

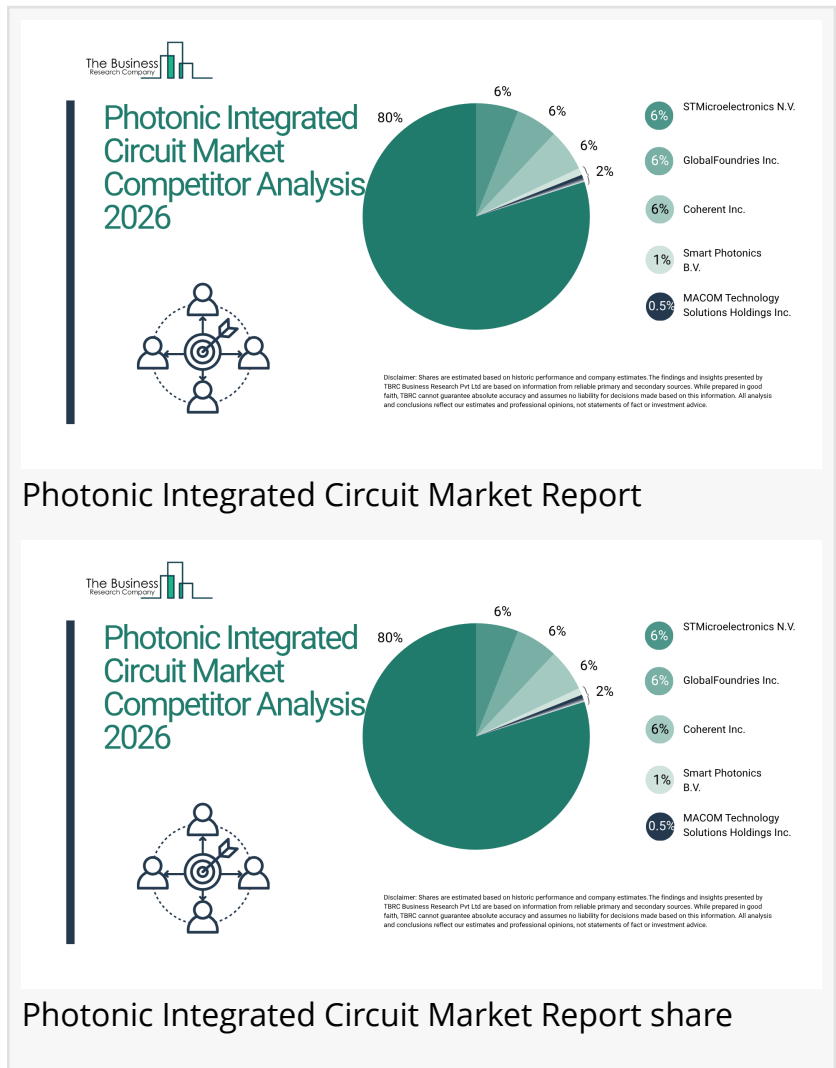
The Global Photonic Integrated Circuit Market Is Expected to Grow at an 18.9% CAGR Throughout the Forecast Period

*The Business Research Company's
Photonic Integrated Circuit Global Market
Report 2026 – Market Size, Trends, And
Forecast 2026-2035*

LONDON, GREATER LONDON, UNITED KINGDOM, October 16, 2026 /EINPresswire.com/ -- "The [photonic integrated circuit](#) market is emerging as a critical segment within the broader semiconductor and electronics industries, driven by rapid technological advancements and expanding applications. As demand for faster data transmission and advanced optical communication grows, this market is set to make a significant impact by 2030. Below is a detailed exploration of its size, regional dynamics, key segments, growth drivers, and leading players shaping the future of photonics technology.

