

Computers and cars drive up demand for higher efficiency in the power sector

PowerPulse.net

Cloud computing and carbon emissions controls will see the extinction of the silicon semiconductor, as the power discretes market demands superior products, according to a new report by business intelligence experts **GBI Research**.

The new report shows that substrate technologies used in the manufacturing of power discretes have recently evolved, offering improved efficiency for the booming technology and power markets

Silicon (Si) was the only material originally used to produce power semiconductors. However, this has extended to include Silicon Carbide (SiC), gallium nitride on silicon (GaN-on-Si), Gallium Nitride (GaN), and Gallium arsenide (GaAs), which offer improved performance.

This change in substrate technology facilitates systems to use higher levels of power, a wider bandwidth, and perform with better efficiency than normally obtained by conventional silicon solutions.

Businesses with continuously running applications are demanding infrastructure in the form of cloud computing or data centers, which maintain the integrity and functionality of the hosted computer environment.

To enable more efficient and robust systems, data centers and UPS systems are built with high-performance semiconductor components such as IGBTs and Super-Junction power MOSFETs. As the business for datacenters increases, so does for that for power semiconductors.

Demand for energy-efficient and environmentally friendly products is driving the growth of the current power discretes market. Government policies focused on the need to save energy and reduce energy consumption, costs and emissions are improving energy efficiency.

At the 2008 G8 summit, member nations agreed to reduce global emissions by at least 50% before 2050. Electrically operated vehicles will require inverter control of acceleration and deceleration, increasing the demand for power discretes, as IGBTs and MOSFETs are the predominant power semiconductors used in this segment.

However, taxation and foreign production threatens the European power discretes market. Since 1999, packaged IGBT devices were imported by European nations, with a duty free rate applied to the imports. EU authorities have now changed this duty exemption through the reclassification of the devices, demanding import tax at 2-3%. This duty rate represents a significant cost restraint for the IGBT market due

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to the high volume of imports, and the significant predicted losses to both suppliers' and buyers' profit margins will therefore increase the cost of various electronic devices produced in the EU.

The sales revenue of power discretets is forecast to grow at a Compound Annual Growth Rate (CAGR) of 6.5% during 2012-2016.

More news and information regarding the latest developments in Smart Grid electronics can be found at Darnell's SmartGridElectronics.Net [1].

[SOURCE](#) [2]

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