

Price List for Intelligent Silicon Photonics Technology for Data Center Interconnects



Summary of Content

Silicon photonics modules for data center interconnects typically range from several hundred to several thousand dollars per transceiver, depending on speed, integration, and volume.

Cost Factors

The price of silicon photonics technology is influenced by several key factors:

- **Data Rate and Bandwidth:** Transceivers supporting 100G, 400G, or 800G speeds have higher costs due to more complex modulators, photodetectors, and wavelength-division multiplexing components .
- **Integration Type:** Co-packaged optics (CPO) that integrate optical engines directly with switch ASICs or processors are more expensive than standard pluggable modules because of tighter thermal management and packaging requirements .
- **Volume and Manufacturing:** Silicon photonics leverages CMOS fabrication, but initial design and prototyping costs are high. Large-scale production reduces per-unit cost, but lead times can extend to months .
- **Component Complexity:** Active PICs with modulators and photodetectors cost more than passive chips with only waveguides and splitters . Lasers, often hybrid-integrated, are a significant cost contributor .

Article Content

Silicon Photonics Platform for Next Generation Data ...

TSMC has developed an advanced silicon photonics foundry platform tailored to meet the increasing demands of next-generation

Can Silicon Photonics Surpass 400 Gbps in Data Centers?

Silicon photonics hits a new milestone with 448 Gbps data rates. What's next for data centers?

Integrated Photonics Transform Data Center Interconnects (DCI)

In particular, integrated photonics – also known as photonic integrated circuits (PICs) – are on the verge of creating a new paradigm

Silicon Photonics Technologies: Gaps Analysis for Datacenter Interconnects

Abstract We give an overview of optical interconnect requirements for large scale datacenters. We then make a comparison between

Silicon photonics for high-speed communications and photonic signal ...

Leveraging on the mature processing infrastructure of silicon microelectronics, silicon photonic integrated circuits may

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Silicon photonics optical interconnects for AI data centers market was valued at \$2.3 billion in 2025, projected to

Silicon Photonics Market Size, Trends & Forecast, 2026-2033

Data centers are increasingly adopting Silicon Photonics to achieve faster, more reliable, and energy-efficient data

The next-gen data center brings photonic interconnects

Discover how AI factories and photonic fabrics are transforming the data center into an efficient, scalable

The Global Silicon Photonics and Photonics Integrated Circuits Market ...

Silicon Photonics is a technology that combines photonics and electronics on a single chip. It is a subset of optoelectronics, which is

Silicon Photonics Optical Interconnects

Credo is a provider of end-to-end Silicon Photonics solutions, addressing the constantly growing needs of hyper-growth data players.

Roadmapping the next generation of silicon photonics

The current generation has led to a proliferation of integrated photonic devices from thousands to millions-mainly in

Silicon Photonics Market Size Forecast Report 2026-2030

A silicon photonics engine is a high-performance device that integrates optical components and electronics on a single chip to enable

Top CPO and Silicon Photonics Companies for AI Data Centers

A practical map of companies and technologies tied to co-packaged optics, silicon photonics, and future AI data center interconnect.

Silicon photonics and the future of optical connectivity in the data center

The bandwidth growth inside data centers has driven significant innovations in networking and optical connectivity. We'll review

Silicon Photonics for Data Center Design | Synopsys Blog

Learn how we're enhancing silicon photonics and data center infrastructure design through our work with OpenLight to

Advances in silicon photonics for high-capacity optical interconnects ...

Abstract. We review our recent progress on advanced silicon photonic devices and photonic circuits, including advanced grating

Industry insight: photonics to scale AI data centers

The rapid evolution of artificial intelligence (AI) and its high-performance demands on computational systems have

Reliable 50Gb/s silicon photonics platform for next-generation data ...

The next generations of data centers require a scalable optical transceiver technology. In this paper we present a silicon photonics

Silicon photonics

Discover STMicroelectronics' advancements in silicon photonics technology, driving innovation in high-speed data communication

Silicon Photonics for AI Data Centers Market 2026

This market research report provides a comprehensive analysis of the Silicon Photonics for AI Data Centers Market, covering the

Challenges in silicon photonics modulators for data center

In addition, CMOS technology delivers reliable and low-cost devices, which makes it promising for large-scale

Optical Interconnects Finally Seeing the Light in Silicon Photonics ...

By now, it is clear that electrical interconnects are posing the bottleneck for further advancements in many-core systems and

Photonic Integrated Circuits for Data Center Interconnects

Optical transceivers for data center interconnects (DCI) are projected to become a multi-billion dollar market by the end of this

Silicon Photonics The Key to Data Center Connectivity

THE KEY TO DATA CENTRE CONNECTIVITY Data centre traffic growth is driving the need for high-speed connectivity between

Photonic Integrated Circuits: Research Advances and Challenges in ...

Silicon photonics, serving as a cornerstone technology in modern information technology, demonstrates significant

Intel® Silicon Photonics

Next-generation process technology for disruptive cost structure, size, and integration. Maturity – Our field-proven Intel® Silicon

Photonic integrated circuit technology landscape 2026 | Patsnap

Silicon photonics vs. InP vs. thin-film LiNbO₃: a 2026 PIC technology landscape covering data center demand,

Silicon photonics technology for next-generation datacenter ...

Silicon photonics (SiPho) has been widely recognized as an attractive technology for integrating the essential building blocks of

Unlocking The Potential Of Silicon Photonics For High-Speed Data Center ...

Many research teams and commercial companies are developing silicon photonics applications. Some of their work

Silicon Photonics Transforms Data Centers and AI Advancement

How silicon photonics promises to accelerate AI computations and addresses critical challenges faced by modern

Silicon photonics for terabit/s communication in data centers and ...

Abstract Silicon Photonics Technology using sub micrometer SOI platform, which commercially emerged at the

Silicon photonics: accelerating growth in the race for high-speed ...

This edition explores the photonics landscape, emphasizing materials for PICs, optical interconnects, and other

Photonic Interconnects

Photonic interconnects are defined as optical pathways utilized for data transmission in integrated photonics, facilitating efficient

Silicon Photonics and Co-Packaged Optics at the Heart of Next ...

Yole Group unveils its latest photonic market and technology analyses, Silicon Photonics 2025 and Co-Packaged

Silicon Photonics Multi-Project Wafer (MPW) Pricing — AIM Photonics

AIM Photonics offers competitive pricing on its silicon photonics Multi-Project Wafer (MPW) services with shortened design time,

Integrated Photonics | Transitioning to End-to-End Optical I/O

Photonics offers superior reach, bandwidth density, power consumption, and latency in high-speed networks and provides rack-to

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