Forecasted Market Value and Industry Position of the Photonic Integrated Circuit Market

The photonic integrated circuit market is projected to exceed \$36 billion by 2030. This figure forms roughly 4% of the Semiconductor And Related Devices market, which itself is anticipated to reach about \$950 billion by the same year. Within the much larger Electrical And Electronics industry, expected to hit \$5,579 billion in 2030, photonic integrated circuits will represent close to 0.7% of the total market value. These numbers highlight the growing importance of photonic technologies within the high-tech electronics ecosystem.



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Asia-Pacific to Lead the Photonic Integrated Circuit Market Regionally

By 2030, Asia-Pacific is forecasted to dominate the photonic integrated circuit market with a valuation of \$15 billion. The market in this region is expected to surge from \$6 billion in 2025, growing at a compound annual growth rate (CAGR) of 20%. This rapid expansion is fueled by rising demand for high-speed optical communication systems, widespread deployment of 5G and data center infrastructure, increased adoption of silicon photonics, and substantial investments in optical computing and quantum technology research. Strong manufacturing hubs in China, Japan, South Korea, and Taiwan also bolster this region's leadership in the market.

United States Positioned as the Largest National Market for Photonic Integrated Circuits

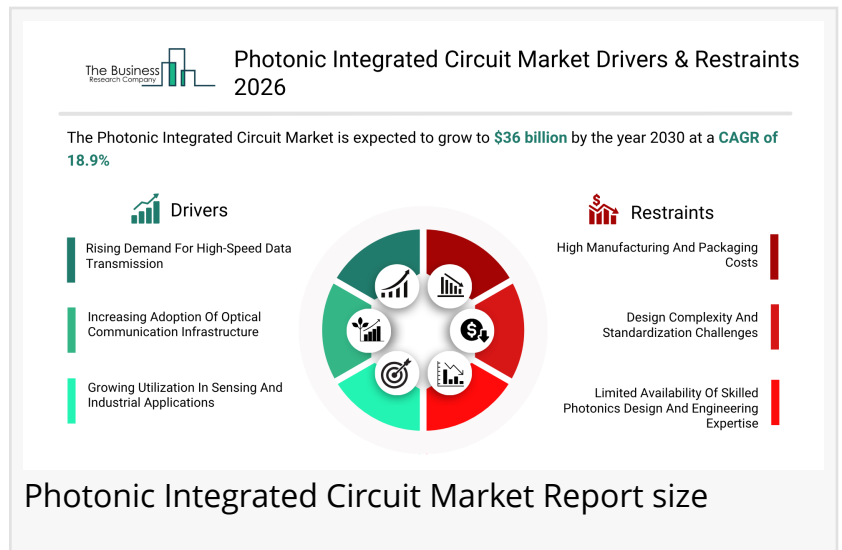
In 2030, the USA is expected to hold the largest individual country market share for photonic integrated circuits, valued at \$8 billion. This represents growth from \$3 billion in 2025 at a CAGR of 19%. The growth is supported by heavy investments in advanced optical technologies for AI and high-performance computing, rising need for next-generation sensing and imaging systems, expanded aerospace and defense applications, and active research in integrated photonics and quantum communication. Collaborative efforts between tech companies and research institutions, along with advanced semiconductor manufacturing, further drive the US market.

Access The Detailed Photonic Integrated Circuit Market Report Here

https://thebusinessresearchcompany.com/report/photonic-integrated-circuit-global-market-report?utm_source=EINPresswire&utm_medium=Paid&utm_campaign=Oct_PR

Dominance of Lasers in Photonic Integrated Circuit Components by 2030

Among the various components in the photonic integrated circuit market—lasers, modulators, detectors, [multiplexers](#), [optical amplifiers](#), and others—lasers will be the largest segment by 2030. They are expected to account for 29% of the total market, equivalent to \$11 billion. This segment's growth stems from rising demand for high-performance optical sources used in data transmission, healthcare, and industrial sensing. Innovations in semiconductor laser design, the need for compact and energy-efficient photonic devices, and advancements in wavelength-based technologies all contribute to expanding the lasers market.



