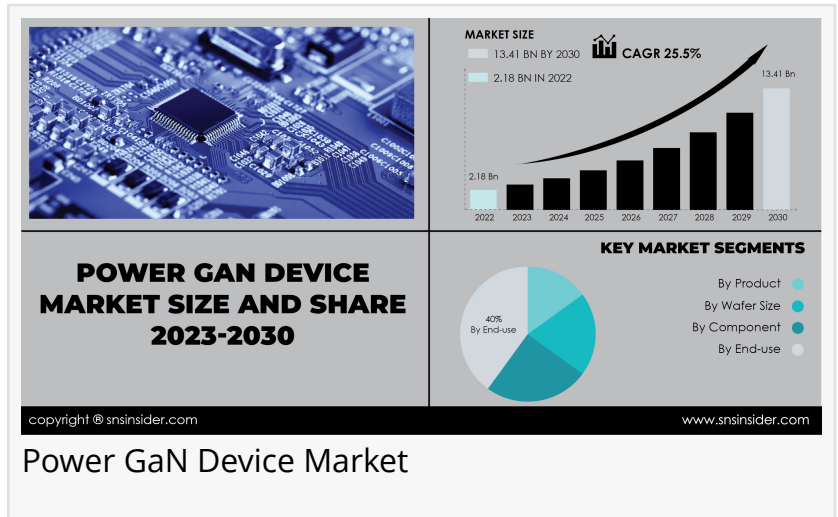


Power GaN Device Market to Surpass USD 13.41 Billion by 2030 owing to Consumer Electronics and Automotive Integration

Power GaN Device Market Size, Share, And Segmentation By Product, By Component, By Wafer Size, By End-Use, By Region, And Segment Forecasts 2023 – 2030

AUSTIN, TEXAS, UNITED STATES, January 12, 2024 /EINPresswire.com/ --



Power GaN Device Market

The [Power GaN Device Market](#), as per the SNS Insider report, achieved a valuation of USD 2.18 Billion in 2022, with projections indicating a substantial growth to reach USD 13.41 Billion by 2030. Anticipated to exhibit a Compound Annual Growth Rate (CAGR) of 25.5% during the forecast period spanning from 2023 to 2030.

Power Gallium Nitride (GaN) devices represent a cutting-edge advancement in the field of semiconductor technology. GaN, a wide-bandgap material, offers exceptional electrical properties, making it ideal for power electronics applications. These devices are characterized by high electron mobility and a wide bandgap, enabling them to operate at higher frequencies and temperatures compared to traditional silicon-based devices. The main pointers to consider in understanding power GaN devices include their superior power efficiency, faster switching speeds, compact form factor, and their ability to handle high power densities.

For more information, please contact SNS Insider at <https://www.snsinsider.com/sample-request/2972>

- Key players in the Power GaN Device Market include:
- GaN Systems Inc.
 - Toshiba Corporation
 - TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY LTD.
 - Efficient Power Conversion Corporation Inc.

- FUJITSU Limited
- ON SEMICONDUCTOR CORPORATION
- PANASONIC CORPORATION
- VISIC TECHNOLOGIES LTD.

Market Overview

The power GaN device market is witnessing robust growth driven by several key factors. Firstly, the increasing demand for energy-efficient electronic devices across industries is pushing the adoption of power GaN devices. Additionally, the rising focus on renewable energy sources and the need for efficient power management contribute to the market's expansion. The proliferation of electric vehicles, the burgeoning 5G infrastructure, and the demand for compact and lightweight power systems further fuel the growth of the market. As industries continue to emphasize energy conservation and high-performance electronics, the market for power GaN devices is poised for sustained expansion.

Market Segments

By Device Type

- GaN Radio Frequency Devices
- Opto-semiconductors
- Power Semiconductors

By Device Structure

- Transistor
- Diode
- Rectifier
- Power IC
- Others

By Device Size

- 2-inch
- 4-inch
- 6-inch
- 8-inch

By End User

- Automotive
- Consumer Electronics
- Defense & Aerospace
- Healthcare
- Industrial & Power
- Information & Communication Technology

- Others

Geographical Regions:

- North America
- Europe
- Asia-Pacific
- The Middle East & Africa
- Latin America

Source: SNS Insider @ <https://www.snsinsider.com/reports/power-gan-device-market-2972>

Market Overview

The ongoing recession has both positive and negative implications for the power GaN device market. On the positive side, the demand for energy-efficient technologies tends to increase during economic downturns as companies seek cost-effective solutions. Power GaN devices, with their efficiency and compact design, become attractive options for businesses looking to optimize energy consumption and reduce operational costs. However, the negative impact cannot be ignored, as the recession may result in reduced overall spending on technological upgrades and R&D, affecting the market's growth potential. Striking a balance between these opposing forces becomes crucial for stakeholders in the power GaN device industry during times of economic uncertainty.

