2026 Trends to Watch: Semiconductors

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Contents

Key messages

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Artificial intelligence (AI)-driven growth reshaping the semiconductor industry

- AI is fueling unprecedented growth in the semiconductor market, with record revenue driven by investments in AI technologies.
- Data center servers, powered by AI developments, are the dominant drivers of semiconductor revenue, with significant demand for GPUs, logic ASSP/ASICs, DRAM (HBM), and power management ICs.
- The AI boom is forecast to sustain a six-year growth period, potentially breaking the historical cyclical revenue trends of the semiconductor industry.

2

Data processing and advanced technologies leading market transformation

- The data processing segment is set to surpass 50% of total semiconductor revenue for the first time in 2026, driven by data center and AI-related applications.
- High performance computing (HPC) advancements, including 7nm to 2nm silicon and specialty technologies like silicon photonics and chiplets, will dominate foundry revenue growth.
- Memory IC spending will accelerate, with a focus on advanced DRAM and HBM expansions to meet AI-driven demand.

3

Ecosystem evolution and emerging challenges

- The automotive sector is transitioning to software-defined vehicles, requiring a new semiconductor ecosystem with advanced AI-powered services, zonal architectures, and robust cybersecurity.
- Supply chain challenges, including potential infrastructure bottlenecks, supply constraints, and geopolitical risks, could impact growth.
- Emerging technologies like QLC ESSD and edge AI are gaining traction, but traditional solutions like HDDs remain critical for large-scale storage needs, highlighting the balance between innovation and existing infrastructure.

Breaking the historical semiconductor cycle

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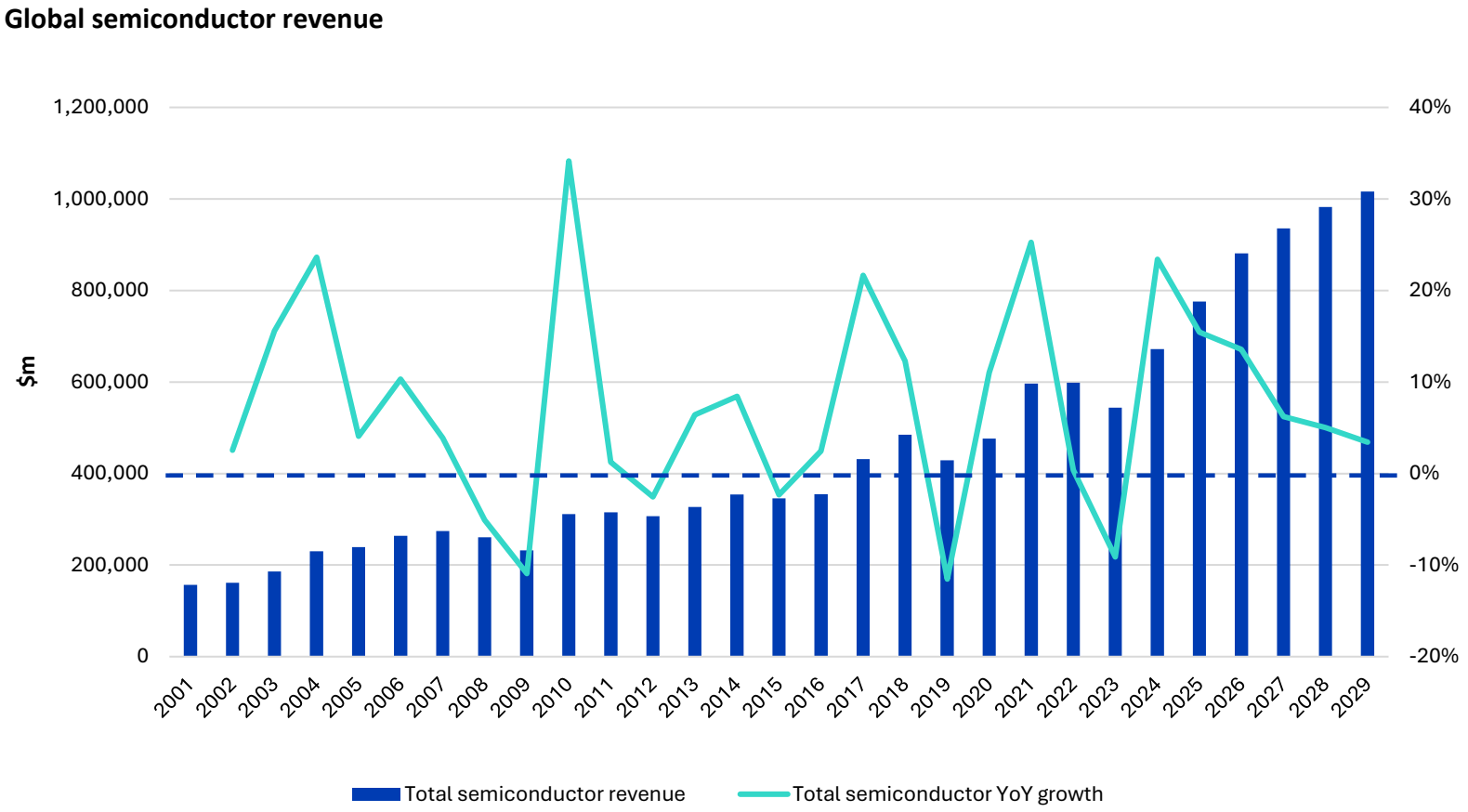
“The semiconductor industry has traditionally been cyclical, with revenue growth driven by specific boom markets that eventually decline. Currently, AI is fueling unprecedented growth, with end markets investing billions in AI technology and driving record revenue.

With no clear peak in sight, will the AI-driven semiconductor cycle reshape historical trends?”

Craig Stice
Chief Analyst, Semiconductors

Is the AI boom resilient enough to break the semiconductor revenue cycle?

- Over the last 25 years, total semiconductor market revenue has experienced year-over-year (YoY) growth for more than three consecutive years only once (in the early 2000s).
- Since then, there have been two spans of three YoY revenue growth periods.
  - One during the enterprise expansion period in the late 2010s, the second during the COVID-19 era.
- 2025 is forecast to become the second growth period driven by AI, with YoY growth currently forecast to continue throughout the forecast period (six years of overall market revenue growth).



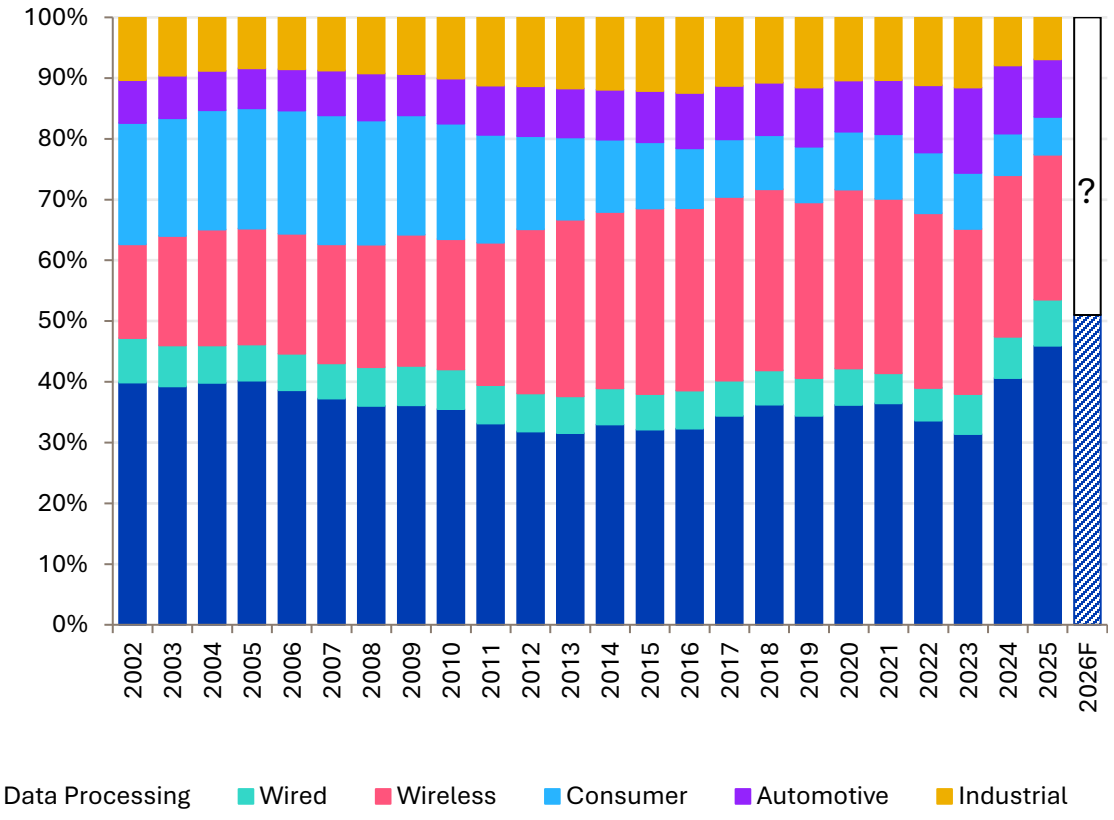
Source: Omdia

Omdia by informa techtarget

Is data processing semiconductor revenue tracking to surpass 50% of all semiconductor revenue in 2026?

- Data processing has always been the biggest of the six main semiconductor application groups by revenue.
  - Twenty years ago, PCs were the primary application.
  - Data centers are currently driving this segment.
- However, this segment has never accounted for such a large portion of the semiconductor market, not going above 40% until 2025.
  - Over more than 20 years, the market share has fluctuated between 30–40% of semiconductor revenue.
  - Smartphones squeezed the market share of data processing into the low 30% range 10 years ago.
  - The wireless segment is now below one quarter of semiconductor revenue, despite being nearly $100bn more than 10 years ago.
- The data processing segment revenue has doubled in just two years with little sign of slowing down.
  - This segment is $200bn higher in 2025 than in 2023.
  - The market share of this group is at an all-time high, representing approximately 46% of total semiconductor revenue.
- Will 2026 be the year when data processing exceeds a 50% share for the first time?

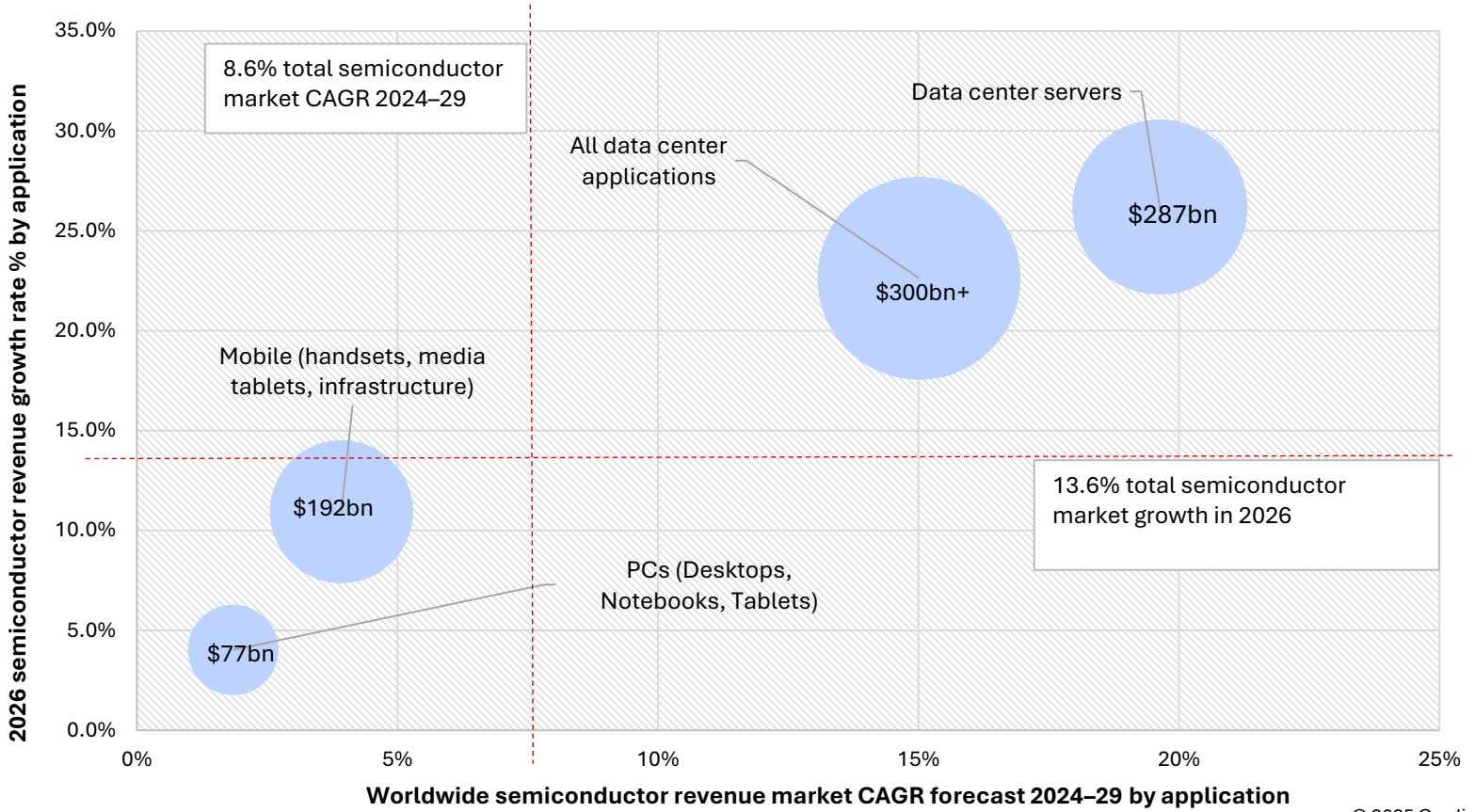
Semiconductor market share by revenue by application



Source: Omdia

Data center servers: Dominant driver of semiconductor revenue in 2026 amid AI growth

- Data center servers have become the greatest driver of semiconductor revenue. When considering other data center-associated applications, such as data center network switches, the dominance of this demand trend is overwhelming compared to other segments (e.g., mobile handsets and PCs).
- Major data center-related themes for 2026 include larger-scale AI model training with wider implementation, cloud service providers (CSPs) like Google, Microsoft, and Amazon continuing investment and capacity expansion, upgrade of older server components, improvement to power and cooling equipment, and demand growth for edge AI. These growth factors will fuel semiconductor revenue for GPUs, logic ASSP/ASIC for processing and high-speed networking, DRAM (HBM), and power management ICs.
- Threats to growth in this sector include slowing commercialization of AI, government and/or community resistance to new facilities, trade restrictions, reduced IT spending (weakening economy), and supply chain issues.