Material, Application, and End-User Segmentation in the Photonic Integrated Circuit Market

The photonic integrated circuit industry is categorized by material types such as indium phosphide, silicon, lithium niobate, gallium arsenide, and others. Applications include optical communication, sensing, biophotonics, optical signal processing, and various additional uses. Key end users span telecommunications, healthcare, data centers, defense and security sectors, among others, reflecting the broad utility of photonic integrated circuits across diverse fields.

Projected Growth Rate Leading to 2030 for the Photonic Integrated Circuit Market

The photonic integrated circuit market is forecasted to grow at a compound annual growth rate of 19% up to 2030. This strong growth trajectory reflects the expanding role of photonics in next-generation communication and sensing technologies.

Primary Factors Fueling Expansion in the Global Photonic Integrated Circuit Market

The widespread push for faster data transmission is a major growth catalyst for the photonic integrated circuit market. Increasing data traffic in telecommunications and data networks demands faster optical signal processing with lower latency, which photonic integrated circuits effectively provide. Their ability to integrate multiple optical functions on a single chip supports scalable and compact network solutions, meeting the rising bandwidth needs of cloud service providers and telecom operators.

Another vital factor accelerating market growth is the adoption of optical communication infrastructure. Photonic integrated circuits are essential for modern fiber-optic networks, enabling efficient optical signal generation, manipulation, and detection. Heavy investments by enterprises and network operators aim to improve transmission reliability and operational performance, while reducing power consumption and equipment size, thus driving demand for photonic integrated circuits.

Expanding Use of Photonic Integrated Circuits in Sensing and Industrial Sectors

The increasing application of photonic integrated circuits in sensing and industrial fields is also a key growth driver. Industries like healthcare, automotive, aerospace, and manufacturing are employing optical sensing technologies for precision detection and monitoring. Photonic integrated circuits offer advantages such as compactness, high sensitivity, and improved signal accuracy, making them well-suited for industrial automation and environmental sensing. The rise of autonomous systems further boosts demand for these optical sensors.

Key Segments Offering Promising Growth Opportunities in the Photonic Integrated Circuit Market

Significant growth opportunities lie within the lasers, modulators, detectors, multiplexers, optical amplifiers, and other components segments. Collectively, these areas are expected to generate over \$20 billion by 2030. Growth is driven by increasing deployment of high-capacity optical networks, adoption of photonic solutions for sensing, advancements in semiconductor manufacturing, and active research in next-generation photonics. This momentum is shaping the broader photonics and semiconductor industries by enhancing signal processing efficiency and

supporting high-speed connectivity.

Market growth from 2025 to 2030 is anticipated as follows: the lasers market will expand by \$6 billion, modulators by \$5 billion, detectors by \$3 billion, multiplexers by \$3 billion, optical amplifiers by \$2 billion, and other components by \$1 billion. The market features a mix of global semiconductor manufacturers, photonics technology firms, and specialized optical component providers. Companies focus on developing high-performance optical communication platforms, silicon photonics, and energy-efficient solutions that meet growing data center and telecommunications demands. Emphasis on scalability, precise manufacturing, and integration with existing fabrication processes remains crucial for competitiveness.

Leading Company in the Photonic Integrated Circuit Market

STMicroelectronics N.V. emerged as the global leader in the photonic integrated circuit market in 2025, commanding a 6% market share. Its photonics and advanced semiconductor division offers a broad portfolio of silicon photonics solutions, optical transceivers, integrated photonic components, and technologies designed to support telecommunications, data centers, and next-generation optical networks.

Other Key Players Driving the Photonic Integrated Circuit Market

Besides STMicroelectronics N.V., major participants in this market include GlobalFoundries Inc., Coherent Inc., Smart Photonics B.V., MACOM Technology Solutions Holdings Inc., Ayar Labs Inc., Lightmatter Inc., PsiQuantum Corporation, Sivers Semiconductors AB, and DustPhotonics Ltd. These companies collectively contribute significant market share by offering diverse photonic and semiconductor products, maintaining partnerships with data center and telecom operators, and continuously innovating in silicon photonics and high-speed communication technologies.

