



TSMC Debuts A13 Technology at 2026 North America Technology Symposium

Newest Node Pushes Density Scaling and Energy Efficiency to New Heights to Address Industry's Most Demanding Applications

SANTA CLARA, CA, Apr. 22, 2026 -- TSMC (TWSE: 2330, NYSE: TSM) today debuted its latest innovation in its most advanced process technology at the Company's 2026 North America Technology Symposium. TSMC's new A13 process is a direct shrink of its industry-leading A14 node announced in 2025, enabling even more compact and efficient designs to address insatiable customer demand in computational requirements for next-generation artificial intelligence, high performance computing (HPC), and mobile applications.

Representing TSMC's commitment to continuous improvement, A13 provides 6% area savings from A14. Design rules are fully backward compatible with A14, enabling customers to quickly migrate their designs to TSMC's latest nanosheet transistor technology. In addition, A13 delivers increased power efficiency and performance gains through design-technology co-optimization, and is scheduled to enter production in 2029, one year after A14.

A13 was one of many technology innovations highlighted at TSMC's North America Technology Symposium in Santa Clara, California, which kicks off the event series around the world in the coming months. With the theme of "Expanding AI with Leadership Silicon," the technology symposiums are TSMC's largest annual customer events, showcasing the Company's breakthroughs in technology development and manufacturing service.

"At TSMC, we understand our customers are always looking ahead to their next innovation and they come to us for a reliable stream of new silicon technologies, like A13, meticulously engineered to be ready for high-volume production right when their visionary new designs demand them," said TSMC Chairman and CEO Dr. C.C. Wei. "TSMC's advanced process technologies lead the industry in density, performance and power efficiency, and we continually strive to make them even better for our customers' future products, ensuring customers' success as their most reliable technological partner."

Other new technologies unveiled at the North America Technology Symposium include:

Advanced Logic

- At the event, TSMC is also previewing its A14 platform enhancement **A12**, which features Super Power Rail technology to provide backside power delivery for AI and HPC applications. A12 is also scheduled to enter production in 2029.



- TSMC continues to advance its 2nm platform with the introduction of **N2U**, which employs design-technology co-optimization to reach speed gains of 3-4% or power reduction of 8-10% and a 1.02-1.03X logic density improvement from N2P. A balanced option for AI, HPC, and mobile applications leveraging the process maturity and strong yield performance of the 2nm technology platform, N2U is scheduled for production in 2028.

TSMC 3DFabric® Advanced Packaging and 3D Silicon Stacking

- To support AI demand for more computing power and memory in a single package, TSMC continues to expand its Chip on Wafer on Substrate (CoWoS®) technology to integrate more silicon. The Company is now producing 5.5-reticle size CoWoS and planning for even larger versions. A **14-reticle size CoWoS**, capable of integrating approximately 10 large compute dies and 20 HBM stacks, is slated for production in 2028. This will be followed by an expansion to beyond 14 reticles in 2029. These new offerings provide customers with more options for AI compute scaling and complement TSMC's 40-reticle size SoW-X System-on-Wafer technology also expected in 2029.
- TSMC is also offering its TSMC-SoIC® 3D chip stacking technology on its most advanced technology platform, with **A14-to-A14 SoIC** set to be available for production in 2029. It will provide 1.8X higher die-to-die I/O density compared with N2-on-N2 SoIC, supporting higher bandwidth of data transfer between stacked chips.
- TSMC's Compact Universal Photonic Engine (TSMC-COUPETM) is set to reach a key milestone with a true co-packaged optics solution using **COUPE on substrate** beginning production in 2026. By integrating the COUPE optical engine directly inside the package, TSMC achieves 2X power efficiency and 10X latency reduction versus a pluggable version on the circuit board. The technology is featured in a 200Gbps micro-ring modulator, a highly compact and energy-efficient solution to move data between racks in data centers.

Automotive and Robotics

- Advanced Driver Assistance Systems (ADAS) and autonomous vehicles require leading-edge technologies along with stringent quality and reliability standards. Physical AI applications, such as humanoid robots, are adopting similarly demanding requirements. To address these needs, TSMC announced **N2A**, the first automotive-grade process technology with nanosheet transistors. N2A provides 15-20% speed gain at the same power compared with N3A and is scheduled to complete AEC-Q100 qualification in 2028. Furthermore, TSMC is making "Auto-Use" design kits available within its N2P process design kit (PDK), enabling customers to factor in automotive usage conditions in the design. This allows customers an earlier design start before N2A process is fully qualified.
- TSMC's efforts to speed up automotive product cycles are already paying off for customers as **N3A** enters production in 2026. With the N3 "Auto Early" program, customers were able



to start designs in 2023, and today more than 10 products are planned on N3A technology to make automobiles smarter, greener, and safer for consumers.

Specialty Technology

- TSMC is the first to bring high voltage technology into the FinFET era in 2026 with its **N16HV** process aimed at display driver applications. For smartphone display drivers, N16HV will increase gate density by 41% and reduce power by 35% compared to TSMC's N28HV process. For near-eye displays, N16HV can shrink die area by 40% and reduce power by over 20%, enhancing the usability of applications such as smart glasses.

About TSMC

TSMC pioneered the pure-play foundry business model when it was founded in 1987, and has been the world's leading dedicated semiconductor foundry ever since. The Company supports a thriving ecosystem of global customers and partners with the industry's leading process technologies and portfolio of design enablement solutions to unleash innovation for the global semiconductor industry. With global operations spanning Asia, Europe, and North America, TSMC serves as a committed corporate citizen around the world.

TSMC deployed 305 distinct process technologies, and manufactured 12,682 products for 534 customers in 2025 by providing the broadest range of advanced, specialty and advanced packaging technology services. The Company is headquartered in Hsinchu, Taiwan. For more information please visit <https://www.tsmc.com>.

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