Source: Omdia

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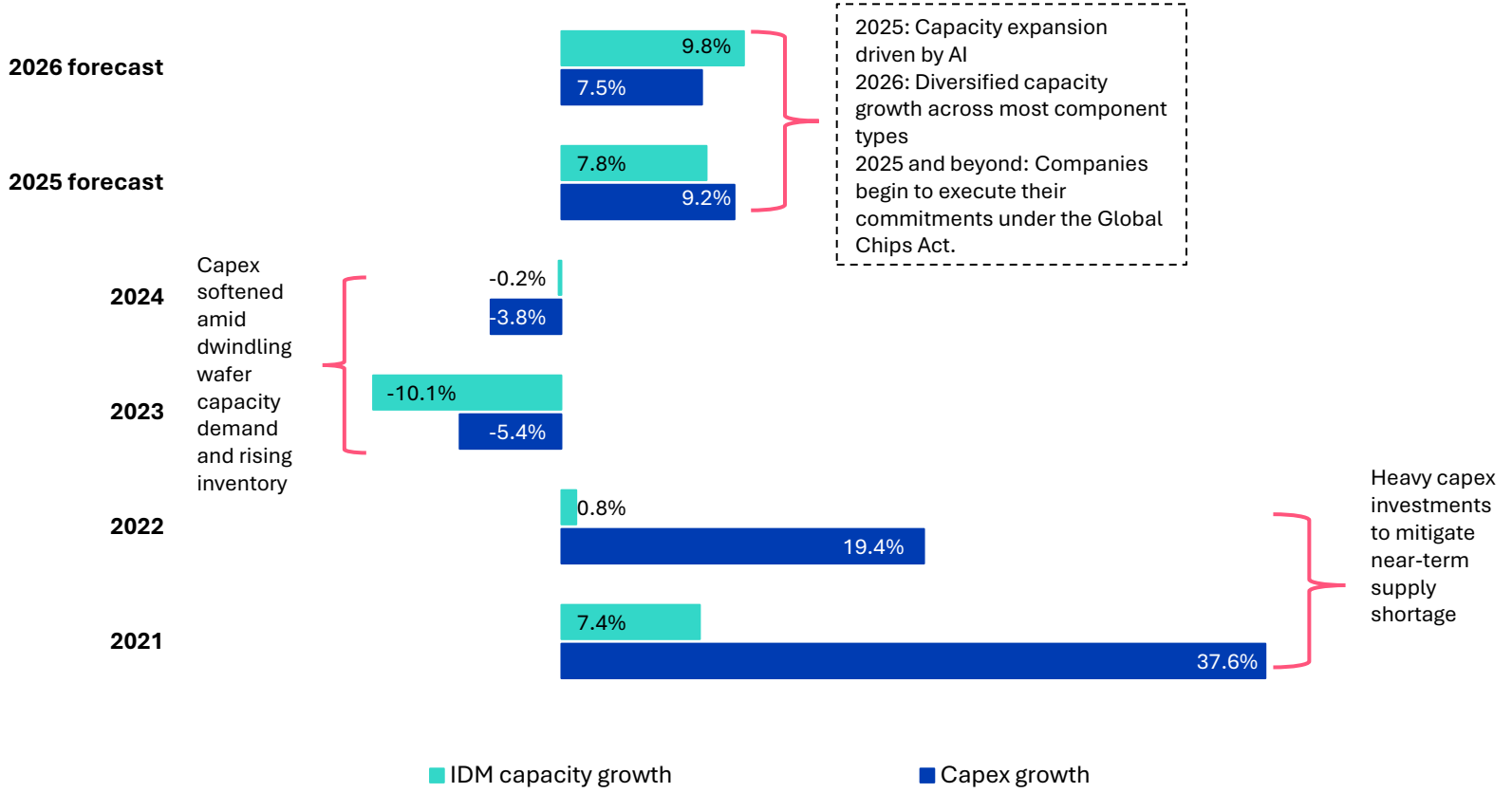
Fab expansions to capitalize on growth cycle

Capex and IDM output capacity set to reach new peaks in 2026

- Following a phase of cautious capacity expansion, IDMs are now strategically positioning to capitalize on recent fab investments driven by the semiconductor industry upswing.
- This growth cycle will primarily be fueled by next-generation AI data center infrastructure deployment, rising penetration of semiconductor-intensive electric vehicles, and widespread digital transformation of industrial markets.
- Wafer capacity expansion will become increasingly diversified, moving beyond core logic and memory into discrete, analog, and microcomponents, resulting in a comprehensive industry-wide capacity growth cycle.

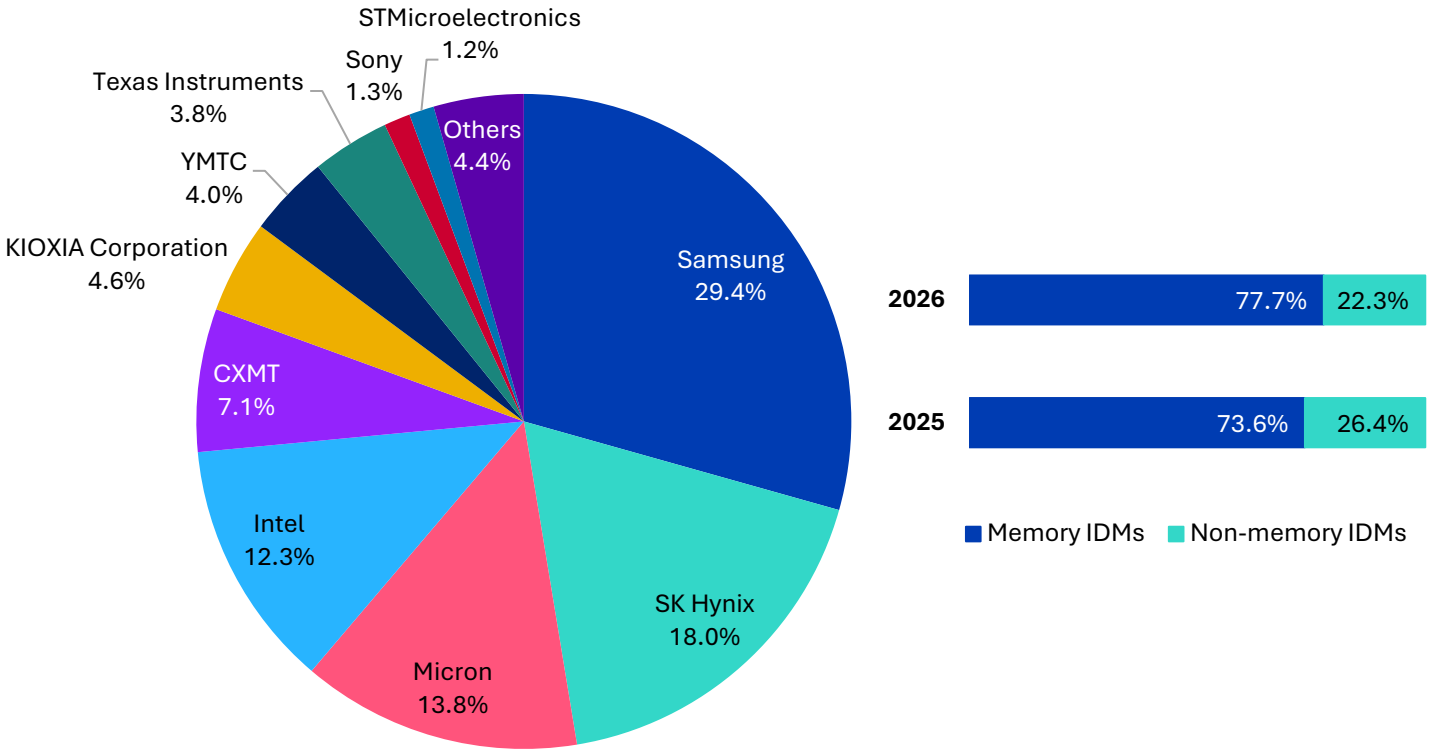
Capex growth vs. IDM output capacity expansion, 2021–26



Source: Omdia

Memory IC capex to accelerate in 2026, dominating share of IDM capex

Memory IC spending to surge again in 2026, expanding memory IDMs capex share to 77.7%



Source: Omdia

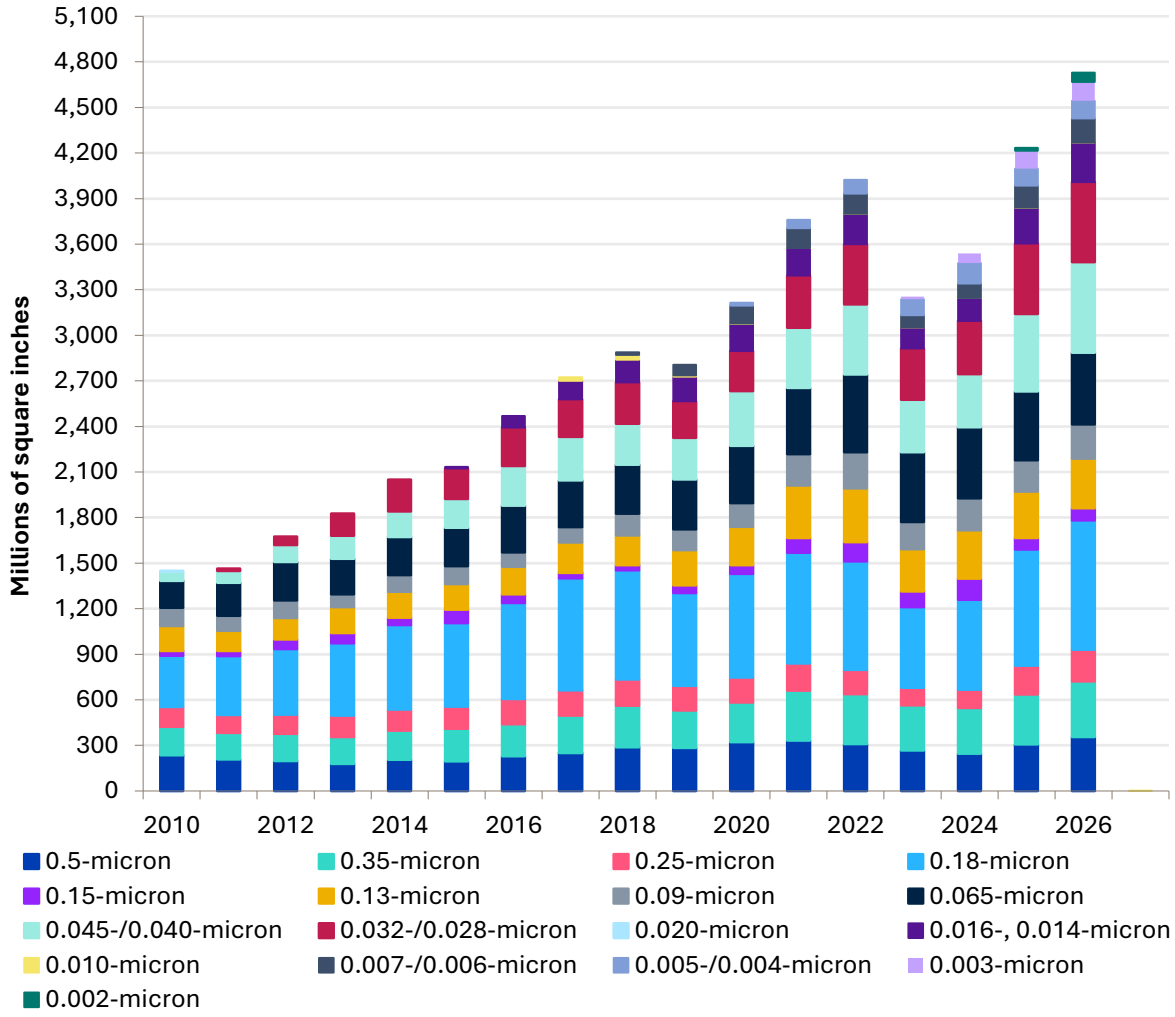
- Memory IDMs held back on capex during the downturn owing to low utilization, pricing pressure, and financial stress. As demand rebounds, postponed expansion now reenter the planning cycle, causing a sharp spending upswing in 2025–26.
- SK hynix, Samsung, and Micron are prioritizing HBM and advanced DRAM expansions, supported by strong multi-year AI data center demand. Investments focus on through-silicon via (TSV) capacity, hybrid bonding, HBM stacking, sub-1nm-class DRAM nodes, and new large-scale fabs. These commitments make memory the sector with the clearest long-term capex path through 2026.
- Capex of non-memory IDMs remains restrained owing to tariff uncertainty, geopolitical risk, slow industrial and automotive recovery, and oversubscribed government incentive programs. MCU, analog, and discrete capex are expected to face moderate cuts in 2026.