Market Concentration and Competitive Landscape Overview

The photonic integrated circuit market is relatively fragmented, with the top 10 companies accounting for about 20% of total revenue in 2025. This moderate concentration reflects high entry barriers due to the complexity of semiconductor fabrication, substantial capital requirements, and demanding performance standards. Industry leaders leverage diversified portfolios, advanced manufacturing capabilities, and strategic collaborations to maintain their positions. As demand for high-bandwidth data transmission, energy-efficient computing, quantum photonics, and advanced networking solutions grows, companies are focusing on technology integration and geographic expansion to strengthen their competitive edge.

Notable raw material suppliers in this market include Intel Corporation, Advanced Micro Devices Inc., NVIDIA Corporation, Lumentum Holdings Inc., Coherent Corp., II-VI Incorporated, Hamamatsu Photonics K.K., ams OSRAM AG, NeoPhotonics Corporation, Broadcom Inc., Cisco Systems Inc., Marvell Technology Inc., Infinera Corporation, Nokia Corporation, Ericsson AB, Finisar Corporation, Fujitsu Limited, Sumitomo Electric Industries Ltd., Mitsubishi Electric Corporation, NEC Corporation, IBM Corporation, Sony Group Corporation, Hewlett Packard Enterprise Company, Keysight Technologies Inc., and Qorvo Inc.

Prominent Wholesalers and Distributors Supporting Market Reach

Key wholesalers and distributors facilitating the photonic integrated circuit market include Arrow Electronics Inc., Avnet Inc., Digi-Key Electronics, Mouser Electronics Inc., Future Electronics Inc., RS Group plc, Farnell Global Trading Limited, TTI Inc., Ingram Micro Inc., Tech Data Corporation, Synnex Corporation, ScanSource Inc., Westcon Group, Exclusive Networks SA, ALSO Holding AG, Esprinet S.p.A., Bechtle AG, CDW Corporation, Insight Enterprises Inc., Macnica Inc., Redington Limited, Mindware FZ LLC, EET Group A/S, ASBIS Enterprises PLC, and Logicom Public Limited.

Key End Users Benefiting from Photonic Integrated Circuit Technologies

Major consumers of photonic integrated circuits span leading technology and communications companies such as Microsoft Corporation, Amazon Web Services Inc., Google LLC, Meta Platforms Inc., Alibaba Group Holding Limited, Tencent Holdings Limited, Oracle Corporation, Apple Inc., Samsung Electronics Co. Ltd., Huawei Technologies Co. Ltd., Dell Technologies Inc., Qualcomm Incorporated, AT and T Inc., Verizon Communications Inc., Siemens AG, Bosch Group, Lockheed Martin Corporation, and Thales Group.

Emerging Competitive Trends Transforming the Photonic Integrated Circuit Market

A notable trend is the adoption of photonic electronic design automation tools, which enhance simulation accuracy, enable integrated co-design workflows, and improve manufacturability of silicon photonics circuits. For example, in March 2025, Keysight Technologies launched a photonic designer tool within its advanced design system suite, providing physics-driven simulation, real-world data integration, and compatibility with Process Design Kits. This innovation helps engineers reduce design iterations and speeds up commercialization of photonic devices.

Strategies Companies Employ to Maintain Market Leadership

To stay competitive, companies are advancing photonic integration technologies that deliver high-speed optical communication capabilities. They increasingly leverage silicon photonics to boost scalability and manufacturing efficiency while expanding optical data center infrastructure. Integration of AI design tools is also being pursued to improve product yield and reduce time-to-market, all of which contribute to strengthening their positions in this rapidly evolving market.

Our 2026 market reports now feature expanded strategic intelligence through market attractiveness scoring and analysis, total addressable market (TAM) analysis, company scoring matrix graphics and tables, Excel-based dashboards, market hotspots infographics, key technology and future trend analysis, along with updated graphics and tables.

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