

Intelligent Power Module (IPM) Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2023-2028

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Abstracts

Market Overview:

The global intelligent power module (IPM) market size reached US\$ 1.9 Billion in 2022. Looking forward, IMARC Group expects the market to reach US\$ 3.01 Billion by 2028, exhibiting a growth rate (CAGR) of 7.3% during 2023-2028.

An intelligent power module (IPM) refers to highly integrated and complex power modules used for optimizing the distribution and utilization of electrical power in data centers and other computer systems. It combines high- and low-speed insulated gate bipolar transistors (IGBTs) and diode power devices with integrated gate drives and protection housings. It provides control over voltage supply and offers temperature monitoring, voltage regulation, current limiting and load distribution. As a result, it is commonly used in consumer electronics, servo drives and renewable energy plants for enhanced circuit protection, smart load shedding and ensuring minimal instances of downtime and system redundancy.

Rapid industrialization, along with the increasing utilization of IPMs in renewable energy plants, is one of the key factors driving the growth of the market. They are widely used in both on-shore and off-shore wind turbine inverters, photovoltaic inverters and micro-inverters. Furthermore, the widespread utilization of IPMs in hybrid and electric vehicles (H/EVs) is also driving the market growth. They are used with high-power thyristors, which aid in minimizing the level of carbon emissions and enhancing the overall energy efficiency of the vehicle. In line with this, the increasing requirement for improved electrical monitoring systems in inductive cookers, high-frequency welding equipment, motor drives, uninterruptible power supplies (UPS) is also contributing to the market

growth. Additionally, various technological advancements, such as the development of innovative IPMs integrated with artificial intelligence (AI) systems, are acting as other growth-inducing factors. These systems offer wide-area and coordinated control over large scale electrical power systems and real-time network simulation and performance analysis, which, in turn, is contributing to their increasing utilization.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global intelligent power module (IPM) market report, along with forecasts at the global, regional and country level from 2023-2028. Our report has categorized the market based on voltage rating, current rating, circuit configuration, power device and application.

Breakup by Voltage Rating:

- Upto 600V
- 601V-1200V
- More than 1200V

Breakup by Current Rating:

- Upto 100A
- 101A-600A
- Above 600A

Breakup by Circuit Configuration:

- 6-PAC
- 7-PAC
- Others

Breakup by Power Device:

- IGBT
- MOSFET

Breakup by Application:

Consumer Electronics
Servo Drives
Transportation
Renewable Energy
Others

Breakup by Region:

North America

United States
Canada

Asia Pacific

China
Japan
India
South Korea
Australia
Indonesia
Others

Europe

Germany
France
United Kingdom
Italy
Spain
Russia
Others

Latin America

Brazil
Mexico
Others

Middle East and Africa

Competitive Landscape:

The report has also analysed the competitive landscape of the market with some of the key players being Fuji Electric Co. Ltd., Future Electronics Inc., Infineon Technologies AG, Mitsubishi Electric Corporation, ON Semiconductor Corporation, ROHM Co. Ltd, Sanken Electric Co. Ltd, SEMIKRON Elektronik GmbH & Co. KG, STMicroelectronics N.V. and Texas Instruments Incorporated.

Key Questions Answered in This Report:

How has the global intelligent power module (IPM) market performed so far and how will it perform in the coming years?

What has been the impact of COVID-19 on the global intelligent power module (IPM) market?

What are the key regional markets?

What is the breakup of the market based on the voltage rating?

What is the breakup of the market based on the current rating?

What is the breakup of the market based on the circuit configuration?

What is the breakup of the market based on the power device?

What is the breakup of the market based on the application?

What are the various stages in the value chain of the industry?

What are the key driving factors and challenges in the industry?

What is the structure of the global intelligent power module (IPM) market and who are the key players?

What is the degree of competition in the industry?

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