High performance computing driving foundry revenue

Pure-play foundry industry's estimated wafer shipments

- As AI infiltrates different applications and requires more computing power, high performance computing will dominate foundries' technology advancements and revenue growth in 2026.
- In 2026, 7nm to 2nm silicon is forecast to account for 59% of total revenue but only 10% of total silicon shipments of the pure-play foundry industry.
- The majority of capex spending will focus on capacity expansion and research development for advanced technology nodes.
- Both revenue (although from a low base) and ongoing investment in emerging technology such as silicon photonics and chiplets will grow strongly in 2026 owing to robust demand for high performance computing.
- Accompanied by the strong demand for high performance computing, the need to process higher data volumes will increase. Foundries will keep pioneering advanced packaging developments in 2026.

Pure-play foundry silicon shipments by feature size, 2010–26



Source: Omdia

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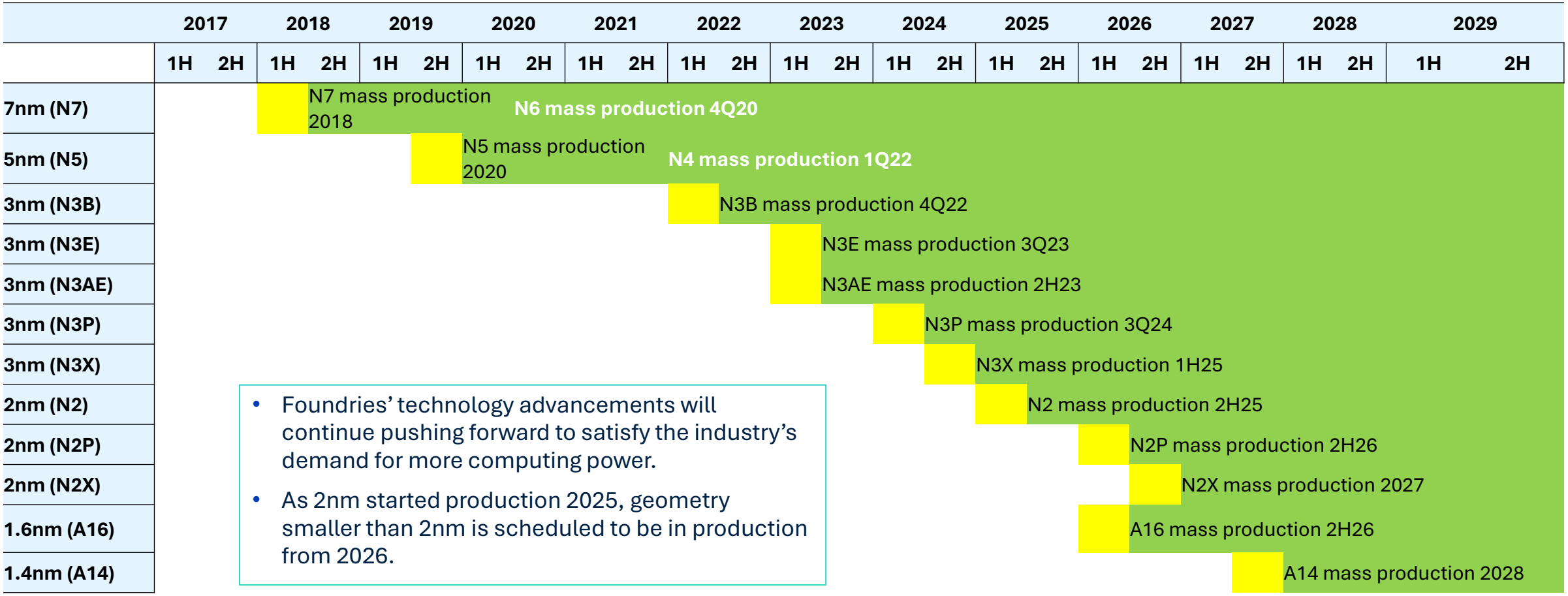
Tier 1 foundry process roadmap



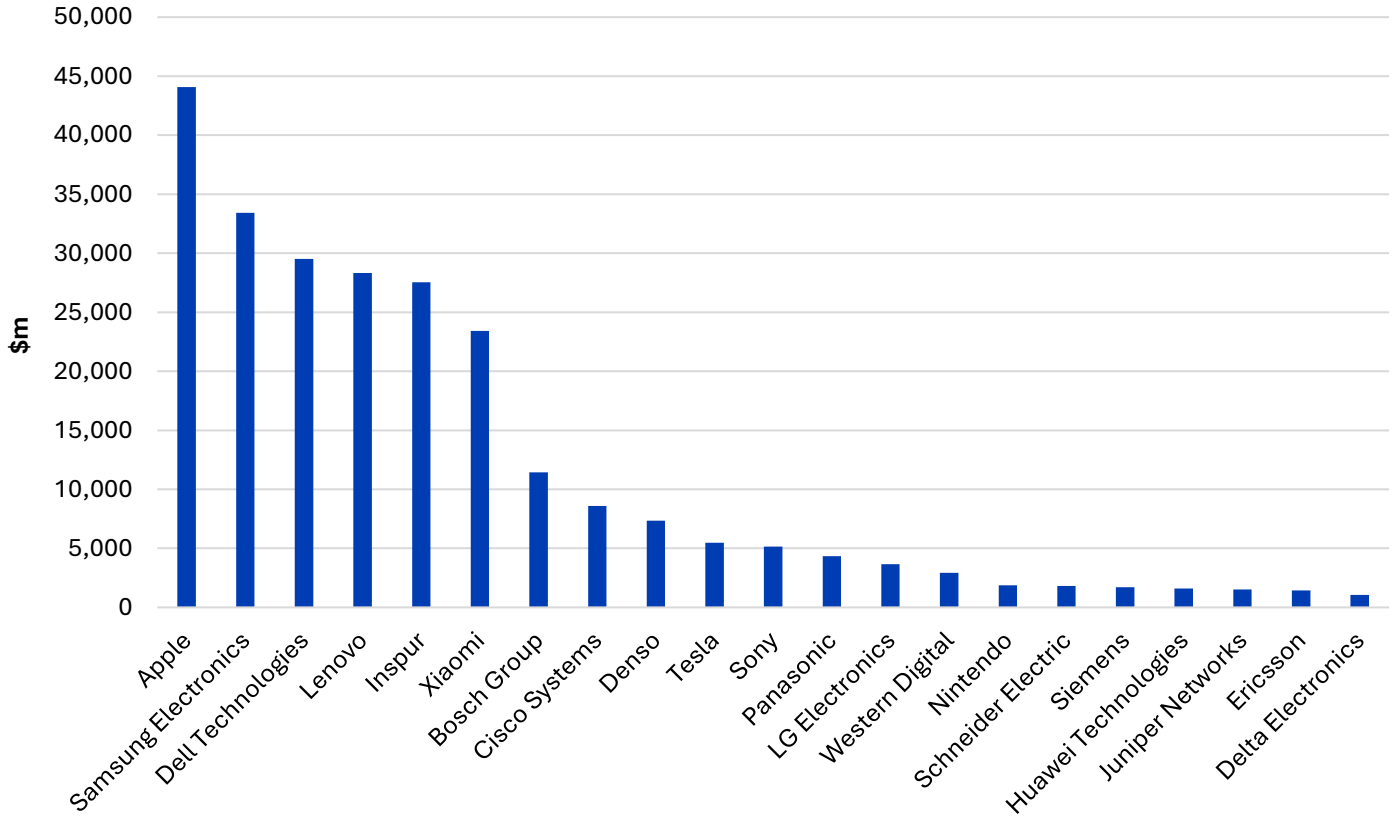
- Foundries' technology advancements will continue pushing forward to satisfy the industry's demand for more computing power.
- As 2nm started production 2025, geometry smaller than 2nm is scheduled to be in production from 2026.

Source: Omdia

OEM semiconductor spending and strategic shifts

AI-driven strategies fuel OEM growth

Top OEMs by worldwide semiconductor spending, 2026



Source: Omdia

- AI-driven strategies are accelerating top OEMs' R&D spending and investments, as companies focus on AI-enabled features and system-level integration to drive growth.
- Top three wireless communications OEMs
  - Apple drives custom AI chip development, Samsung advances AI-enabled wireless and memory, and Xiaomi builds long-term system on a chip (SoC) and cross-device AI capabilities.
- Top three computer-platform OEMs
  - Dell, Lenovo, and Inspur are shifting toward AI, expanding enterprise AI infrastructure and cross-device ecosystems; Dell focuses on ISG, reducing investment in PCs, Lenovo focuses on end-to-end AI integration, and Inspur focuses on its hardware–software–cloud strategy.
- Top three automotive OEMs
  - Denso and Bosch are advancing electrification, software-defined vehicles (SDVs), and AI-driven mobility, focusing on semiconductors, modular electronic control units (ECUs), and system-level solutions; Tesla is expanding vehicles, energy products, and AI programs like Cybercab and Optimus.
- The industry is expanding rapidly owing to AI applications, but it also faces economic, geopolitical, and supply chain challenges, including the need to diversify manufacturing. To capitalize on AI opportunities, companies are focusing on resilient supply chains, vertical integration, and advanced technologies.

China semiconductor market

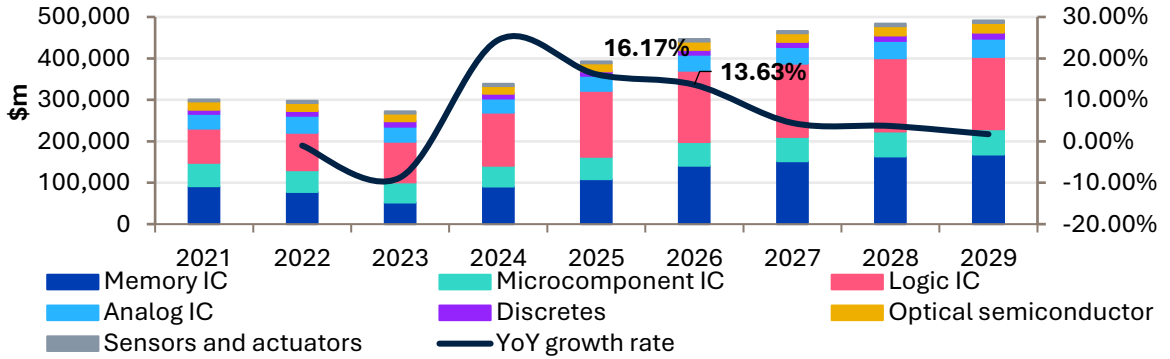
“AI application models are being widely deployed across various vertical sectors in China marking the dawn of the Edge AI era. Numerous LLMs are actively deploying vertical application models across industries. Digital terminals equipped with edge inference capabilities will experience rapid growth, serving as a significant driving force for the expansion of China's semiconductor industry—particularly in mature process technologies.”

Hui He
Research Director, Semiconductors

China’s semiconductor market forecast to maintain double-digit growth in 2025 and 2026

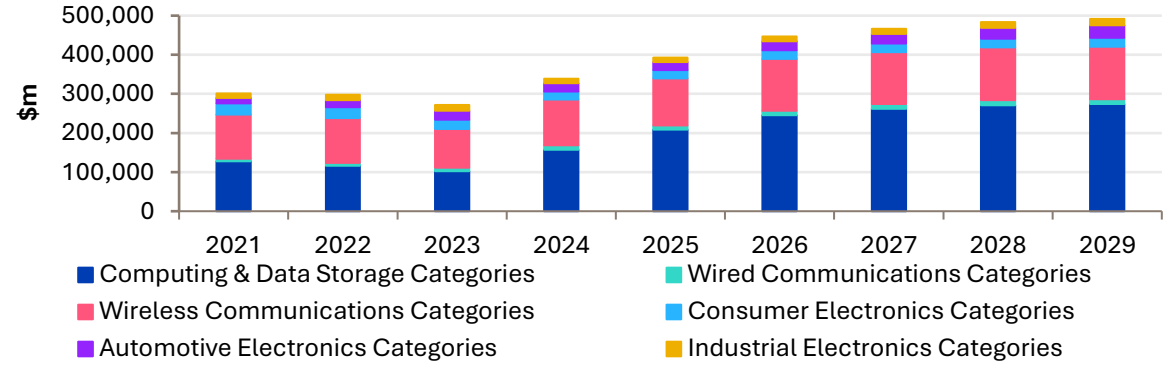
- In 2025, China’s semiconductor market is projected to experience significant growth, reaching $393bn (over 16% YoY growth), boosted by AI data center investments.
- 1H25 experienced a relatively stable supply in the smartphone sector and an improvement in the PC industry. The localization trend for AI arithmetic chips continues to accelerate. The government’s consumer subsidy policy and concerns about tariff-driven price increases are prompting some consumers to accelerate the replacement or upgrade of their technology.
- Revenue growth from consumer electronics, driven by government subsidies, is slowing. In 2H25 and throughout 2026, market expansion will be fueled by sustained AI investments and the rise of edge AI, which will drive increased demand for chips in specific application areas.
- As China continues to expand its mature process foundry capacity in recent years, a significant amount of mature process production capacity will begin to be released to the market starting in 2026. This will further increase the domestic self-sufficiency ratio and exert a positive impact on existing global Tier 2 foundries.

