

GaN Semiconductor Devices Market Size Worth USD 15.7 Billion by 2031 at 25.14% CAGR – Report by SNS Insider

GaN Semiconductor Devices Market Analysis by Size, Share, Trend, Opportunities and Regional Growth, Global Forecast 2024 - 2031

AUSTIN, TEXAS, UNITED STATES, June 24, 2024 /EINPresswire.com/ -- Market Size & Growth Prospect

The GaN Semiconductor Devices Market according to the SNS Insider report, is poised for significant growth with projected market size reach USD 15.7 Billion in 2031. This reflecting a CAGR of 25.14 % from 2024 to 2031 building upon a 2023 market value of 2.6 billion.

The Gallium Nitride GaN semiconductor market is experiencing explosive growth due to its superior qualities compared to traditional materials. GaN makes electronic devices more efficient and powerful a major benefit for industries like consumer electronics clean energy and automobiles. This trend is fueled by the increasing use of GaN in GaN Semiconductor Devices and radio frequency applications, along with the surge in electric vehicles which rely on GaN components for chargers and inverters.

Even the healthcare sector is embracing GaN with surgical robots utilizing its speed and reliability for delicate procedures.

Defense communication systems are also finding GaN's high performance and durability advantageous., A problem starting a GaN production line requires expensive specialized equipment potentially limiting entry for smaller companies. Despite this challenge the future of GaN semiconductors is bright with its potential to revolutionize various industries through its efficiency and performance-enhancing properties. The GaN semiconductor market is rapidly growing due to advancements that boost efficiency and performance in various applications. New products from established and emerging players highlight the focus on innovation.



GaN Semiconductor Devices Market Size and Growth Report

Regulations ensure safety and environmental responsibility. While silicon carbide (SiC) presents competition in some areas GaN's strength lies in high-frequency and high-power applications. The market benefits from GaN's widespread integration across industries like telecom, consumer electronics, automotive and renewable energy.

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KEY PLAYERS:

- Osram Opto-semiconductors
- Panasonic Semiconductors
- Texas Instruments
- RF Micro Devices Corporation
- Cree Incorporated
- Toshiba
- Aixtron SE
- Infineon Technologies
- Gallia Semiconductor
- ROHM Company Limited
- Fujitsu Ltd
- NXP Semiconductors
- Koninklijke Philips N.V.
- Nichia Corporation

Major players like Toshiba and GaN Systems are constantly innovating and forming partnerships to gain an edge. For instance GaN Systems partnered with PowerSphyr to create industry-leading wireless charging solutions. This highlights the focus on collaboration and new product development in this competitive market.

Opto-semiconductors currently reign supreme in the opto-electronics market, holding over 32% of the revenue share in 2023.

This dominance is driven by their widespread use in cars, consumer electronics, and crucial systems like LiDAR and pulsed lasers. The future seems bright for GaN radio frequency devices, as they are projected to boast the highest growth rate in the coming years. This is likely due to their increasing adoption in various applications across consumer electronics and defense sectors. The tech industry ICT is the biggest user of GaN semiconductors making up over 23% of the market in 2023. This is likely due to the increasing in Internet-of-Things (IoT) devices which rely on GaN for efficient data exchange. GaN is also widely used in various telecom equipment like data centers and base stations, making it a vital component for our connected world.

KEY MARKET SEGMENTS:

BY TYPE

- Depletion Mode
- Cascode Mode
- GaN Radio Frequency Devices
- Opto-Semiconductors
- Power Semiconductors
- RF Semiconductors

BY WAFER SIZE

- 2"
- 4"
- 6"
- 8"

BY COMPONENTS

- Transistor
- Diode
- Rectifier
- Power IC
- Others

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BY APPLICATION

- Signal
- Power
- Communications
- Consumer Electronics
- Automotive
- Military & Defense
- Medical
- Lighting and Lasers
- Supplies and Inverters
- Radio Frequency
- Other

Recent Developments

- In January 2024, Transphorm is making waves in the GaN industry with their new SuperGaN devices. These powerful transistors come in a TO-247-4L package and offer low resistance (35mΩ and 50mΩ) for efficient switching. They also feature a Kelvin-source terminal for even better performance and lower energy loss.
- In April 2024, GaN power company Transphorm and Weltrend Semiconductor teamed up to

launch two new GaN System-in-Packages (SiPs). These combine Weltrend's controller with Transphorm's powerful GaN transistors, offering a new family of SiP products for efficient power conversion.

North America currently leads the GaN semiconductor market fueled by strong investment in research and development

From the defense and aerospace industries along with government support for semiconductor companies. The future of GaN semiconductors is bright in Asia Pacific predicted to be the fastest-growing market. This is driven by several factors like consumer electronics manufacturing phones, TVs growing military spending leading to a need for better communication devices and a general rise in wireless technology use across the region.

Key Takeaways

- GaN's superior efficiency and power handling are driving its use in consumer electronics, clean energy autos healthcare and defense communication, revolutionizing electronics.
- Companies are constantly improving and releasing new GaN products working together to make this technology even better.
- North America leads the GaN market now but Asia Pacific is expected to win due to its electronics, military tech and growing use of wireless devices.

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