Market Challenges

The Russia-Ukraine war has multifaceted effects on the power GaN device market. On one hand, geopolitical tensions and disruptions in the global supply chain may lead to challenges in raw material sourcing and manufacturing processes, potentially causing delays and increased costs. On the other hand, increased investments in defense and infrastructure in response to geopolitical uncertainties may drive the demand for power GaN devices used in military and communication applications. Balancing these contrasting impacts requires a nuanced understanding of the geopolitical landscape and strategic positioning within the market.

Regional Analysis

The North American region exhibits a strong appetite for technological advancements, making it a significant player in the power GaN device market. The push for energy-efficient solutions, coupled with robust investments in research and development, positions North America as a key contributor to the market's growth. In Europe, stringent environmental regulations and the increasing adoption of electric vehicles are propelling the demand for power GaN devices. The region's emphasis on sustainable technologies and smart grid infrastructure further enhances the prospects for power GaN device manufacturers. The Asia-Pacific region, driven by countries

like China, Japan, and South Korea, dominates the market. Rapid industrialization, a burgeoning consumer electronics market, and investments in 5G infrastructure contribute to the region's dynamic growth in the power GaN device sector.

Power GaN device market, the GaN Radio Frequency (RF) Devices segment is poised to dominate, driven by the increasing demand for high-frequency applications in telecommunications, radar systems, and satellite communications. The superior performance of GaN RF devices in terms of power efficiency and bandwidth positions them as the preferred choice in the evolving landscape of wireless communications.

- Simultaneously, the automotive sector is set to be a major force shaping the market. The shift towards electric vehicles and the integration of advanced driver-assistance systems (ADAS) require efficient power management solutions. Power GaN devices, with their high power density and fast switching capabilities, find extensive applications in electric vehicles, contributing to the dominance of the automotive segment within the broader market.

Oki has achieved a significant milestone by successfully implementing Gallium Nitride (GaN) lifting off/bonding technology on QST substrates manufactured by Shin-Etsu Chemical. This collaborative effort marks a substantial leap forward in the field, showcasing the prowess of Oki's innovation and the strategic partnership with Shin-Etsu Chemical.

Toyoda Gosei and Powdec have unveiled a significant breakthrough in the development of Horizontal Gallium Nitride (GaN) power devices. This collaborative effort signifies a pivotal moment in the evolution of semiconductor technology, with both companies contributing their expertise to advance the capabilities of GaN-based power devices.

Power GaN device market - Power GaN device market

1. Power GaN device market

2. Power GaN device market

- 1. Power GaN device market
- 2. Power GaN device market
- 3. Power GaN device market
- 4. Power GaN device market
- 5. Power GaN device market
- 6. Power GaN device market
- 7. Power GaN device market

8. Power GaN device market

8.1 GaN Radio Frequency Devices

8.2 Opto-semiconductors

8.3 Power Semiconductors

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9.1 Transistor

9.2 Diode

9.3 Rectifier

9.4 Power IC

9.5 Others

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10.1 2-inch

10.2 4-inch

10.3 6-inch

10.4 8-inch

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13.1 GaN Systems Inc.

13.1.1 Market Overview

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13.1.3 Product/Services/Offerings

13.1.4 SWOT Analysis

13.1.5 The SNS View

13.2 Toshiba Corporation

13.2.1 Market Overview

13.2.2 Financials

13.2.3 Product/Services/Offerings

13.2.4 SWOT Analysis

13.2.5 The SNS View

13.3 TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD

13.3.1 Market Overview

13.3.2 Financials

13.3.3 Product/Services/Offerings

13.3.4 SWOT Analysis

13.3.5 The SNS View

13.4 Efficient Power Conversion Corporation Inc.

13.4.1 Market Overview

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[SiC Power Device Market](#)

[GaN Diamond Semiconductor Substrates Market](#)

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