China’s total semiconductor shipment revenue, 2021–29



Source: Omdia

China’s total semiconductor shipment by application, 2021–29



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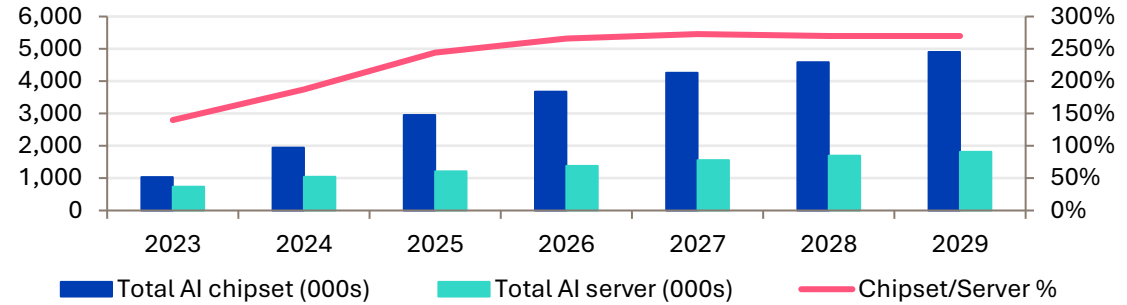
AI will bring new semiconductor applications to China

- Owing to the ban on NVIDIA AI chip sales in China, the market share of domestic Chinese AI chip suppliers will expand further during 2026.
- Edge AI will bring significant growth opportunities to inference AI chips in China in 2026. The penetration rate of AI in end devices is expected to continue increasing in 2026, with seamless device connectivity becoming essential for low-latency network connections. For devices with end-to-end AI processing, the adoption of multi-expert vertical domain (MoE) architectures is necessary to support faster development, especially in compressing and miniaturizing large models.

We're seeing evidence of the deep synergy between computing power and the AI ecosystem, showcasing China's diverse breakthroughs in the field of AI infrastructure. In 2026, with the continued synergy between technology and the ecosystem, China's intelligent computing capabilities will play an increasingly important role.

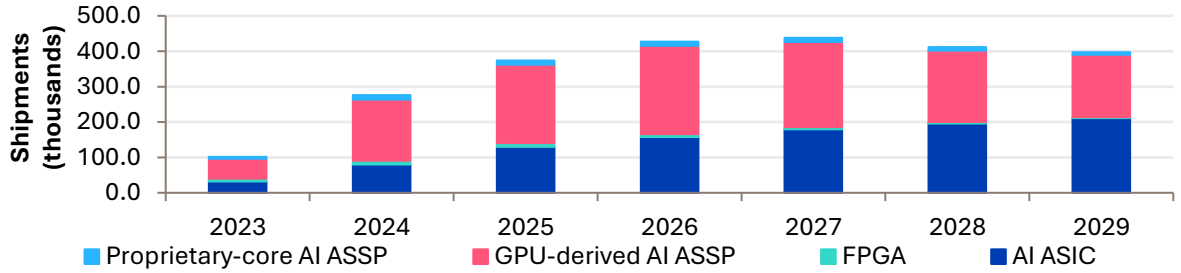
Hui He, Director of Semiconductor Research

AI chipset and server overview for China



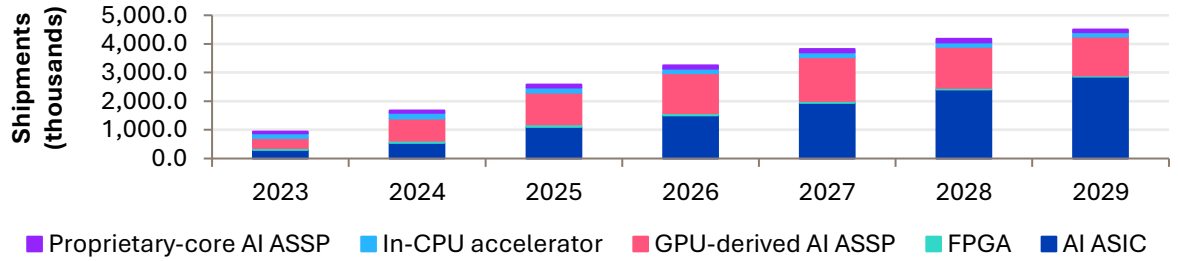
Source: Omdia

China's TAM – AI chipsets for training



Source: Omdia

China's TAM – AI chipsets for inference



Source: Omdia

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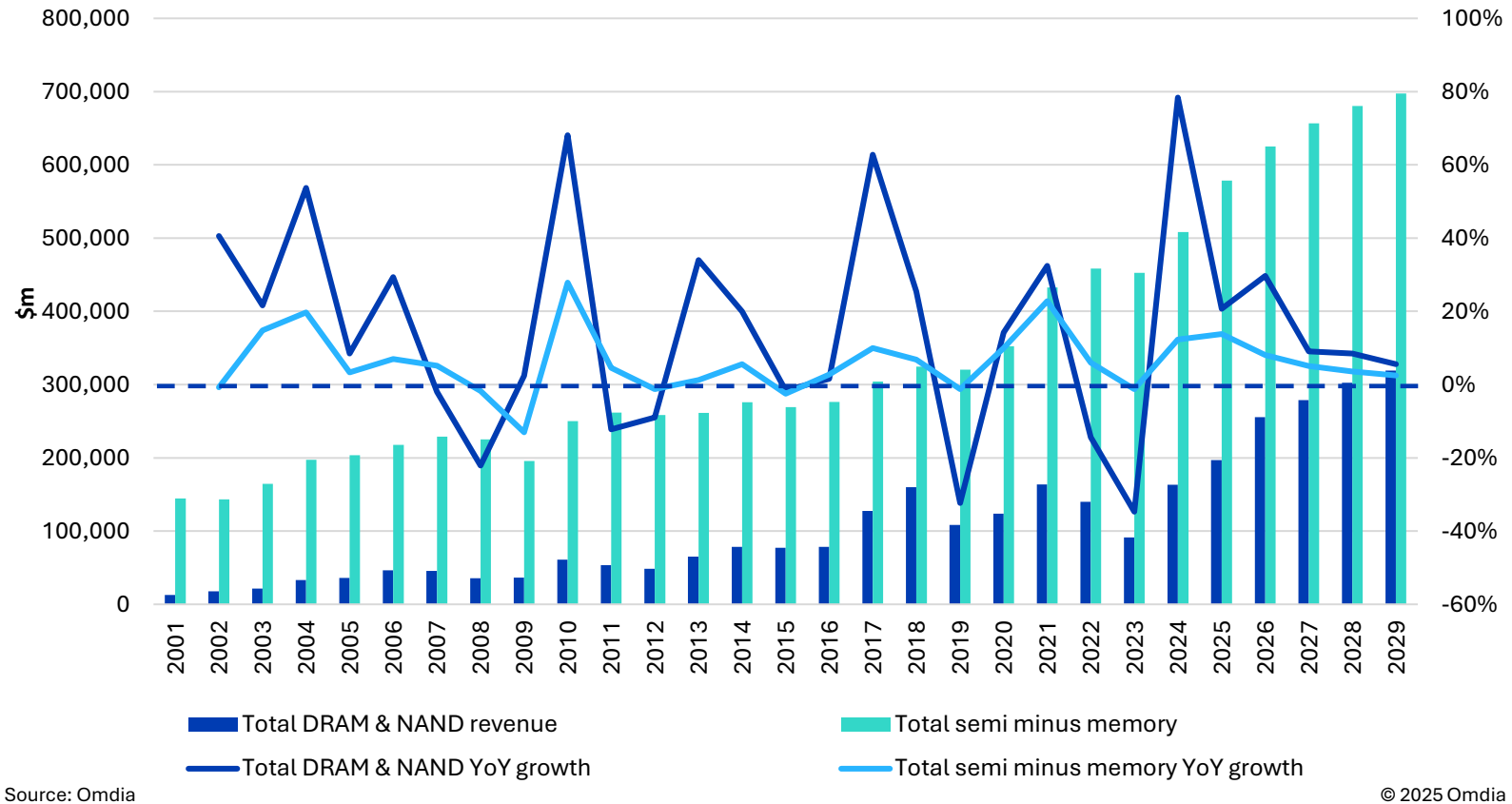
AI drives DRAM demand upcycle

Longer-term growth projection for memory markets

- Historically, the highly volatile memory markets accounted for approximately 25% of total semiconductor revenue.
  - Memory market growth will have a profound impact on total semiconductor revenue.
- During the early 2000s, DRAM (the largest memory market) experienced its only three-year span of YoY revenue growth.
  - Since then, the DRAM market has experienced two years of consecutive revenue growth only three times.
- 2025 will be the second year of consecutive DRAM revenue growth, with continued growth forecast through 2029, which is unprecedented.

Global semiconductor revenue without memory and memory revenue



Source: Omdia

What is powering the unprecedented memory upcycle

- The memory market is experiencing an unprecedented upcycle. Trillions of dollars in AI infrastructure funding are creating a new capital engine. Inference growth and expanding context windows are turning memory, not compute, into the core bottleneck. HBM-centric production is constraining DRAM supply and keeping the market tight.

Capital expansion

Public + Private + Financial capital forming a new AI ecosystem

- Sovereign AI, hyperscalers, and neo cloud investments are creating a multi-source capital engine.
- $8tn in global AI infrastructure funding (2025–29) drives unprecedented demand visibility for memory.
- Capital intensity spreads from GPU clusters to memory-centric infrastructure.

Structural memory demand

Inference, context, and agentic AI reshape how memory is used

- AI demand shifting from training to inference (>85% of units from 2025 onward).
- Expansion of context windows and agentic AI drives exponential memory load (HBM → DRAM → SSD → CXL).
- Memory has become the core performance bottleneck of AI, not compute.

Supply constraints

HBM-centric production limits capacity growth in conventional DRAM

- DRAM supply growth (~20%) continues to lag demand (over 20%) through 2026.
- Suppliers prioritize high-margin HBM, delaying conventional bit growth.
- Structural tightness maintains high pricing and extends the upcycle into 2026.

Potential risk factors in the next phase of the AI cycle

Liquidity contraction

- AI investment boom relies on abundant capital and low interest rates.
- Monetary tightening could slow funding for sovereign AI and neo cloud projects.
- **Timing:** Potential risk once the next rate hike cycle begins, expected post-2026.

Supply expansion

- Record profitability may trigger aggressive fab buildouts.
- New HBM/DRAM capacity could lead to oversupply by 2028.
- **Timing:** Structural risk depends on the ramp-up pace of Samsung's P4/P5 and SK hynix's Yongin fabs, the progress of Micron's new Boise fab, and CXMT's decision on additional fab construction.

Infrastructure bottleneck

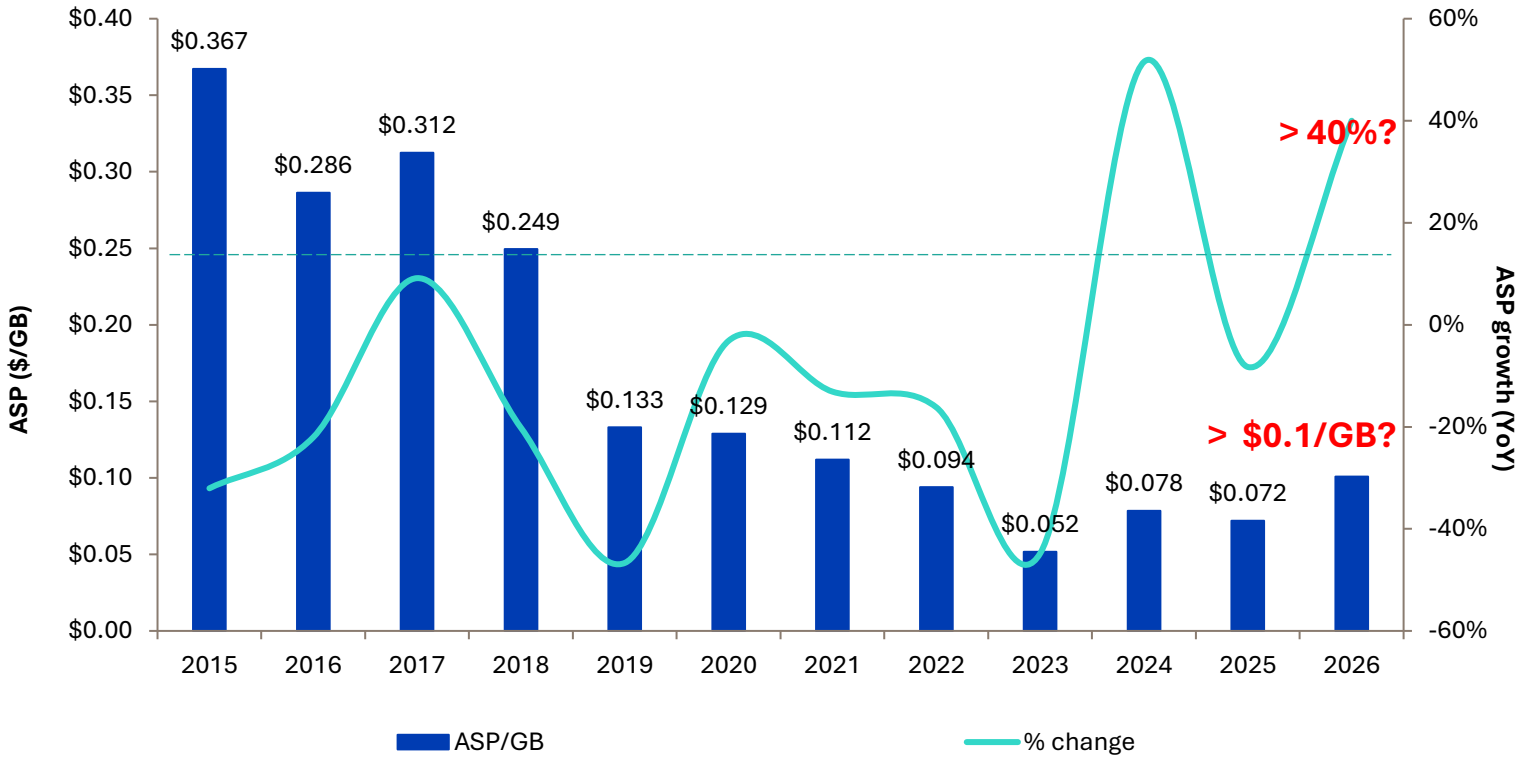
- Chip production can scale faster than infrastructure—data center and power grid buildouts lag behind.
- Power grid expansion often takes longer (3–5 years) than data center construction or chip supply.
- Delays in securing power or transmission capacity may lead to postponed or even canceled AI projects.
- **Timing:** Risk emerges from 2026 onward, if large-scale AI clusters face power shortages or grid connection delays.

