

Compound Semiconductor Market Anticipated To Achieve USD 80.67 Billion By 2031, With a CAGR of 8.2% - SNS Insider

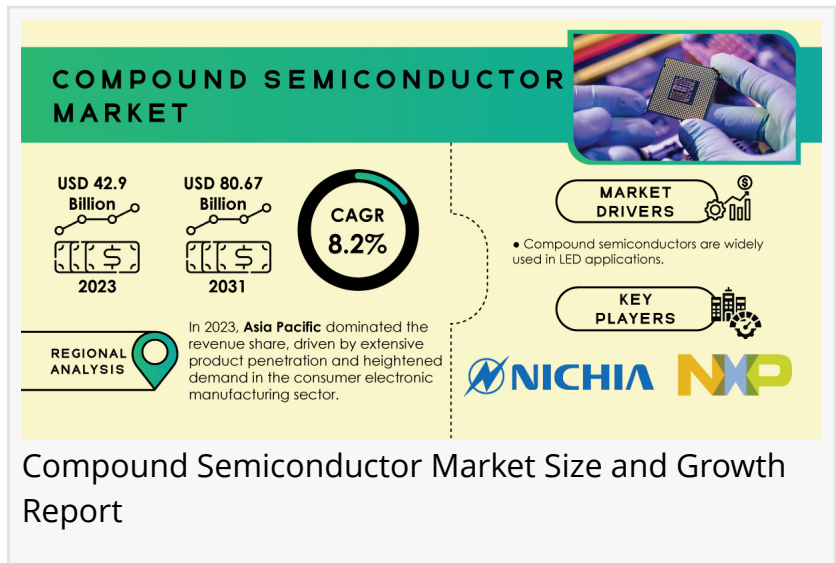
Compound Semiconductor Market Share, Size, Growth Trend, Global Industry Overview and Regional Analysis, Forecast 2024 - 2031

AUSTIN, TEXAS, UNITED STATES, June 21, 2024 /EINPresswire.com/ -- Market Size and Growth Prospect

According to the SNS Insider report, The Compound Semiconductor Market is poised for significant growth with projected market size USD 80.67 billion by 2031. This reflecting a CAGR of 8.2% from 2024 to 2031, building upon a 2023 market value of USD 42.9 billion.

The compound semiconductor market is experiencing significant growth driven by these materials' superior properties compared to traditional silicon. SiC, for example is a key player offering 10 times the breakdown strength and 3 times the thermal conductivity of silicon. This translates to simpler more reliable devices ideal for high-voltage applications like solar inverters and power supplies. The growing demand for efficient power electronics in sectors like aerospace, medical and defense is a major driver for SiC adoption.

Another key material GaN, holds immense potential for 5G infrastructure development. GaN solutions offer significant efficiency and performance improvements over traditional technologies in 5G base stations. These benefits include better thermal handling higher reliability, and the ability to deliver similar performance in a smaller size. With power amplifiers across the entire 5G network poised to benefit from GaN, this technology is expected to be a major driver for market growth. The widespread adoption of LEDs is a major contributor to market growth. LEDs offer significant energy savings compared to traditional bulbs making them attractive to both consumers and governments. Studies by the US Department of Energy show



LED lights can use up to 81% less energy than incandescent.

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KEY PLAYERS:

- Nichia Corporation
- Samsung Electronics
- NXP Semiconductor
- Infineon Technologies
- Taiwan Semiconductor
- QORVO
- CREE
- Renesas Electronics Corporation
- Stmicroelectronics
- Texas Instruments Incorporated

The Asia Pacific is the dominant region in the compound semiconductor market holding the largest market share in 2023.

There are two main reasons for this lead. First, a lot of these materials are used to make consumer electronics in Asia Pacific. Second, the consumer electronics market itself is booming in this region. More and more people are moving to cities in Asia Pacific and they have more money to spend. This creates a great situation for even more growth in consumer electronics, which need compound semiconductors to work. On top of that Asia Pacific is most likely to adopt new technologies as people there increasingly want smart and innovative products. This trend is expected to make Asia Pacific the leader in the compound semiconductor market for a long time.

KEY MARKET SEGMENTS:

BY PRODUCT

- LED
- RF Devices
- Optoelectronics
- Power Electronics

by Product: Power electronics segment is the dominant in the compound semiconductor market holding the largest market share. This dominance is fueled by the growing popularity of smart home appliances and advanced consumer electronics, both of which rely heavily on power electronics modules.

BY APPLICATION

- General Lighting
- Military, Defense, and Aerospace
- Power Supply
- Commercial
- Consumer Devices
- Telecommunication
- Automotive
- Datacom
- Consumer Display
- Others

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by Application: The telecommunications industry segment is the dominant in the compound semiconductor market. This leadership is driven by the increasing use of materials like GaAs, GaN, InP, and SiGe in telecom equipment. This trend is expected to continue solidifying the telecommunication sector's position as the dominant market segment for compound semiconductors.

BY TYPE

- GaN
- Gallium Arsenide (GAAS)
- Silicon Carbide (SiC)
- Indium phosphide (INP)
- Silicon germanium (SIGE)
- Gallium phosphide (GAP)
- Others

Recent Developments

-In June 2024, An Indian startup SiCSem, is teaming up with IIT Bhubaneswar to establish a plant for making silicon carbide (SiC) components crucial for electric vehicles and clean energy applications. This collaboration aims to increase India's self-sufficiency in power semiconductors and aligns with the country's initiatives for domestic manufacturing. The first step involves setting up SiC crystal growth at IIT Bhubaneswar.

-In June 2024, To bolster India's semiconductor industry Japan's JICA agency helped establish a partnership between the Indian Institute of Technology Hyderabad (IITH) and Renesas a Japanese supplier of advanced semiconductor solutions. This collaboration aims to boost innovation and develop talent in India's semiconductor field.

Key Takeaway

- Power electronics and telecommunication are the top applications for compound semiconductors, fueled by the demand for efficient power management and next-generation communication equipment.
- The Asia Pacific region is dominant in compound semiconductors driven by its thriving consumer electronics market and early embrace of new technologies.
- Advanced materials like SiC and GaN are shaking up electronics by offering better performance and saving energy in areas like power grids, phones and lighting.

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