

South Korea Compound Semiconductor Market Report by Type (III-V Compound Semiconductor, II-VI Compound Semiconductor, Sapphire, IV-IV Compound Semiconductor, and Others), Product (Power Semiconductor, Transistor, Integrated Circuits, Diodes and Rectifiers, and Others), Deposition Technology (Chemical Vapor Deposition, Molecular Beam Epitaxy, Hydride Vapor Phase Epitaxy, Ammonothermal, Atomic Layer Deposition, and Others), Application (IT and Telecom, Aerospace and Defense, Automotive, Consumer Electronics, Healthcare, Industrial and Energy and Power), and Region 2026-2034

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Abstracts

The South Korea compound semiconductor market size reached USD 2.6 Billion in 2025. Looking forward, IMARC Group expects the market to reach USD 6.5 Billion by 2034, exhibiting a growth rate (CAGR) of 10.23% during 2026-2034. The increasing product demand in the electronics industry, the sudden shift towards fifth-generation (5G) technology, widespread investment in renewable energy sources, and the implementation of several government policies represent some of the key factors driving the market.

Compound semiconductors refer to advanced materials formed by combining two or more elements from different groups of the periodic table. They possess unique

electronic and optical properties, including higher electron mobility, direct bandgap, and superior thermal conductivity. Compound semiconductors are utilized in the development of high-speed electronics, optoelectronics, and power devices, offering improved performance in applications such as telecommunications, light-emitting diode (LED) lighting, solar cells, high-speed data storage, automotive electronics, aerospace, medical imaging, consumer electronics, power electronics, and sensor technologies. They offer numerous benefits, such as enhanced electrical efficiency, superior high-frequency performance, greater thermal conductivity, higher power density capabilities, enhanced durability and longevity, and scalability in various applications.

SOUTH KOREA COMPOUND SEMICONDUCTOR MARKET TRENDS:

The increasing demand for advanced semiconductors in the electronics industry for producing high-quality consumer electronics, smartphones, and automotive components, is creating a positive outlook for the market growth. Moreover, the sudden shift towards fifth-generation (5G) technology, prompting the adoption of compound semiconductors due to their high-frequency performance, is bolstering the market growth. Additionally, the growing automotive sector in the country, fueling the demand for power-efficient and high-performance semiconductors for electric vehicles (EVs) and autonomous driving technologies, is providing a thrust to the market growth. Along with this, the increasing investment in renewable energy sources that utilize compound semiconductors for solar inverters and energy storage systems is promoting the market growth. Besides this, the implementation of several government policies, coupled with investments in research and development (R&D) to foster innovation in advanced materials and semiconductor technologies, are anticipated to drive the market growth. Moreover, the increasing collaborations between academic institutions, research labs, and industry players for advancing semiconductor technology and production capabilities in the country are providing a considerable boost to the market growth. Furthermore, the growing utilization of compound semiconductors in miniaturized electronic devices to offer the necessary performance in smaller, more efficient packages is acting as a growth-inducing factor. Apart from this, the heightened need for faster data transmission in telecommunications, driven by the proliferation of the Internet of Things (IoT) and cloud computing, is supporting the market growth. Additionally, the widespread adoption of advanced compound semiconductor technologies for sophisticated defense and aerospace applications, including radar, satellites, and electronic warfare systems, is stimulating the market growth. Along with this, the increasing product application in renewable energy, such as solar photovoltaic systems and power converters, aligning with the country's commitment to sustainable energy, is driving the market growth. In addition to this, the widespread utilization of

compound semiconductors in medical devices for imaging technologies and diagnostic equipment is expanding the market growth.

SOUTH KOREA COMPOUND SEMICONDUCTOR MARKET SEGMENTATION:

IMARC Group provides an analysis of the key trends in each segment of the market, along with forecasts at the country level for 2026-2034. Our report has categorized the market based on type, product, deposition technology, and application.

Type Insights:

III-V Compound Semiconductor

Gallium Nitride

Gallium Phosphide

Gallium Arsenide

Indium Phosphide

Indium Antimonide

II-VI Compound Semiconductor

Cadmium Selenide

Cadmium Telluride

Zinc Selenide

Sapphire

IV-IV Compound Semiconductor

Others

The report has provided a detailed breakup and analysis of the market based on the

South Korea Compound Semiconductor Market Report by Type (III-V Compound Semiconductor, II-VI Compound Semicon...

type. This includes III-V compound semiconductor (gallium nitride, gallium phosphide, gallium arsenide, indium phosphide, and indium antimonide), II-VI compound semiconductor (cadmium selenide, cadmium telluride, and zinc selenide), sapphire, IV-IV compound semiconductor, and others.

Product Insights:

Power Semiconductor

Transistor

Integrated Circuits

Diodes and Rectifiers

Others

A detailed breakup and analysis of the market based on the product have also been provided in the report. This includes power semiconductor, transistor, integrated circuits, diodes and rectifiers, and others.

Deposition Technology Insights:

Chemical Vapor Deposition

Molecular Beam Epitaxy

Hydride Vapor Phase Epitaxy

Ammonothermal

Atomic Layer Deposition

Others

The report has provided a detailed breakup and analysis of the market based on deposition technology. This includes chemical vapor deposition, molecular beam

epitaxy, hydride vapor phase epitaxy, ammonothermal, atomic layer deposition, and others.

Application Insights:

IT and Telecom

Aerospace and Defense

Automotive

Consumer Electronics

Healthcare

Industrial and Energy and Power

A detailed breakup and analysis of the market based on the application have also been provided in the report. This includes IT and telecom, aerospace and defense, automotive, consumer electronics, healthcare, and industrial and energy and power.

Regional Insights:

Seoul Capital Area

Yeongam (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, Yeongam (Southeastern Region), Honam (Southwestern Region), Hoseo (Central Region), and Others.

COMPETITIVE LANDSCAPE:

The market research report has also provided a comprehensive analysis of the competitive landscape in the market. 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 compound semiconductor market performed so far and how will it perform in the coming years?

What has been the impact of COVID-19 on the South Korea compound semiconductor market?

What is the breakup of the South Korea compound semiconductor market on the basis of type?

What is the breakup of the South Korea compound semiconductor market on the basis of product?

What is the breakup of the South Korea compound semiconductor market on the basis of deposition technology?

What is the breakup of the South Korea compound semiconductor market on the basis of application?

What are the various stages in the value chain of the South Korea compound semiconductor market?

What are the key driving factors and challenges in the South Korea compound semiconductor?

What is the structure of the South Korea compound semiconductor market and who are the key players?

What is the degree of competition in the South Korea compound semiconductor market?

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