

Gallium Nitride (GaN) Substrates Market - Forecasts from 2017 to 2022

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Abstracts

The global gallium nitride (GaN) substrates market is projected to witness the growth at a CAGR of 11.75% during the forecast period to reach the total market size of US\$442.084 million by 2022, increasing from US\$253.700 million in 2017. The ability to provide wider bandgap, high breakdown voltage, larger critical electric field, and high thermal conductivity is driving the growth of gallium nitride substrates market leading to a shift of industry manufacturers from silicon technology to gallium nitride substrates. There also lies the advantage of high electron mobility, low switching losses and relatively fewer lattice mismatches which are supplementing the growth of gallium nitride substrates market. However, the use of small gallium nitride substrates namely, 2 & 4 Inch GaN Substrates, results in wastage of space and edges leading to inefficiency and a high implementation cost are some of the challenges which are restraining the growth of gallium nitride substrates market.

By End-Users

Amongst end-users, the global gallium nitride substrates market is segmented as healthcare, automotive, military and communication, general lighting, and consumer electronics. The use of gallium nitride substrates in the automotive sector is projected to rise with the evolution of cars towards becoming semi and eventually fully autonomous. This new technology is used in several applications such as cockpit wireless charging, Lidar sensing and electric vehicle charging in the automotive industry. In the healthcare sector, the gallium nitride based technology is contributing in accelerating the speed of invention, diagnostic accuracy and patient effort. There is also a rise of gallium nitride application in military RF solution as defence contractors continue to upgrade their system old system. It also allows the economy to meet its objective of energy conservation with a rise in use of gallium nitride based electronic applications.

By Geography

Geographically, global gallium nitride substrates market is segmented as North America, Europe, Middle East and Africa, Asia Pacific, and South America. North America will account for a significant market share in 2017 due to robust manufacturing sector coupled with high investment in R&D in the region. The growing use of gallium nitride substrates in consumer electronics devices such as laptops, mobile phones, and tablets among others owing to its higher power efficiency is driving the growth of this market in the region.

Competitive Landscape

The global gallium nitride substrates market is competitive owing to the presence of well-diversified international, regional and local players. However, some big international players dominate the market share owing to their brand image and market reach. The high market growth and favorable government policies are further attracting more players in the market while enhancing the competitive rivalry. The competitive landscape details strategies, products, and investments being done by key players in different technologies and companies to boost their market presence.

Some of the major players discussed in the report are Sumitomo Electric Industries, Ltd., Toshiba Corporation, Sciocs, Ammono, and Qorvo, Inc. among others.

Segmentation

The global gallium nitride substrates market has been segmented by type, production process, wafer size, product, end user, and geography.

By Type

- Gallium Nitride on Sapphire
- Gallium Nitride on Silicon
- Gallium Nitride on Silicon Carbide
- Gallium Nitride on Gallium Nitride

By Production Process

- Hydride Vapour Phase Epitaxy
- Ammonothermal Growth

Metal Organic Chemical Vapour Deposition By Wafer Size

2 Inch

4 Inch

6 Inch

More than 6 Inch

By Product

LED

Lasers

Power Switching Device

By End User

Automotive

Healthcare

Military and Defense

General Lighting

Consumer Electronics

Communication and Technology

By Geography

North America

Europe

Middle East and Africa

Asia Pacific

South America

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