

GaN Power Device Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2023-2028

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Abstracts

Market Overview 2023-2028:

The global GaN power device market size reached US\$ 259 Million in 2022. Looking forward, IMARC Group expects the market to reach US\$ 1,507 Million by 2028, exhibiting a growth rate (CAGR) of 34.2% during 2023-2028.

The gallium nitride (GaN) power device is a high electron mobility (HEMT) transistor that produces electrical energy by the controlling the freely moving electrons in the wide bandgap of the semiconductor. As compared to silicon metal-oxide-semiconductor field-effect transistor (MOSFET), the GaN power device has lower on-resistance, lesser output capacitance and higher electric-field strength. It also conducts more electrons, reduces switch node ringing and increases efficiency. Besides this, it is compact, fast and lightweight, owing to which it is gaining traction in commercial and industrial applications across various industrial products.

The market is presently being driven by the extensive utilization of GaN power devices in various end use industries. For instance, it is used in the lighting and braking control systems in electric vehicles (EVs) and hybrid electric vehicles (HEVs). Governments of several countries are introducing stringent policies on greenhouse gas (GHG) emissions, which is boosting the sales of EVs and HEVs around the world. They are also promoting the adoption of energy-efficient devices, which is further influencing the demand for GaN power devices in the defense and aerospace industries. Apart from this, these devices are utilized in radars to enhance navigation, avoid collision and enable real-time air traffic control. Moreover, they are employed in the manufacturing of healthcare scanning equipment, such as sonograms, magnetic resonance imaging

(MRI) and miniaturized X-ray machines, to provide precision while performing surgeries. Furthermore, they are used in small cell, distributed antenna systems (DAS) and remote radio head network densification. Besides this, the increasing adoption of the internet of things (IoT) technology, along with the introduction of 5G technology, is expected to create lucrative opportunities for manufacturers in the coming years.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global GaN power device market report, along with forecasts at the global, regional and country level from 2023-2028. Our report has categorized the market based on device type, voltage range, application and end-use industry.

Breakup by Device Type:

Power Device

Discrete Power Device

Integrated Power Device

RF Power Device

Discrete RF Power Device

Integrated RF Power Device

Breakup by Voltage Range:

600 Volt

Breakup by Application:

Power Drives

Power Supply Systems

Radio Frequency Based Systems

Breakup by End-Use Industry:

Telecommunications

Automotive

Renewable Power Generation

Military

Aerospace and Defense

Consumer Electronics

Others

Breakup by Region:

North America

United States

Canada

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Others

Europe

Germany

France

United Kingdom

Italy

Spain

Russia

Others

Latin America

Brazil

Mexico

Others

Middle East and Africa

Competitive Landscape:

The report has also analysed the competitive landscape of the market with some of the key players being Efficient Power Conversion, GaN Systems Inc., IQE, Koninklijke Philips N.V., MACOM Technology Solutions, Microsemi Corporation (Microchip Technology Inc.), Mitsubishi Electric Corporation, Navitas Semiconductor Inc., Qorvo Inc., Sumitomo Electric Industries Ltd., Texas Instruments Incorporated, Toshiba Corporation, Wolfspeed Inc. (Cree Inc.), etc.

Key Questions Answered in This Report

1. What was the size of the global GaN power device market in 2022?

2. What is the expected growth rate of the global GaN power device market during 2023-2028?
3. What has been the impact of COVID-19 on the global GaN power device market?
4. What are the key factors driving the global GaN power device market?
5. What is the breakup of the global GaN power device market based on the end-use industry?
6. What are the key regions in the global GaN power device market?
7. Who are the key players/companies in the global GaN power device market?

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