AI demand drives NAND prices up 40% by 2026

NAND pricing recovery: Uptrend set to continue through 2026

- NAND pricing has historically followed sharp cycles. After the 2017 peak, prices steadily declined through 2022 and hit multi-year lows in 2023 owing to oversupply and weak demand.
- The 2024 rebound marks the strongest recovery since 2017, driven by supplier utilization cuts, normalized inventories, and surging CSP demand.
- Given this low starting base and tightening supply conditions, the current uptrend has a clear path to continue through 2026.

NAND pricing

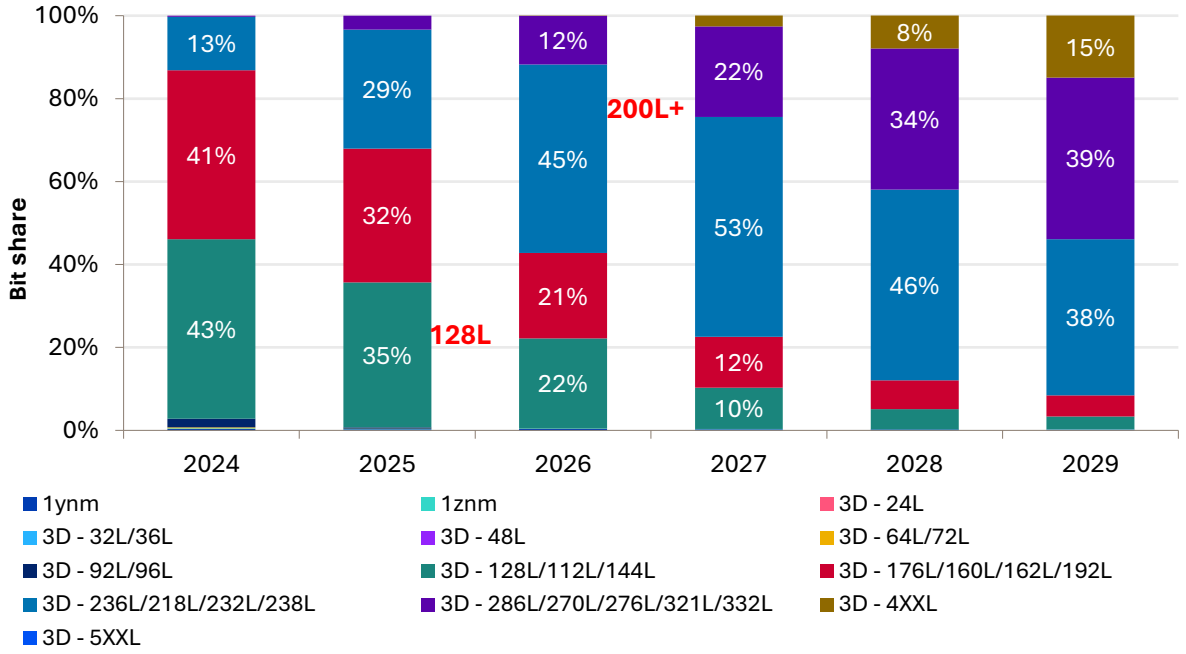


Source: Omdia

NAND technology migration – shifting toward 200L+ and scaling QLC supply through 2026

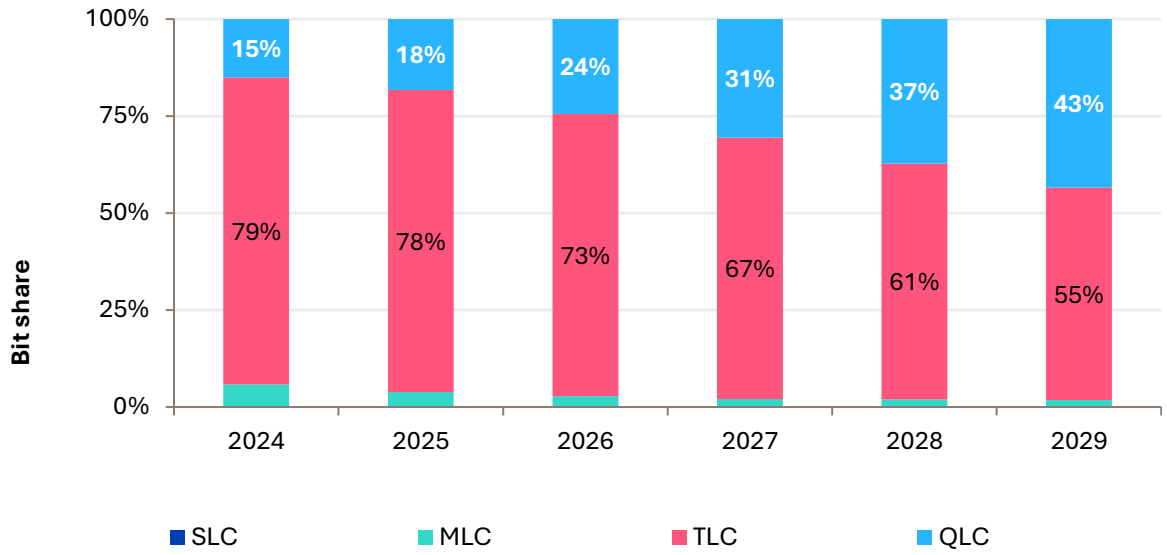
- The industry's shift toward higher layer counts and greater quarter-level cell (QLC) penetration is also constraining supply. These technologies require longer process cycles, more complex stacking steps, and lengthier customer qualifications, meaning the ramp pace is slower than demand growth.

Industry lithography transition



Source: Omdia

Bit mix by cell type



Source: Omdia

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AI boosts SSD and HDD in 2026

AI-driven storage demand across all sectors, supply constraints, and new tech adoption shaping 2026

1

- AI's unprecedented data generation drives surging nearline storage demand, with multimodal and agentic AI inference poised for even stronger growth. On the other hand, storage layer optimization has emerged as equally critical as HBM development in 2025, representing a promising frontier in AI engineering.
- With very limited production expansions, Omdia anticipates that enterprise SSD (ESSD) and enterprise HDD (EHDD) supply constraints will continue into mid-2026, with potential shortages extending through year-end.

2

- With strong AI investment expected in 2026, NAND manufacturers are shifting supply toward enterprise SSDs, but robust demand will potentially drive SSD prices back to 2022 levels.
- In 2026, shortages will drive faster adoption of capacity-boosting technologies, including QLC and HAMR.

3

- Omdia identifies 2026 as QLC ESSD's inflection point—not as an HDD replacement, but because AI inference applications have created compelling use cases.
- With proven reliability and cost advantages, HDDs remain the preferred choice for massive nearline storage, housing over 80% of data center data capacity. Current NAND industry expansion rates cannot feasibly enable mass HDD substitution within the next decade. Omdia projects a 6x cost differential between QLC ESSD and EHDD by 2029.

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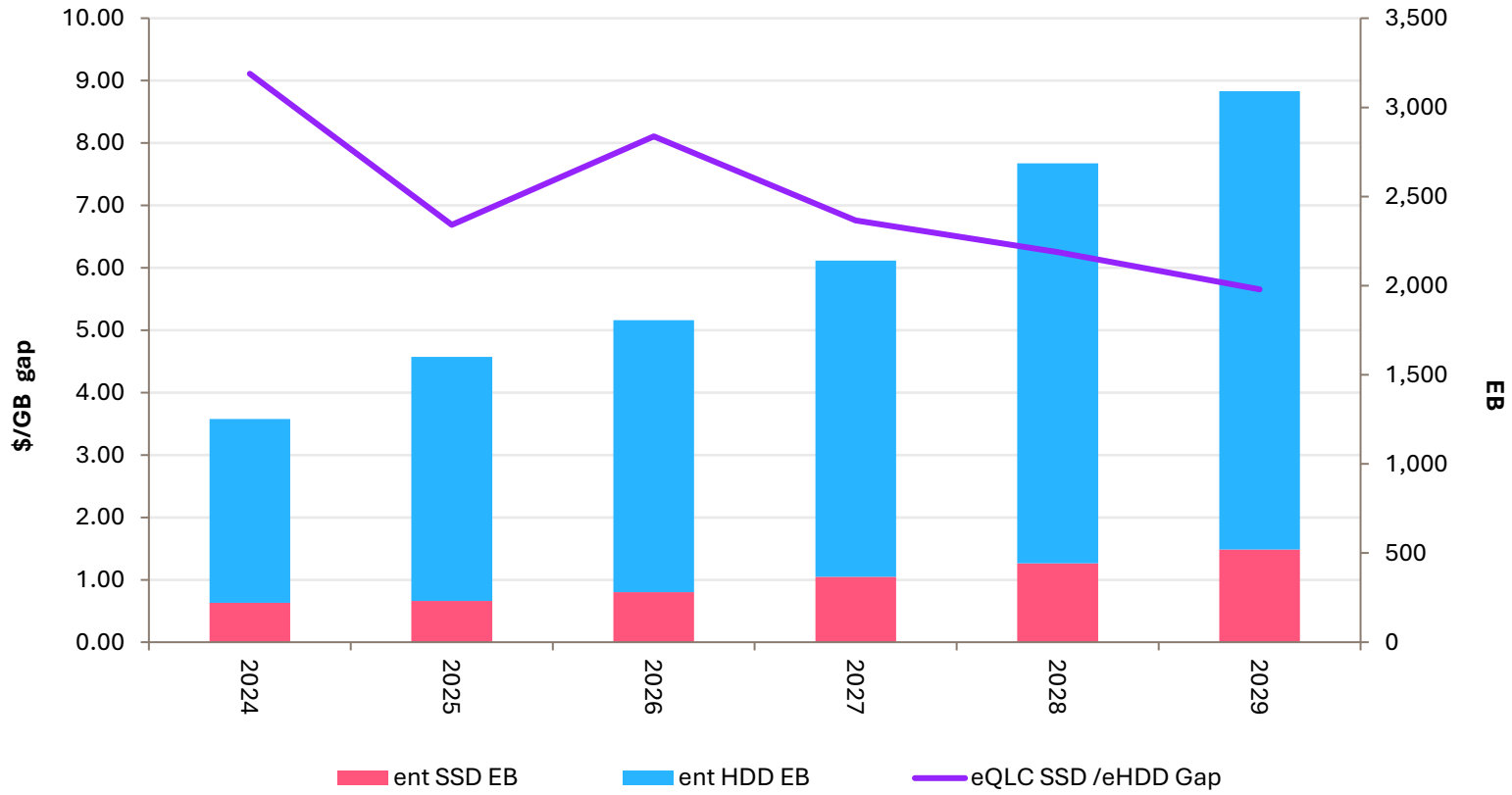
Storage market growth in 2026: Collaboration and strategic partnerships key to meeting AI demand

- For SSD and HDD markets, Omdia projects that 2026 will deliver exceptional growth.
- SSD and HDD manufacturers should leverage market conditions to collaborate with major buyers, establishing agreements that provide visibility to future demand, and consider capacity expansion plans and long-term technology roadmaps to address AI's evolving needs.
- For procurement stakeholders, Omdia recommends establishing partnerships with SSD and HDD suppliers to secure necessary supply commitments. The long-term agreement (LTA) model, widely adopted in the HDD sector, offers a valuable framework for strategic collaboration.

