductor manufacturers increased by 1.9 percent on an annual basis while the total revenue of the remainder decreased by 5.1 percent. The top 25 vendors accounted for 77.2 percent of revenues. Memory, which accounted for 23.9 percent of the chip market, declined 13.7 percent, while non-memory revenue increased 5.6 percent.

Read more [here](#).



### Rate your favorite distributor

Votes are open now for the reader's choice award "Distributor of the Year" from the German publication Elektronik.

It's not easy to be a specialty distributor focusing on semiconductor memory only! We consider our focus our strengths. We understand our customer's situation and are passionate about getting our customers the memory products you need when you need them.

Like what we are doing? Then cast your vote now: <https://bit.ly/3Hw7B5c>

The questionnaire is short – though in German. But Google Translate does a good job of translating the questions. No excuse, go vote now!

### Meet us at Sensor converge + Evertiq Berlin

Only a few weeks to go until the next opportunities to meet us in person in the U.S. and Europe:

We are participating at Sensors Converge 2023, North America's largest electronics event for design engineers, from June 20-22 in Santa Clara. If you are in electronics design, drop by our booth #806 and find out more [here](#).

We are also participating again in Evertiq Expo Berlin on June 29. This is a one-day event for professionals in electronics design and purchasing, combining keynotes and exhibitions with networking opportunities in a vibrant location. Find out more [here](#).

### How do you like our monthly newsletter?

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