GaN Semiconductor Devices Market Booming Demand Leading To Exponential CAGR Growth By 2027

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GaN Semiconductor Devices Market

ALBANY, NEW YORK, UNITED STATES, October 1, 2020 /EINPresswire.com/ -- Transparency Market Research delivers key insights on the global GaN semiconductor devices market. In terms of revenue, the global GaN semiconductor devices market is estimated to expand at a CAGR of 14.5% during the forecast period, owing to numerous factors, regarding which TMR offers thorough insights and forecasts in its report on the global GaN semiconductor devices market.

Gallium nitride (GaN), a wide band gap semiconductor material, is a newer technology compared to other semiconductor materials, such as gallium arsenide (GaAs) and silicon carbide (SiC). GaN semiconductor devices offer a competitive advantage in terms of thermal performance, efficiency, weight, and size. GaN is the next-generation power semiconductor and hence, different countries are involved in developing widespread applications of GaN semiconductors. The wide band gap (WBG) semiconductor technology has matured rapidly over the last few years. Based on product, the global GaN semiconductor devices market has been classified into power semiconductors, radio devices, and opto semiconductors. Among these, opto semiconductors are being adopted largely, as they absorb and emit light. Photodiodes, LEDs, solar cells, and semiconductor lasers are all categorized as opto semiconductors. Furthermore, based on end-use industry, the global GaN semiconductor devices market has been classified into information & communication technology, automotive, consumer electronics, aerospace & defense, and others. The consumer electronics sector is increasingly adopting GaN semiconductor devices, as GaN is widely incorporated into radio frequency devices, light-emitting diodes (LEDs), and power electronics, due to its ability to operate at a high frequency

and high temperature. This, in turn, is expected to boost the global GaN semiconductor devices market during the forecast period.

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GaN Semiconductor Devices Market: Dynamics

Improved responsiveness and enhanced battlefield performance are important areas of focus for the defense sector. Hence, a high level of integration is required between radar communication systems and electronic warfare devices that are used in military. Due to high breakdown voltage and rapid heat dissipation capacity, GaN semiconductor devices have benefitted the defense industry greatly. A major application of GaN in the military sector is its usage in HEMTs (high electron mobility transistors), which are required for high-frequency operations. Furthermore, due to high temperature resistivity, low power consumption, high breakdown voltage, better thermal stability, and high electron mobility, GaN semiconductor devices are widely acknowledged as 'green technology' by different industrial sectors. These devices are largely used in light-emitting diodes (LEDs), radio frequency (RF) amplifiers, and power electronics, due to their unique properties. With rapid advancements in technology, usage of GaN is expected to be extended to various other commercial applications. Additionally, advancements intended to increase wafer diameters are expected to improve the efficiency and reduce the cost of GaN devices, eventually improving the performance of these devices and making GaN more acceptable compared to other semiconductor materials. These are expected to be prominent factors propelling the global GaN semiconductor devices market during the forecast period.

GaN Semiconductor Devices Market: Prominent Regions

Asia Pacific is a dominant region of the global GaN semiconductor devices market. Growth of the market in the region can be attributed to presence of a large number of GaN raw material suppliers in the region. A majority of market players in this region are located in Japan, South Korea, and China. The lower production and labor costs in these countries are aiding manufacturers to set up their production facilities. Additionally, the GaN semiconductor devices market in Asia Pacific is primarily driven by the increasing demand from the consumer electronics sector, most importantly from mobile, communication, and computing segments of the sector. The electronics industry in countries such as China and India is expanding at a rapid pace. Hence, these countries are expected to be potential markets for GaN semiconductor devices in the near future. In addition, China is planning to adopt LED and solid-state lighting technologies as well as radio frequency devices in the next few years. Thus, owing to growing economy and significant availability of skilled labor and raw materials, several companies are looking forward to shifting their manufacturing units to Asia Pacific. Considering all the above-mentioned factors, the GaN semiconductor devices market in Asia Pacific is expected to witness steady growth between 2019 and 2027. The market in North America and Europe is estimated to

witness significant growth during the forecast period, due to wide utilization of GaN-based transistors in defense & military and consumer electronics sectors in these regions. The GaN semiconductor devices market in Middle East & Africa and South America is expected to witness moderate growth in the near future.

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GaN Semiconductor Devices Market: Key Players

Key players operating in the global GaN semiconductor devices market are Cree, Inc., Efficient Power Conversion Corporation, FUJITSU, GaN Systems, NICHIA CORPORATION, NXP Semiconductors, Renesas Electronics Corporation, Toshiba Corporation, Texas Instruments Incorporated, and Transphorm Inc.

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