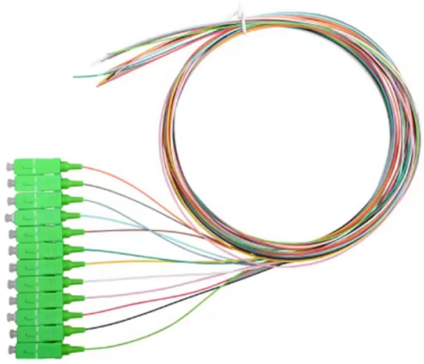
Cost Comparison Table of Silicon Photonics Modules



Overview

Cost Comparison Table of Silicon Photonics ModulesCost Comparison Table of Silicon Photonics Modules This report categorizes the photonic integrated circui.

Key Takeaways

Silicon photonics modules typically range from $1,000 to $5,000 per unit, depending on speed, integration, and application.Estimated Pricing

The price of silicon photonics modules varies widely based on data rate, integration level, and manufacturer. For example, 100G transceivers are generally at the lower end of the price spectrum, while 400G and 800G modules for hyperscale data centers or high-performance computing (HPC) can cost several thousand dollars per unit. Market reports indicate that the global silicon photonics modules market is projected to reach $3.27 billion by 2025, reflecting high adoption in data centers, cloud computing, and AI-driven applications, which implies per-unit costs in the $1,000–$5,000 range depending on volume and specifications .

Factors Affecting Price
• Data Rate and Bandwidth: Modules supporting higher speeds (400G, 800G) are more expensive due to advanced photonic integration and co-packaged optics .

• Integration Level: Modules with co-packaged optics or on-chip integration reduce power consumption and footprint but increase manufacturing complexity, affecting cost .

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• Manufacturer and Market Share: Leading companies like Intel, Cisco Systems, and InPhi (Marvell) dominate the market, controlling pricing through proprietary technology and economies of scale .

• Volume and Supply Chain: Bulk purchases for hyperscale data centers can reduce per-unit cost, while smaller orders for specialized applications may be more expensive .

• Technological Advancements: Adoption of silicon-on-insulator (SOI) substrates, heterogeneous laser integration, and CMOS-compatible processes can influence module pricing by improving performance and reducing production costs .
Market Outlook

The silicon photonics modules market is growing rapidly, with a CAGR of 24–29% projected through 2031, driven by AI, cloud computing, and high-speed data transmission needs . As production scales and technology matures, prices are expected to gradually decrease, especially for widely adopted 100G and 400G modules, while cutting-edge 800G modules may remain at the higher end of the price spectrum. In summary, while exact prices vary by specification and supplier, most silicon photonics modules currently cost between $1,000 and $5,000 per unit, with higher-speed and highly integrated modules commanding premium pricing.

Article Content

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Global Silicon Photonics Modules Market Size, Industry Growth ...

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Presentation

SM-optics provides much longer distances and supports wavelength-division multiplexing (WDM). With MM optics such as VCSEL,

Silicon Photonics Market Size & Share Analysis

Our study treats the silicon photonics market as the total annual revenue generated from components and modules

Silicon Photonic Module 2026-2034 Analysis: Trends, Competitor

This comprehensive report delves into the dynamic Silicon Photonic Module market, analyzing its trajectory from 2019

Silicon Photonics Market Size, Share and Trends

Silicon photonics is a technique that employs semiconductor-grade silicon to integrate photonic circuits and electronic components

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Silicon Photonics vs. Traditional Optical Modules: Key Differences for 800G & 1.6T Data Centers Description: As data

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Semiconductor Manufacturing Costs Explained: $2,500 to $20,000 Per ...

Quick answer: Semiconductor chip manufacturing costs range from $1–5 for a simple IoT chip (28nm) to

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A clear fabless path to silicon photonics R&D and low volume production is taking shape. Current low volume

Photonic Integrated Circuits (PICs) for Next Generation Space

Silicon photonics (SOI) is CMOS-compatible. CMOS infrastructure provides well controlled and rapidly scalable fab environment

Presentation

With MM optics such as VCSEL, the lower end is limited by cost (in comparison to copper) and the upper end by performance. The

Silicon PIC market growing at 45% CAGR from $95m in 2023 to

Specifically, the market for silicon photonic integrated circuit (PIC) die is estimated to be increasing at a compound

Integrating silicon photonics with complementary metal–oxide ...

Complementary metal–oxide–semiconductor-integrated silicon photonics offers a scalable path to high-bandwidth, low

The perspective of all-silicon photonics and systems

While integrating diverse materials with silicon has enhanced the functionality of photonic

Relative Cost Analysis on IM-DD vs Coherent for 800G-LR

400G LR4 (IM-DD) vs. 400G-ZR (Coherent) Relative Cost ... Note: The authors are not aware of public sources for the

Techno-Economic Comparison of Silicon Photonics and Multimode VCSELs

Recent technical and commercial milestones in Silicon Photonics technology including its introduction into commercial

Silicon Photonics Market Size Forecast Report 2026-2030

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Silicon Photonics market size stood at $3.55 billion in 2026 and is projected to reach $8.77 billion by 2030 at a 25.4% CAGR. Key

Silicon Photonics Comes of Age

Integrated silicon photonics modules are also more reliable and scalable. Silicon photonics modules require fewer, less

Silicon Photonics in Pluggable Optics White Paper

Silicon photonics technology has long been of interest in the optical networking industry and in recent years has gained a major

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Roadmapping the next generation of silicon photonics

In this section, we describe the top technical impediments to the success of various silicon photonics applications (Table 5),

Heterogeneous Integration Technology Drives the Evolution of Co

Innovative explorations in silicon photonics play an important role in FOWLP technology. Silicon photonics allows the

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Chapter 2, to profile the top manufacturers of Silicon Photonics Modules, with price, sales quantity, revenue, and global market share

Silicon Photonics Companies

The increasing need for high-speed data transport, as well as the need for energy-efficient solutions in data centers and AI, are the

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