Wide Bandgap Semiconductors Market Estimated to Experience a Hike in Growth By 2032

Wide Bandgap Semiconductors Market Expected to Reach $5.4 Billion by 2032—Allied Market Research

Wide Bandgap Semiconductors Market

WILMINGTON, DE, UNITED STATES, July 7, 2025 /EINPresswire.com/ -- Allied Market Research, titled, "Wide Bandgap Semiconductors Market, by Material (Silicon Carbide (SiC), Gallium Nitride (GaN), Diamond, and Others), by Industry Vertical (Consumer Electronics, Automotive, Aerospace and Defense, IT And Telecom, Energy and Utility, and Others): Global Opportunity Analysis and Industry Forecast, 2022-2032." The wide bandgap semiconductors market size was valued at $1.6 billion in 2022 and is estimated to reach $5.4 billion by 2032, growing at a CAGR of 13.2% from 2023 to 2032. The wide bandgap semiconductor market is expected to grow during the forecast period, increased video streaming on the internet, which has resulted in a twofold increase in mobile device users and SiC and GaN-based semiconductors are used by manufacturers in the wide bandgap semiconductor industry for high performance wireless and telecommunications applications are driving the growth of the wide bandgap semiconductor Market. Organizations and individuals are investing in wide bandgap semiconductors for the growth of digital materials.

> The upcoming trends of the Wide Bandgap Semiconductors Market are growing investments in research and development activities for wide bandgap materials.”
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Moreover, wide bandgap semiconductors are implemented in the industrial sector and are being used more to support operational bandwidth to manage the enormous loads of traffic in data

utilization. Wide bandgap semiconductors provide greater voltage operation and simpler impedance matching, which is what is driving the market size.

Additionally, producers in the wide bandgap semiconductor industry are starting to see opportunities in the wide bandgap semiconductor market due to the LED lighting market's favorable development prediction. Wide bandgap semiconductor usage is resulting in longer LED illumination lives and energy savings, making them an affordable alternative for all customers and driving the wide bandgap semiconductors market demand.

Furthermore, the wide bandgap semiconductors market growth provides a different strategy for making significant advancements in the field of power electronics. Wide band gap semiconductors are being used by electric vehicle manufacturers to produce various vehicle parts, including HV-LV DC-DC converters, motor drives, charging apparatus, driver integrated circuits, and onboard chargers. This element is anticipated to propel the use trends of wide bandgap semiconductors throughout the forecast period.

Another physical characteristic that influences motor driving applications and high power conversion is thermal conductivity. Effective dissipation of the heat created within the component is vital, and the thermal conductivity index provides insight into the material's efficacy in heat conduction. Silicon carbide conducts heat three times as effectively as gallium nitride, which makes it perfect for high-temperature applications. Gallium nitride conducts heat somewhat slower than silicon.

In addition, producers in the wide bandgap semiconductor ecosystem are starting to see possibilities in the GAN bandgap semiconductor market due to the LED lighting market's favorable development prediction. Wide bandgap semiconductor adoption is causing LED lights to last longer and use less energy, which is acting as an effective choice for all customers and driving the market for wide bandgap semiconductors.

There have been three stages of development for the semiconductor industry thus far. Many types of electronic devices have made extensive use of the first and second generations of semiconductors, which are based on Si and GaAs semiconductor materials. Wide energy gap (WBG) semiconductors are materials used in the third generation of semiconductors, which have a wider energy gap than Si and GaAs. These comprise semiconductors with base materials made of SiC, AlN, GaN, diamond, or ZnO. SiC and GaN are the most developed ones among them. The growth of electronic information technology and renewable energy is undergoing a revolution thanks to the third generation of semiconductor materials.

The wide bandgap semiconductor market is segmented into material, industry vertical, and region. By material, the market is classified into silicon carbide (SiC), gallium nitride (GaN),

diamond, and others. By industry vertical, it is bifurcated into consumer electronics, automotive, aerospace and defense, IT and telecom, energy and utility, and others. Region-wise, the market is analyzed across North America, Europe, Asia-Pacific, and LAMEA, along with their prominent countries.

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Country-wise, China holds a significant share in the global wide bandgap semiconductors industry, owing to the presence of prime players. Major organizations and government institutions in the country are intensely putting resources into these global wide bandgap semiconductors; these prime sectors have strengthened the growth of the global wide bandgap semiconductors market trends in the region.

KEY FINDINGS OF THE STUDY

- In 2022, the silicon carbide (SiC) segment accounted for maximum revenue and is projected to grow at a notable CAGR during the forecast period.
- China contributed to the major Wide Bandgap Semiconductors Market Share in the wide bandgap semiconductor market, accounting for the highest revenue share in 2022.

The key wide bandgap semiconductors market analysis leaders profiled in the report include Infineon Technologies AG, Microsemi Corporation, STMicroelectronics, Maxell Ltd., ROHM Semiconductor, Texas Instruments Inc., Vishay Intertechnology Inc., Panasonic Corporation, Genesic Semiconductor, Nexperia, and Wolfspeed, Inc. These key players adopt strategies such as new product launch & development, acquisition, partnership & collaboration, and business expansion to increase the wide bandgap semiconductor market share during the forecast period.

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