+357 96 030922
info@marketpublishers.com

South Korea Photonic Integrated Circuit Market Size, Share, Trends and Forecast by Component, Raw Material, Integration, Application, and Region, 2026-2034

https://marketpublishers.com/r/SD9A11C02FDEEN.html
Date: July 2026
Pages: 116
Price: US$ 2,999.00 (Single User License)
ID: SD9A11C02FDEEN

Abstracts

The South Korea photonic integrated circuit market size reached USD 304.7 Million in?2025. Looking forward, IMARC Group expects the market to reach USD 1,368.8 Million by?2034, exhibiting a growth rate (CAGR) of 17.44 % during?2026-2034. A robust semiconductor ecosystem, rapid 5G and AI deployment, state?led R&D initiatives, and increasing automotive and telecommunications applications drive the market. Advanced packaging and optical module integration are spearheading technological progression, shaping South Korea photonic integrated circuit market share.

SOUTH KOREA PHOTONIC INTEGRATED CIRCUIT MARKET TRENDS:

Integration with 5G and Next ? Gen Telecom

South Korea leverages its advanced 5G infrastructure to integrate photonic ICs into telecommunication systems. Leading chipset manufacturers are embedding PICs in optical backhaul and fronthaul modules to enable compact, energy?efficient 5G base stations, boosting South Korea photonic integrated circuit market growth. Collaborative R&D between telecom giants and photonics startups yields high?performance coherent transceivers and multi?channel optical modules. Pilot programs facilitate field deployment, with modular optical units co?packaged alongside silicon photonics and digital chips. As mobile data consumption and network densification rise, telecom operators increasingly adopt photonic integration to meet throughput demands while controlling power consumption. This trend underscores South Korea’s alignment of

+357 96 030922
info@marketpublishers.com

photonic technologies with national digital infrastructure goals. For instance, in December 2024, South Korea’s PhotoniSol, a startup from Inha University, developed the world’s first commercial optical isolator chip for silicon photonics. The chip enables hybrid integration with CMOS processes, reducing cost and size compared to traditional isolators. It targets use in data centers, LiDAR, and biosensors. Partnered with Singapore’s AMF for production, PhotoniSol aims to disrupt the optical transceiver market and expand globally with support from Korea’s deep tech initiatives.

Public ? Private R&D Consortia and Pilot Systems

South Korea’s photonic IC industry benefits significantly from government?sponsored R&D consortia that unite universities, research agencies, conglomerates, and startups. These alliances focus on pilot production systems, packaging techniques, and standards development, underpinning South Korea photonic integrated circuit market growth. National grants support fabrication pilot lines and provide access to clean?room facilities, enabling accelerated prototyping cycles. Corporations gain opportunities for early adoption trials, fostering smoother translation from lab to market. Collaboration frameworks prioritize IP sharing and commercialization pathways. Through these coordinated efforts, photonic integration technologies gain scale at lower cost, enhancing domestic supply chains. As a result, South Korea continues to strengthen its PIC competencies across research, manufacturing, and system?integration layers. For instance, in November 2024, South Korea’s ETRI, with KAIST and University of Trento, developed an 8-photon silicon photonic quantum circuit achieving 6-qubit entanglement, aiming to scale to 32 qubits. This silicon photonics-based chip enables room-temperature, low-energy quantum computing. The chip integrates photon sources, filters, and switches for scalable photonic qubit control. Supported by Korea’s National Research Foundation, the initiative targets future cloud-based quantum systems.

SOUTH KOREA PHOTONIC INTEGRATED CIRCUIT MARKET SEGMENTATION:

IMARC Group provides an analysis of the key trends in each segment of the market, along with forecasts at the country and regional levels for 2026-2034. Our report has categorized the market based on component, raw material, integration, and application.

Component Insights:

Lasers

MUX/DEMUX

+357 96 030922
info@marketpublishers.com

- Optical Amplifiers
- Modulators
- Attenuators
- Detectors

The report has provided a detailed breakup and analysis of the market based on the component. This includes lasers, MUX/DEMUX, optical amplifiers, modulators, attenuators, and detectors.

Raw Material Insights:

- Indium Phosphide (InP)
- Gallium Arsenide (GaAs)
- Lithium Niobate (LiNbO3)
- Silicon
- Silica-on-Silicon

A detailed breakup and analysis of the market based on the raw material have also been provided in the report. This includes indium phosphide (InP), gallium arsenide (GaAs), lithium niobate (LiNbO3), silicon, and silica-on-silicon.

Integration Insights:

- Monolithic Integration
- Hybrid Integration
- Module Integration

+357 96 030922
info@marketpublishers.com

The report has provided a detailed breakup and analysis of the market based on the integration. This includes monolithic integration, hybrid integration, and module integration.

Application Insights:

- Optical Fiber Communication
- Optical Fiber Sensor
- Biomedical
- Quantum Computing

A detailed breakup and analysis of the market based on the application have also been provided in the report. This includes optical fiber communication, optical fiber sensor, biomedical, and quantum computing.

Regional Insights:

- Seoul Capital Area
- Yeongnam (Southeastern Region)
- Honam (Southwestern Region)
- Hoseo (Central Region)
- Others

The report has also provided a comprehensive analysis of all the major regional markets, which include Seoul Capital Area, Yeongnam (Southeastern Region), Honam (Southwestern Region), Hoseo (Central Region), and others.

COMPETITIVE LANDSCAPE:

The market research report has also provided a comprehensive analysis of the

+357 96 030922
info@marketpublishers.com

competitive landscape. Competitive analysis such as market structure, key player positioning, top winning strategies, competitive dashboard, and company evaluation quadrant has been covered in the report. Also, detailed profiles of all major companies have been provided.

KEY QUESTIONS ANSWERED IN THIS REPORT

How has the South Korea photonic integrated circuit market performed so far and how will it perform in the coming years?

What is the breakup of the South Korea photonic integrated circuit market on the basis of component?

What is the breakup of the South Korea photonic integrated circuit market on the basis of raw material?

What is the breakup of the South Korea photonic integrated circuit market on the basis of integration?

What is the breakup of the South Korea photonic integrated circuit market on the basis of application?

What is the breakup of the South Korea photonic integrated circuit market on the basis of region?

What are the various stages in the value chain of the South Korea photonic integrated circuit market?

What are the key driving factors and challenges in the South Korea photonic integrated circuit market?

What is the structure of the South Korea photonic integrated circuit market and who are the key players?

What is the degree of competition in the South Korea photonic integrated circuit market?

+357 96 030922
info@marketpublishers.com

Contents

+357 96 030922
info@marketpublishers.com

7 SOUTH KOREA PHOTONIC INTEGRATED CIRCUIT MARKET - BREAKUP BY RAW MATERIAL

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

10 SOUTH KOREA PHOTONIC INTEGRATED CIRCUIT MARKET – BREAKUP BY REGION

+357 96 030922
info@marketpublishers.com

11 SOUTH KOREA PHOTONIC INTEGRATED CIRCUIT MARKET – COMPETITIVE LANDSCAPE

12 PROFILES OF KEY PLAYERS

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

I would like to order

Product name: South Korea Photonic Integrated Circuit Market Size, Share, Trends and Forecast by Component, Raw Material, Integration, Application, and Region, 2026-2034

Product link: https://marketpublishers.com/r/SD9A11C02FDEEN.html

Price: US$ 2,999.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/SD9A11C02FDEEN.html