ESSD/EHDD $/GB gap and bit shipment



Source: Omdia

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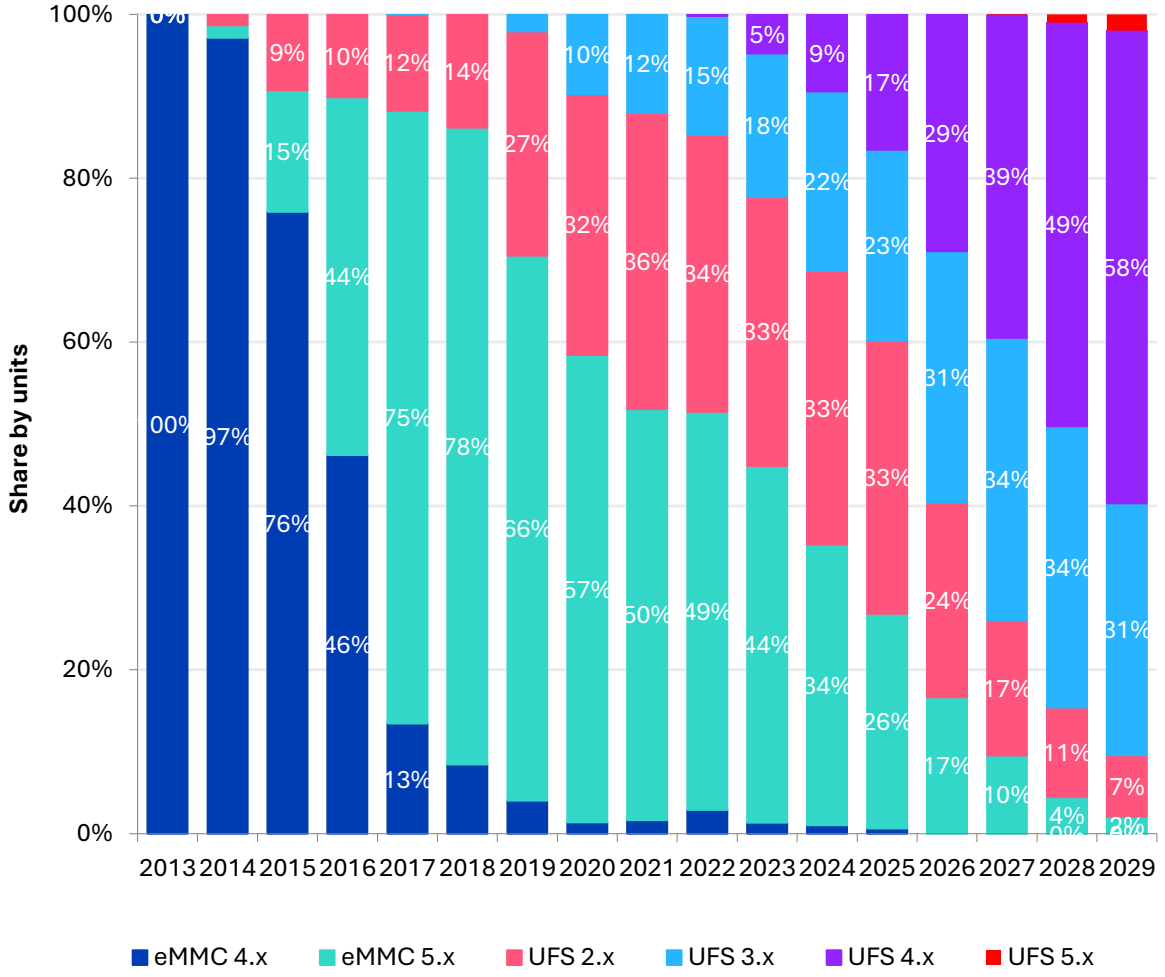
Mobile NAND slows; NOR grows with automotive and edge demand

2026: Mobile NAND enters a BOM-constrained phase

- Mobile NAND: DRAM-driven bill of materials (BOM) pressure slows upgrade momentum in 2026.
  - AI-related DRAM cost inflation is reshaping smartphone memory strategies. Even as NAND pricing firms, OEMs are increasingly unwilling to absorb higher total BOM costs, creating a bottleneck for NAND upgrades.
  - Cost pressure is likely to delay broad UFS 5.0 adoption into later cycles, with OEMs prioritizing inventory discipline and selective SKU upgrades. NAND average selling prices (ASPs) are rising—though less sharply than DRAM—as suppliers tighten allocation and manage the mix.
  - Mobile NAND bit growth is expected to soften in early 2026 before recovering as UFS 4.x becomes mainstream in mid-tier devices.

Smartphone eMMC vs. UFS forecast by units



Source: Omdia

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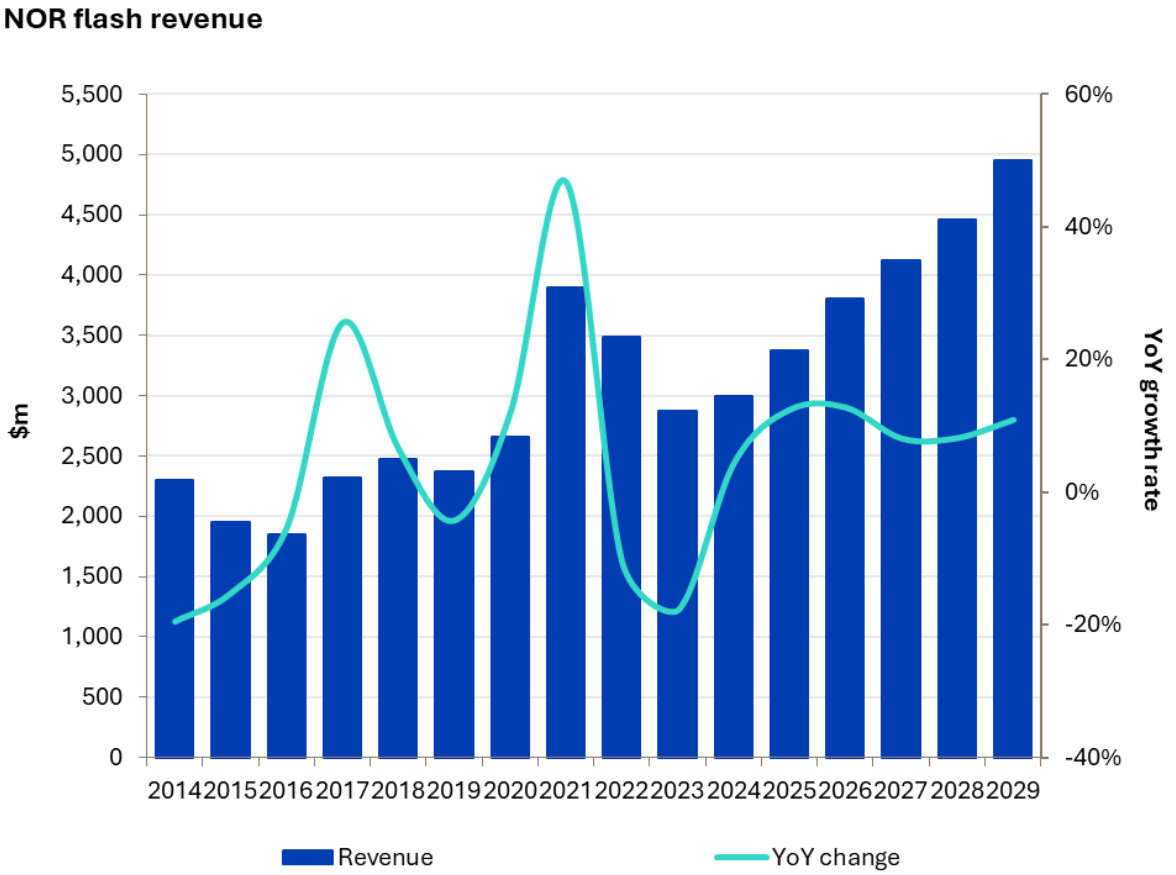
NOR flash: Stable pricing, structural growth

- **NOR flash: Stable pricing and density-led expansion across automotive and edge AI**
  - NOR flash enters 2026 with a fundamentally different profile from DRAM and NAND.
    - Pricing remains stable and largely decoupled from cyclical memory volatility, while demand shifts toward higher-density SPI NOR for automotive, industrial, and true wireless stereo (TWS) applications.
    - Larger firmware and over-the-air (OTA) requirements—alongside edge AI integration—are driving adoption of higher-density NOR flash devices, especially transitioning from 128Mb to 256Mb and beyond.
  - Although unit shipments are plateauing, rising density, long qualification cycles, and stable 55–40nm migrations are sustaining value growth.
  - NOR's steady supply–demand balance positions it for consistent revenue momentum through 2026.



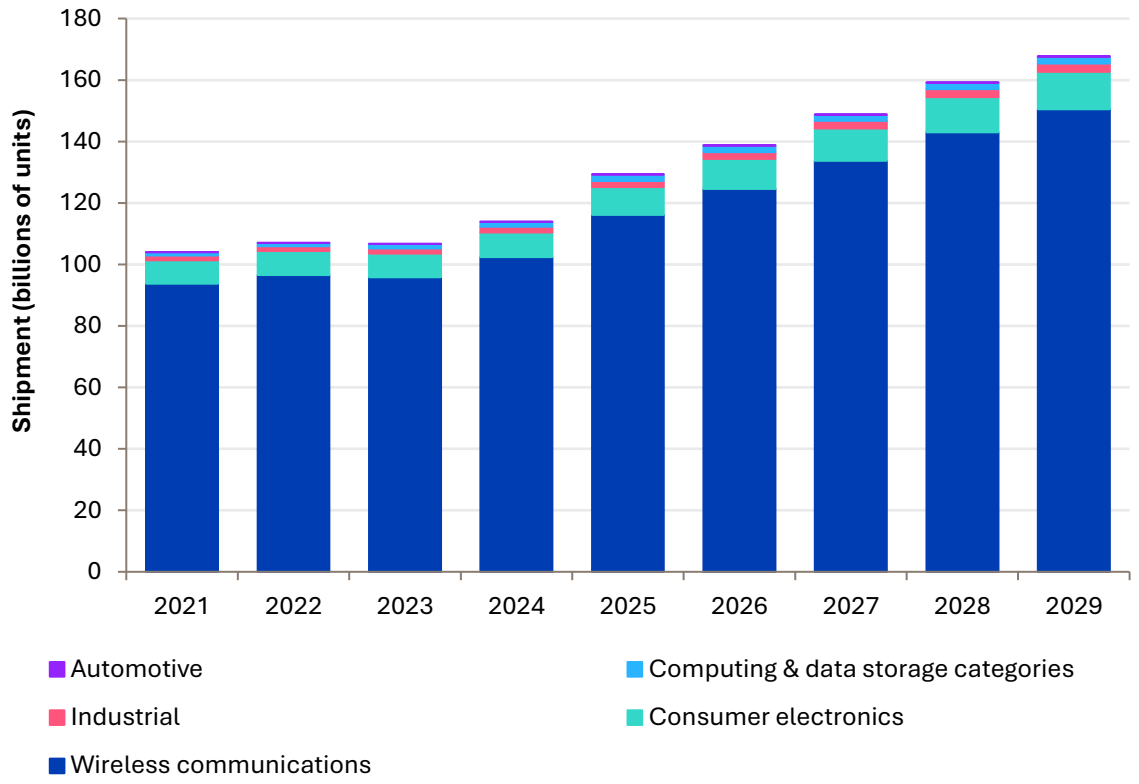
Source: Omdia

MEMS and sensors – AI and IoT driving growth

MEMS & Sensors – AI and IoT driving growth

- The continued expansion of the Internet of Things (IoT) and AI is driving the demand for MEMS and sensors that require less power and higher accuracy in a smaller footprint.
- There is a growing trend to include “smart sensors” that have edge computing capabilities that allow for AI and machine learning integration. These new smart sensors will be crucial for advanced applications, such as autonomous driving and gesture recognition in wearables.
- Automotive – Overall growth will be driven by vehicle electrification, connectivity, and digitalization, with increasing adoption of advanced driver assistance systems (ADAS) projected to support 2026 growth.
- Wireless communications – The category representing by far the largest proportion of sensor component shipments as part of an IoT end device will experience growth driven by an increase in 5G-enabled handsets, which in turn will boost the radio frequency (RF) filter market.
- Consumer electronics – Shifting product mix, including a decrease in shipments for some end products, such as earphones, wearables, and smart speakers, will affect revenue outlook, particularly for MEMS microphones.

Sensor component shipments as a part of an IoT end device



Source: Omdia

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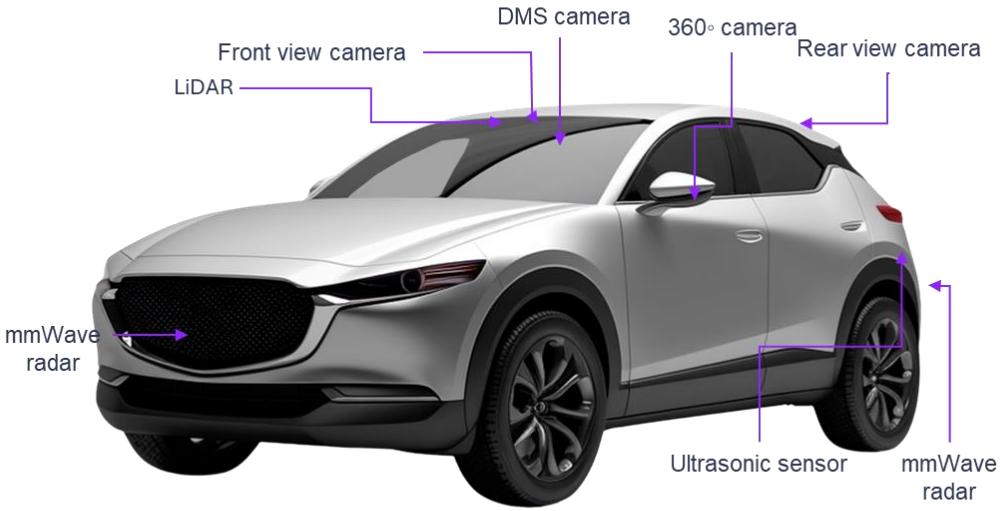
Sensor fusion key for autonomous driving and robot intelligence

Multi-sensor fusion and signal processing integration

- No single sensor can provide a complete picture of a vehicle's environment. Sensor fusion combines data from multiple sources to create a more robust and detailed understanding of the surroundings. This is important for autonomous driving and humanoid robots.
- For advanced computer vision tasks like object recognition, tracking, and scene understanding, on-sensor ISP and neuromorphic pre-processing can efficiently combine data from multiple sensors (cameras [RGB, depth, thermal], LiDAR, radar, and more) to create a richer and more accurate understanding of the environment.
- In 2026, the sensor industry will witness a trend toward multimodal convergence, with cross-disciplinary innovation emerging at the intersection of physical, chemical, and biological sensing technologies. The competitive focus of sensors will shift from merely reducing physical size to integrating more intelligent functions. By incorporating lightweight AI algorithms, frontend processing such as motion estimation and noise reduction will be achieved.

