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Global Gallium Nitride (GaN) Power Transistor Market Growth 2026-2032

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Abstracts

The global Gallium Nitride (GaN) Power Transistor market size is predicted to grow from US$ 1943 million in 2025 to US$ 3149 million in 2032; it is expected to grow at a CAGR of 7.7% from 2026 to 2032.

Gallium Nitride (GaN) power transistors are GaN-based power switching devices used for power conversion, most commonly implemented as lateral GaN HEMTs (GaN FETs) on GaN-on-Si or GaN-on-SiC epi platforms, targeting superior switching performance versus silicon MOSFETs across widely used voltage domains (e.g., 48V-class, 100–200V, and 650V-class). In industry practice, “product / process forms” are often categorized by operating mode and integration style: enhancement-mode (E-mode, normally-off; widely realized via p-GaN gate or related approaches), depletion-mode (D-mode, normally-on), and cascode (a D-mode GaN device paired with a low-voltage Si MOSFET to deliver normally-off behavior). Delivery forms span discrete GaN FETs, integrated GaN power stages / power ICs (driver + protections integrated or co-packaged with a 650V GaN FET), and higher-level modules/IPMs. Key technical differentiators center on gate robustness and reliability (threshold/gate-voltage headroom, p-GaN stress behavior), dynamic RDS(on) and trap-related effects, and package parasitics/thermal paths essential for high di/dt, high-frequency switching.

From an industry standpoint, power GaN has moved beyond early mass adoption in consumer fast chargers toward broader penetration in AI/data-center power, telecom/infrastructure power, and automotive electrification. Public Yole communications in 2025 point to rapid expansion through 2030 with strong growth vectors beyond consumer—highlighting data centers/telecom and automotive as major “next pillars.” On the manufacturing side, two notable trends are (i) capacity internalization and “silicon-fab-like” scaling, illustrated by TI’s start of GaN production

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in Aizu, Japan and its plan to significantly increase internal GaN capacity, and (ii) wafer-size scaling for cost-down, exemplified by Infineon’s 300mm GaN power wafer technology progress in existing high-volume infrastructure and its stated “more dies per wafer” economic benefit versus 200mm. Primary demand drivers can be summarized as: higher efficiency and power density (enabling smaller magnetics and compact designs), AI-driven and electrification-driven power-system upgrades, and improved manufacturability via integration (integrated driver/protection GaN stages lowering design barriers and improving robustness).

LP Information, Inc. (LPI) ' newest research report, the “Gallium Nitride (GaN) Power Transistor Industry Forecast” looks at past sales and reviews total world Gallium Nitride (GaN) Power Transistor sales in 2025, providing a comprehensive analysis by region and market sector of projected Gallium Nitride (GaN) Power Transistor sales for 2026 through 2032. With Gallium Nitride (GaN) Power Transistor sales broken down by region, market sector and sub-sector, this report provides a detailed analysis in US$ millions of the world Gallium Nitride (GaN) Power Transistor industry.

This Insight Report provides a comprehensive analysis of the global Gallium Nitride (GaN) Power Transistor landscape and highlights key trends related to product segmentation, company formation, revenue, and market share, latest development, and M&A activity. This report also analyzes the strategies of leading global companies with a focus on Gallium Nitride (GaN) Power Transistor portfolios and capabilities, market entry strategies, market positions, and geographic footprints, to better understand these firms’ unique position in an accelerating global Gallium Nitride (GaN) Power Transistor market.

This Insight Report evaluates the key market trends, drivers, and affecting factors shaping the global outlook for Gallium Nitride (GaN) Power Transistor and breaks down the forecast by Device Type, by Application, geography, and market size to highlight emerging pockets of opportunity. With a transparent methodology based on hundreds of bottom-up qualitative and quantitative market inputs, this study forecast offers a highly nuanced view of the current state and future trajectory in the global Gallium Nitride (GaN) Power Transistor.

This report presents a comprehensive overview, market shares, and growth opportunities of Gallium Nitride (GaN) Power Transistor market by product type, application, key manufacturers and key regions and countries.

Segmentation by Device Type:

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GaN HEMT Discrete

GaN Power Stage/Power IC

GaN IPM

Segmentation by Wafer Type:

GaN-on-Si Devices

Others

Segmentation by Voltage:

GaN Power >600V

GaN Power

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