Power Electronics Market Size to Exceed USD 60.10 billion by 2032, at a CAGR of 5.78% | Report by SNS Insider

The Power Electronics Market is growing due to the increasing adoption of electric vehicles and renewable energy.

Power Electronics Market Size & Growth Report

AUSTIN, TX, UNITED STATES, January 7, 2025 /EINPresswire.com/ -- Market Size & Industry Insights

As Per the SNS Insider,"The Power Electronics Market was valued at USD 36.28 billion in 2023 and is expected to grow to USD 60.10 billion by 2032, at a CAGR of 5.78% over the forecast period of 2024-2032."

Power Electronics Market Thrives Driven by Demand for Energy Efficiency and Sustainability

The Power Electronics Market is emerging rapidly owing to the rising demand for energy-efficient solutions across various sectors. With a global emphasis by governments on sustainability and energy efficiency, this opens up the door for new developments in power management. Power electronics are a backbone technology enabling the conversion and control of electrical power and are critical components in renewable energy systems, electric vehicles (EVs), and energy storage. By implementing these technologies, energy loss can be minimized, system performance can be optimized, and can help the transition to a low-carbon economy.

Get a Sample PDF of Power Electronics Market (with Full TOC & Graphs) @ https://www.snsinsider.com/sample-request/1246

SWOT Analysis of Key Players as follows:
-STMicroelectronics
-Infineon Technologies AG
-Vishay Intertechnology Inc.
-ON Semiconductor

-Renesas Electronics Corporation
-Texas Instruments Incorporated
-TOSHIBA CORPORATION
-Mitsubishi Electric Corporation
-Fuji Electric Co. Ltd.
-NXP Semiconductors
-Broadcom Inc.
-Nexperia
-Analog Devices Inc.
-Maxim Integrated
-Hitachi Ltd.
-Semikron International GmbH
-International Rectifier
-Power Integrations
-Schneider Electric
-Eaton Corporation

Electric Vehicles and Smart Grids Drive Power Electronics Market Growth and Innovation

Moreover, the evolving technologies in electric vehicles (EV) are stimulating the power electronics industry. Electric vehicles (EVs) use complicated power electronics systems for energy conversion and battery management which also increases the need for the same. Further driving market growth is the worldwide movement towards electrifying transportation and the emergence of smart grids as well as industrial automation. Increasing focus on minimizing carbon footprints at the same time as maximum energy savings will be the key drivers for the theme over the coming years, and power electronics will be indispensable in realizing these features, leading to a very favorable trend for the market for the years to come.

Silicon Dominates Power Electronics Market while Sapphire and Modules Drive Future Growth

By Material: In 2023, silicon accounted for the largest share of the power electronics market owing to its established and ubiquitous use in semiconductor devices. The power electronics industry has relied on silicon-based components because they are low-cost, rugged, and efficient. Its versatility in electronic applications ranging from consumer electronics to industrial power systems only further cements its leadership position in the market.

Sapphire is projected to witness the fastest compound annual growth rate (CAGR) between 2024 and 2032 owing to the rising need for high-efficiency applications in advanced power electronics. The finer crystal structure of Sapphire gives it the best Thermal conductivity, Stability at high temperatures, and Excellent Resistance to Radiation for next-generation devices for Electric vehicles, Renewable energy, Aerospace, and any advanced applications.

By Device: The ICs segment accounted for the largest share of the power electronics market in

2023, owing to their central position in almost every modern electronic apparatus. Integrated circuits (ICs) are miniature electronics that combine physical elements like transistors, diodes, and resistors into a single package, effectively delivering high functionality grounded on a compact, low-cost, and reliable design.

The modules are projected to grow at the fastest CAGR between 2024 and 2032 as it is increasingly being used in high-power applications. Power electronic modules combine several power semiconductor chips into one assembly and play vital roles in high-power systems such as EVs, renewable energy, and industrial (motors and drives).

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KEY MARKET SEGMENTS:

By Material
Silicon (Si)
Sapphire
Silicon Carbide (SiC)
Gallium Nitride (GaN)
Others

By Device
Discrete
Module
IC

By Application
ICT
Consumer Electronics
Power
Industrial
Automotive
Aerospace & Defense
Others

Asia Pacific Leads Power Electronics Market Growth with North America Set for Fastest Expansion

The Asia-Pacific region held the highest share of the power electronics market in 2023 thanks to the manufacturing base, technological advancement, and rapidly growing demand from several end-use industries. Electronics manufacturing has centralized into countries and regions like China, Japan, South Korea, and India, which in turn means that we are seeing huge demand for power electronics across consumer electronics, automotive, industrial automation, and

telecommunications. In addition to these trends, there are significant investments in infrastructure development and the transition to renewable energy in the region that are also driving power electronics adoption.

North America is projected to be the fastest-growing region during the forecast period, owing to the swift adoption of advanced technologies in power electronics. High-performance power electronic systems are increasingly being invited to help boost demand, fuelled by the region's focus on electric vehicle (EV) development, smart grids, and renewables. The U.S. and Canada have a high concentration of key industry players that are expanding their capabilities to drive advancements in sustainable and energy-efficient options, and this is an essential factor contributing to the growth of the power electronics market.

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Recent Developments:

-In December 2024, STMicroelectronics launched STM32-ready wireless IoT modules powered by Qualcomm's QCC743 SoC, offering Wi-Fi 6, Bluetooth 5.3, and Matter support.
-In November 2024, Infineon unveiled its CoolGaN™ 650 V G5 transistors, boosting efficiency and power density by up to 60% for power supplies and energy applications.
-In December 2024, Vishay Intertechnology introduced the SiJK140E, a 40 V MOSFET with a best-in-class RDS(ON) of 0.34 mΩ, designed for efficient power management applications.

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