Sensor types on vehicles



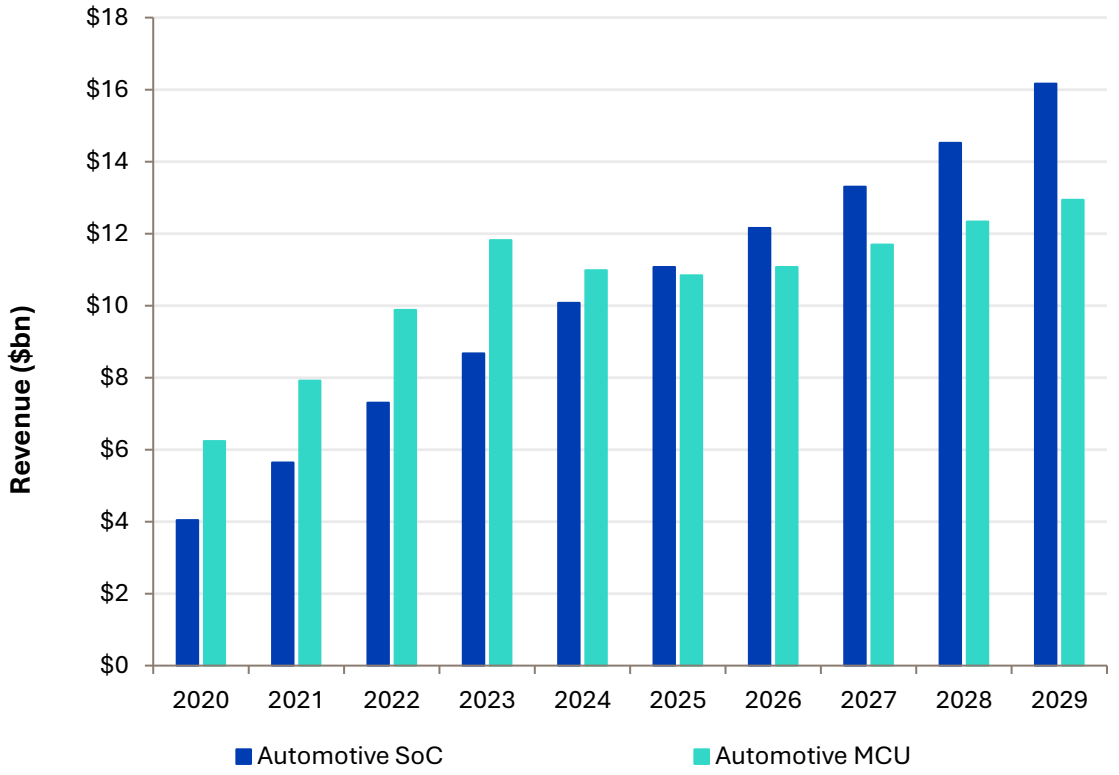
Source: Freepik and Omdia

Intelligent systems reshaping automotive landscape

Shift to software-defined vehicles demands a new semiconductor ecosystem

- In 2026, intelligent systems will play a pivotal role in transforming vehicles into continuously evolving software platforms. Competitive advantage will increasingly stem from the integration of advanced AI-powered services, robust cybersecurity and OTA capabilities, differentiated user experiences, and efficient hardware–software co-design. These shifts will push automotive OEMs to collaborate with a broader range of advanced component suppliers, enabling various platform architectures across diverse vehicle domains and functions.
- At the same time, leading vendors such as NVIDIA will continue to deepen direct collaborations with OEMs and Tier 1 companies, following examples set with GM, Hyundai, and Magna International in 2025. Semiconductor providers will also expand partnerships with software, middleware, and cloud ecosystem players to accelerate adoption and secure long-term design wins across the automotive sector.
- The automotive industry will also continue to transition toward zonal vehicle architectures, which will open up new opportunities for a broader range of vendors (MCUs and SoCs). However, this shift will also introduce challenges, as integrating multiple processor platforms increases software complexity, requiring advanced virtualization, domain partitioning, and careful management of latency and data throughput to ensure seamless system performance.

Automotive SoC and MCU revenue forecast



Source: Omdia

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Power discrete and modules

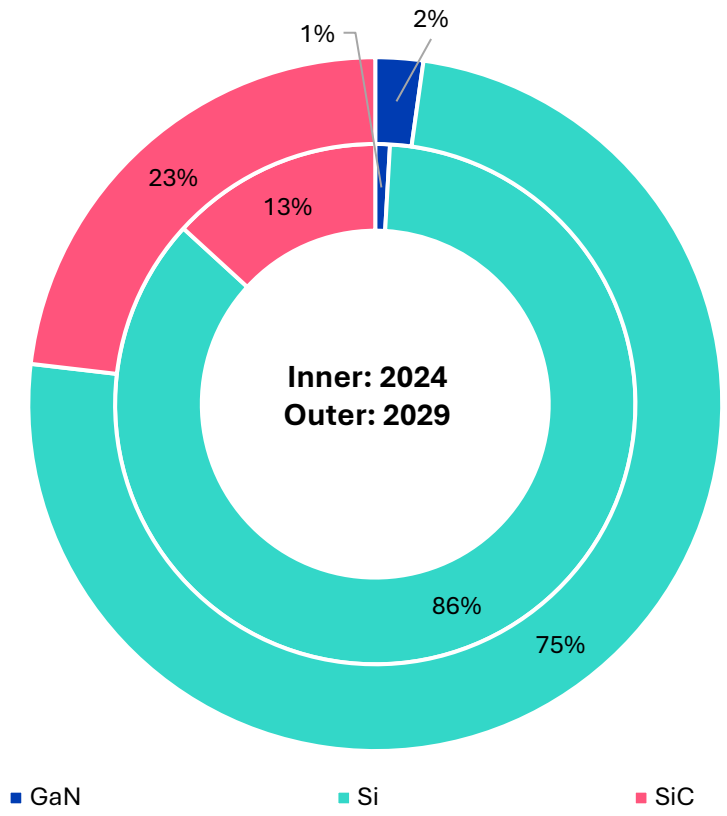
Power discrete and module market forecast by material

Silicon (Si)-based semiconductors still dominate the market, but wide-bandgap semiconductors are forecast to have strong growth through 2029 and are projected to account for over 20% of total revenue in 2026.

The performance of traditional Si-based semiconductors is weakening as major applications like automotive and industrial face challenges.

Wide-bandgap semiconductors showed strong performance. Silicon carbide (SiC) continued to increase in powertrain applications, though annual growth slowed. The gallium nitride (GaN) market remains small, but increasing demand from data centers is expected to be the next growth driver.

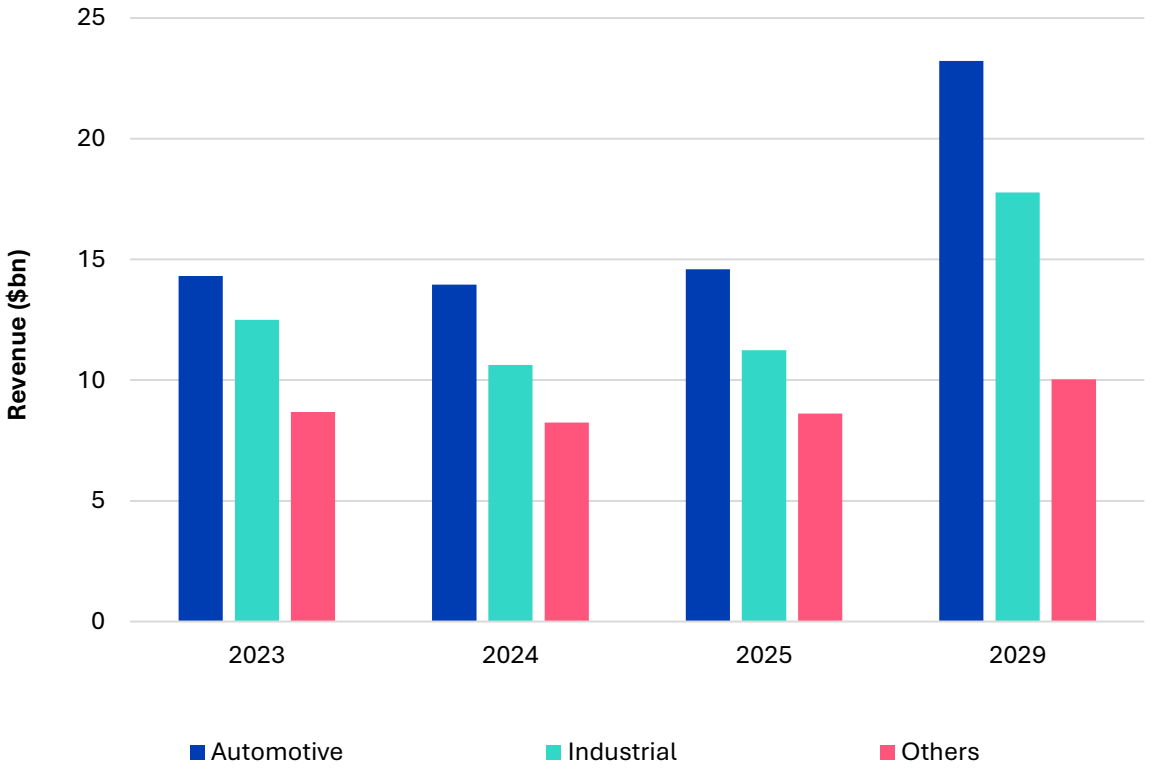
Power discrete and module revenue penetration by material



Source: Omdia

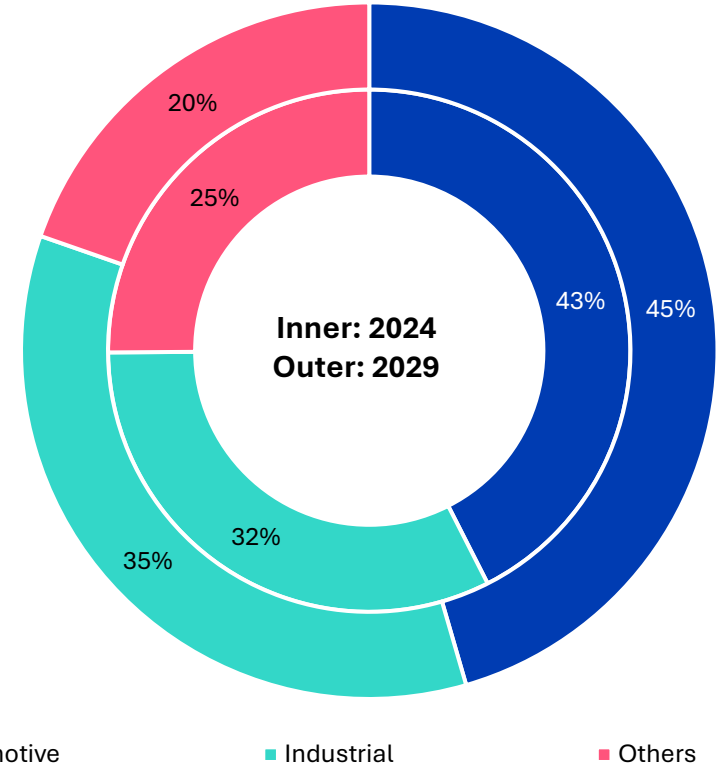
Power discrete and module market forecast by application

Power discrete and module revenue forecast by application



Source: Omdia

Power discrete and module revenue penetration by application

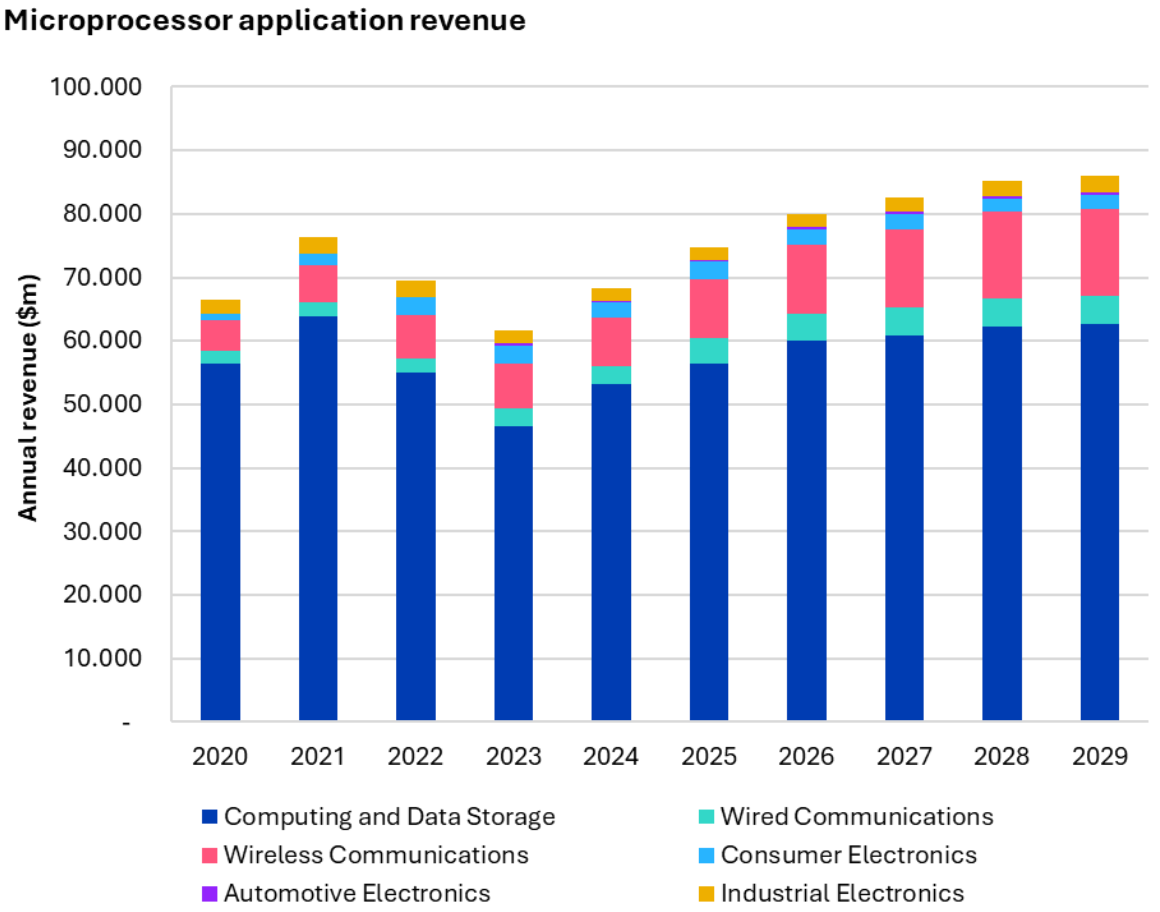


Source: Omdia

CPU – 3nm adoption, Arm architecture, and edge AI growth in 2026

2026 trends: Growing 3nm adoption, Arm architecture growth, and emerging CPU vendors

- In 2026, 3nm adoption is projected to grow strongly, while 5nm adoption will grow more gradually. It has taken 5nm technology four years to achieve 10% penetration, whereas 3nm surpassed that milestone in its first year. The rapid adoption of 3nm is primarily driven by Intel's lithography strategy, which leverages both internal and external resources.
- In 2026, x86's share of core architecture is forecast to continue its decline as Arm-based core architecture is making inroads. This trend is particularly noticeable in PC, servers, and wired communication markets.
- An increasing number of CSPs are developing their own CPUs (also known as application-specific integrated circuits [ASICs]). These ASIC CPUs are not expected to completely replace third-party CPUs owing to considerations around development costs and time to market.
- Emerging CPU vendors: This includes Ampere Computing and a number of China-based companies including Hygon, which offers x86 CPUs exclusively to Chinese customers (most of the other Chinese vendors in this segment are Arm-based).



