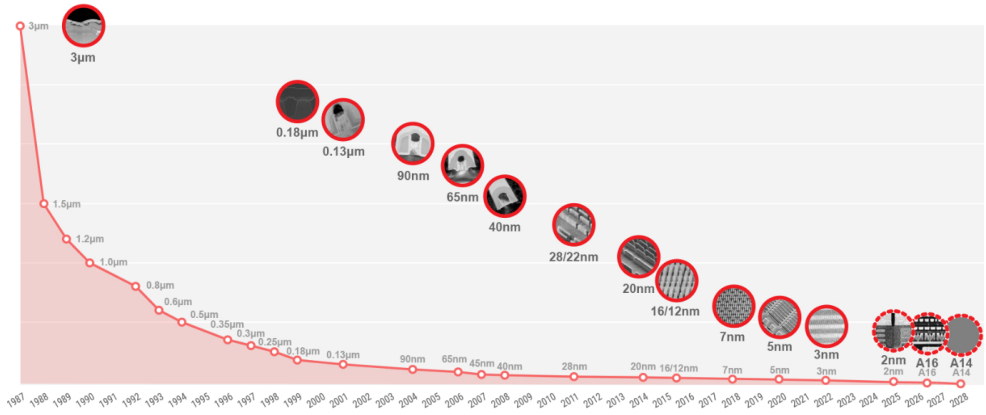
16/12nm Technology

TSMC has always insisted on building a strong, in-house R&D capability. As a global semiconductor technology leader, TSMC provides the most advanced and comprehensive portfolio of dedicated foundry process technologies.



A14 Technology

A14 technology is TSMC's next cutting-edge logic process that achieves full-node power, performance and area through dimensional scaling. A14 is designed to drive AI transformation forward by delivering...

A16 Technology

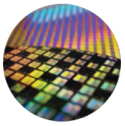
TSMC A16™ technology integrates leading nanosheet transistors with innovative Super Power Rail (SPR) solutions, bringing greatly improved logic density and performance. SPR improves logic density and...

2nm Technology

TSMC's 2nm (N2) technology development is on track and made good progress. N2 technology features first-generation nanosheet transistor technology, with full-node strides in performance and power consumption...

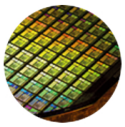
3nm Technology

In 2022, TSMC became the first foundry to move 3nm FinFET (N3) technology into high-volume production. N3 technology is the industry's most advanced process technology, offering the best...



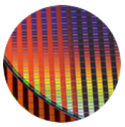
5nm Technology

In 2020, TSMC became the first foundry to move 5nm FinFET (N5) technology into volume production and enabled customers' innovations in smartphone and high-performance computing (HPC) applications...



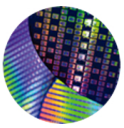
7nm Technology

In 2018, TSMC became the first foundry to start 7nm FinFET (N7) volume production. The N7 technology is one of TSMC's fastest technologies to reach volume production and provides optimized manufacturing...



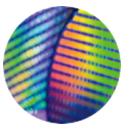
16/12nm Technology

In 2013, TSMC became the first foundry to begin 16nm Fin Field Effect Transistor (FinFET) technology risk production and later in 2014, the first foundry to deliver a fully functional 16nm FinFET customer...



20nm Technology

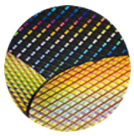
TSMC became the world's first semiconductor company that began 20nm volume production, using its innovative double patterning...



TSMC EX1044
TSMC v. Marlin
IPR2025-01527

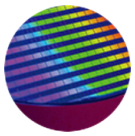
22nm Technology

The 22nm Ultra-Low Power (22ULP) process technology is derived from TSMC's industry-leading 28nm technology. It delivers enhanced performance and cost efficiency, making it suitable for...



28nm Technology

In 2011, TSMC became the first foundry that provided 28nm General Purpose process technology. Following this, TSMC continued to...



40nm Technology

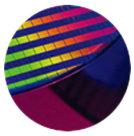
TSMC led the foundry segment to start the volume production of a variety of products for multiple customers...

65nm Technology

TSMC became the first foundry to begin 65nm risk production in 2005 and passed product certification the following year...

90nm Technology

TSMC became the first semiconductor company to produce fully-functional 90nm chips using immersion lithography technology...



0.13μm Technology

TSMC launched the semiconductor industry's first 0.13μm low-k, copper system-on-a-chip (SoC) process technology...

0.18μm Technology

TSMC's 0.18μm logic technology marked a significant milestone in semiconductor manufacturing and today provides a reliable and proven solution for a wide range of applications. This mature process node...

3μm Technology

TSMC has persistently maintained a "building in-house R&D" strategy since its founding in 1987, which has given the company...

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