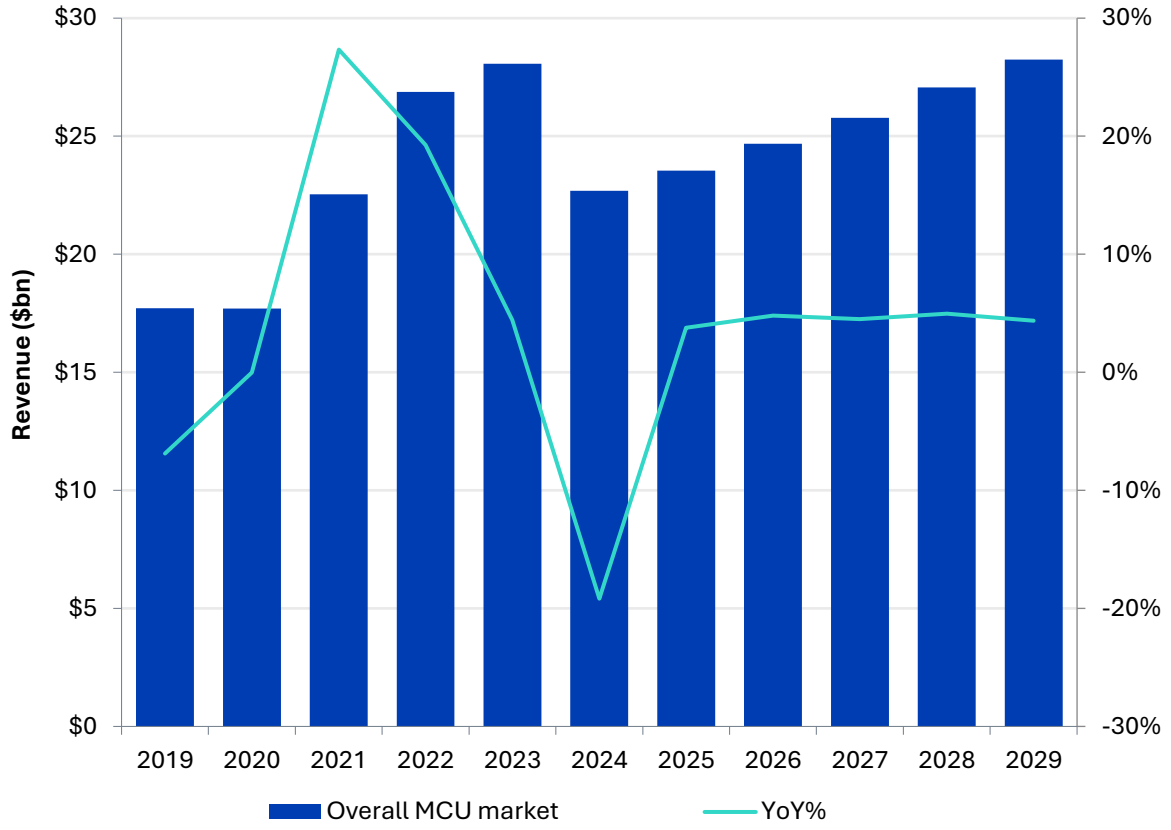
Source: Omdia

MCU recovery in 2025; AI-on-edge growth and M&A in 2026

Improving inventory levels and advances in technology will drive sustained MCU growth in 2026

- The MCU market continued to recover throughout 2025. Looking ahead to 2026, as inventory falls into a healthier range, it is projected that the new order rate will improve.
- With a price cut for entry-level 32-bit MCUs, which is a plus-factor replacement option for 8-bit, and the product system publishing new models, further penetration of 32-bit in the MCU is forecast.
- "All-in-one" cost-optimized system integrated approaches are becoming more widely adopted, requiring the MCU to be embedded with modules. Examples include:
  - MCU + Pre-driver for motor control
  - MCU + Wireless connectivity for edge applications
  - MCU + eNPU for edge Tiny AI workload in automotive, industrial, and consumer segments
- As MCU process nodes advance beyond 28/22nm and 1Xnm, new eNVMs such as ePCM, eRRAM, and eMRAM are increasingly necessary. Although RRAM and MRAM remain under development (expected 2–4 years to complete), both IDMs and foundries such as ST Microelectronics, Infineon, Renesas, NXP, Samsung, GF, TSMC, and UMC continue to invest in this field.

Overall MCU annual market forecast



Source: Omdia

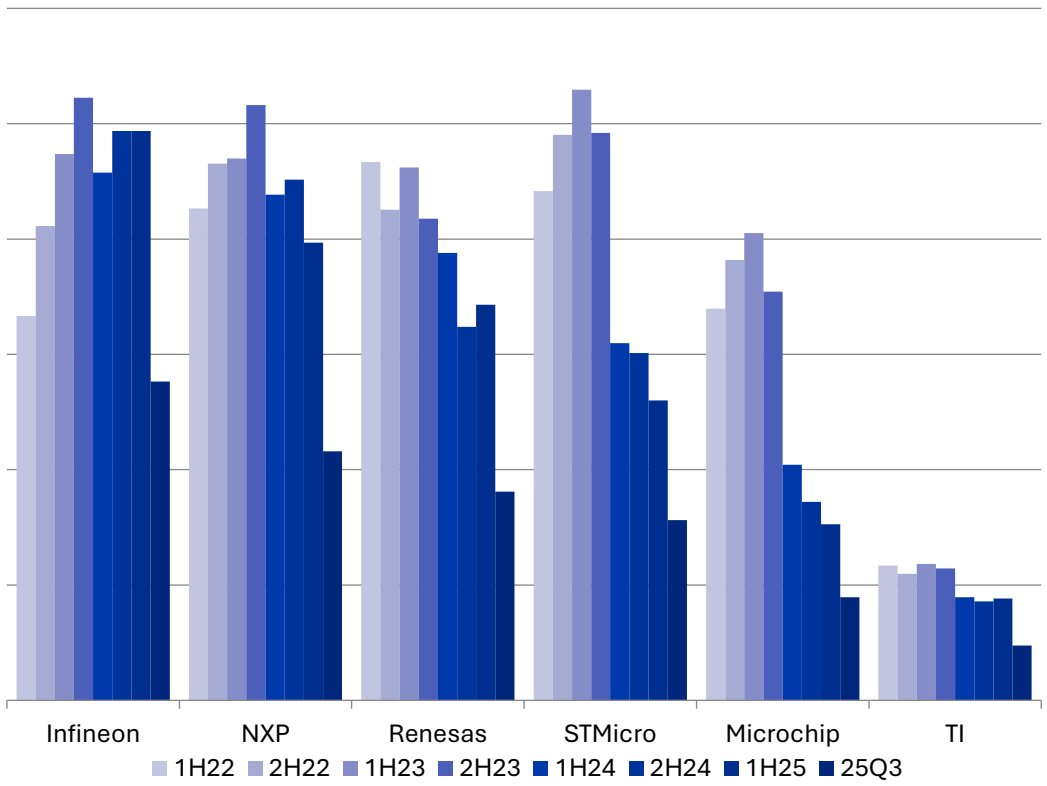
Leading MCU players continue developing comprehensive solution approach through acquisition

- Through mergers and acquisitions, major chip suppliers aim to strengthen their offerings in respective fields, offering more comprehensive solutions that go beyond single chip supply.

Company	Acquisition
Infineon	• $2.5bn acquisition of the **Automotive Ethernet business** from Marvell. • Acquired Imagimob to **enhance AI** enablement on its MCU and MPU TinyML capability for AI edge.
NXP	• Acquired Aviva Links (a provider of Automotive SerDes Alliance) for $243m, to expand NXP's **automotive networking solutions** in the automotive, industrial, and IoT markets. • Acquisition of Kinara, an industry leader in high-performance, energy-efficient, and programmable discrete **NPUs**.
STM	• Acquired DeepLite, a startup focused on AI deep learning and **AI model quantization** and optimization at the edge site. • Acquired NXP's MEMS sensor business for $950m.
Renesas	• Acquired Reality AI to enhance TinyML solution offering.

Source: Omdia

Top six MCU suppliers by revenue in 1H25



Source: Omdia

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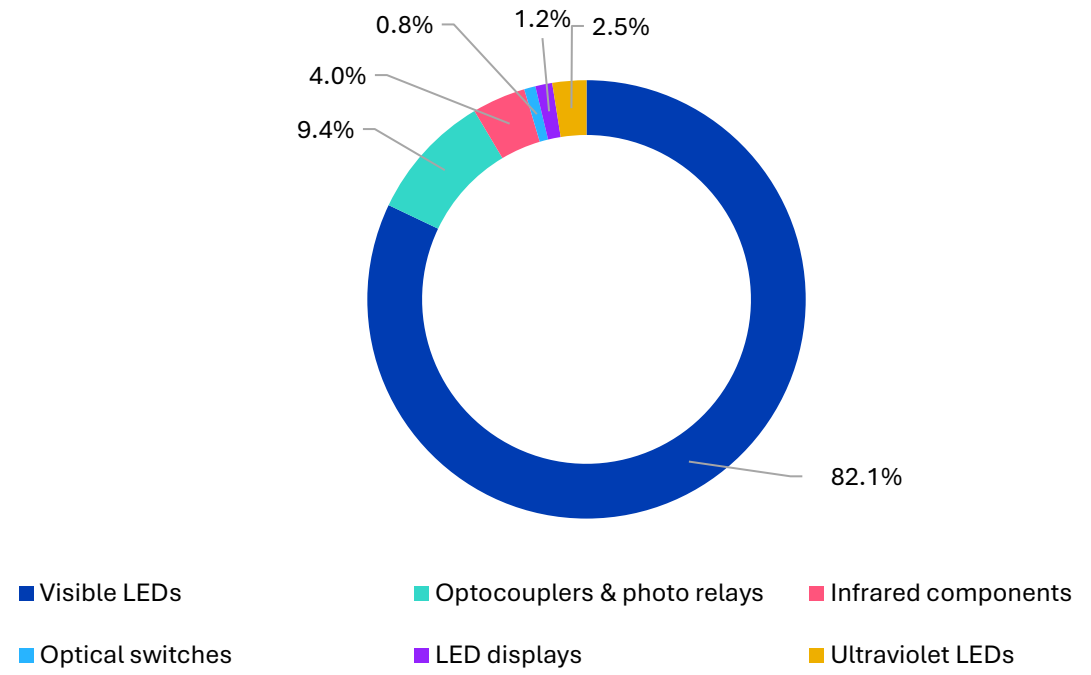
Will optoelectronic components pivot in 2026?

Will optoelectronic “winter” end in 2026?

- The global LED industry has been trapped in a prolonged “market winter” since 2023, with demand stagnating and recovery still out of sight. The world’s largest LED maker, Nichia, reported its 1H25 results and cited persistent inventory corrections, which continue to weigh on sales, forecasting a 3–5% YoY decline. Lumileds, another legacy LED maker, has been acquired by Sanan Opto, signaling a potential power shift in the premium LED product category from traditional Japanese and European players toward Chinese manufacturers. In addition, Samsung Electronics is progressively withdrawing from lower-tier LED operations. Mini LED once appeared to be the next growth driver, but rapid ASP erosion is severely undercutting profitability, turning what seemed to be a premium segment into another commoditized battlefield. All in all, the LED market continues to consolidate, margins continue to tighten, and China continues to move up the value chain.

Optoelectronic components market distribution, 2026



Source: Omdia

Top six optoelectronic components companies for the past four years

NICHIA, ams OSRAM, SEOUL, SAMSUNG, LITEON, LUMILEDS, EVERLIGHT

Source: Companies

Growth drivers 2026	Laggards 2026
• LEDs • Optocouplers • Infrared components • Ultraviolet LEDs	• Optical switches • LED displays

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Appendix

Appendix

Further reading

Semiconductors

The Global Semiconductor Shift: Tariffs, Tech, and Tomorrow

How Trade Tensions are Reshaping the Global Semiconductor Landscape

The role of automotive semiconductors in the transition to EV's

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Appendix

Omdia consulting

We hope that this analysis will help you make informed and imaginative business decisions. If you have further requirements, Omdia's consulting team may be able to help you. For more information about Omdia's consulting capabilities, please contact us directly at consulting@omdia.com.

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