

# **IGBT & Thyristor Market by Packaging Type (IGBT Discrete, IGBT Module), Power Rating (Medium Power IGBT, High Power IGBT), Voltage (Below 400V, 600-650V), Application (Power Transmission Systems, Motor Drives), and Region - Global Forecast to 2025**

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## **Abstracts**

“IGBT market is expected to grow at CAGR of 4.6% from 2020 to 2025.”

The global IGBT market size is estimated to grow from USD 5.3 billion in 2020 to USD 6.6 billion by 2025, at a CAGR of 4.6%. The growing adoption of electric motors in industrial, commercial, and residential applications is one of the key factors fueling the growth of this market.

“Thyristor market is expected to grow at CAGR of 1.7% from 2020 to 2025.”

The global thyristor market size is estimated to grow from USD 781 million in 2020 to USD 849 million by 2025, at a CAGR of 1.7%. Government initiatives undertaken in various countries towards the replacement of aging power infrastructure is one of the key factors fueling the growth of this market.

“High power IGBT segment is expected to grow at the highest CAGR during the forecast period.”

The market for high-power IGBTs is expected to grow at the highest CAGR during the forecast period due to the increasing need for more robust and reliable IGBTs for high-power applications, such as HVDC systems, FACTS, solar inverters, and rail traction systems, where low- and medium-power IGBTs cannot operate. High-power IGBTs can run on a power rating of more than 1 MW. A growing number of solar energy projects,

HVDC projects, and wind farms are expected to contribute significantly to the growth of this market in the near future.

“Market for power transmission systems is expected to grow at the highest CAGR during the forecast period.”

Among applications, the thyristor market for power transmission is expected to grow at the highest CAGR during the forecast period. The primary factor contributing to the growth of this application is the increasing deployment of thyristors in HVDC systems and FACTS due to their low-power loss capability.

HVDC systems and FACTS employ thyristors to DC to AC and AC to DC conversion. Increasing number of HVDC and FACTS projects, such as the State Grid Corporation of China (SGCC) Transmission Lines (China), Russia–Japan Energy Bridge (Russia–Japan), Atlantic Wind Connection – Transmission (US), BRITIB Project (Spain–France–UK), and the Grain Belt Express Clean Line (US), has driven market growth over the years.

“Market for electric vehicles and hybrid electric vehicles is expected to grow at the highest CAGR during the forecast period.”

The market for electric vehicles and hybrid electric vehicles is expected to grow at the highest CAGR during the forecast period owing to the increasing demand for EVs/HEVs across the world as these vehicles are energy-efficient, environmentally friendly, and affordable. Moreover, initiatives taken by the governments of developing countries to minimize CO<sub>2</sub> emissions would further drive the demand for EVs and HEVs in the near future. For instance, the Indian government offers a subsidy of USD 1.4 billion to support the domestic electric vehicle industry, which, in turn, would provide lucrative growth opportunities to IGBT manufacturers.

Similarly, several worldwide projects focusing on developing a zero-carbon transport infrastructure would lead to increased demand for IGBTs in the next few years. For example, in March 2018, Infineon Technologies AG (Germany) partnered with SAIC Motor (China) to establish SIAMP, a power module joint venture company, in China. SIAMP would focus on manufacturing power modules for electric vehicles in China.

“High power IGBT is expected to grow at the highest CAGR during the forecast period.”

The market for high-power IGBTs is expected to grow at the highest CAGR during the

forecast period due to the increasing need for more robust and reliable IGBTs for high-power applications, such as HVDC systems, FACTS, solar inverters, and rail traction systems, where low- and medium-power IGBTs cannot operate. High-power IGBTs can operate on a power rating of more than 1 MW. A growing number of solar energy projects, HVDC projects, and wind farms are expected to contribute significantly to the growth of this market in the near future.

“APAC held the largest share of thyristor market in 2019.”

APAC held the largest share of the global thyristor market and is expected to register the highest CAGR during the forecast period. This growth of the market can be attributed to the increasing number of HVDC and FACTS projects in the region. Converters used in HVDC lines employ thyristors to convert AC to DC and vice versa. Further, APAC countries are focusing on adopting HVDC systems due to their low power loss in long-distance power transmission. The State Grid Corporation of China (SGCC) and the Russia– Japan Energy Bridge (Russia–Japan) are some of the major HVDC projects that are likely to be completed in the coming years. All such projects are expected to fuel the growth of the thyristor market in APAC.

Moreover, IGBT and thyristor manufacturers are deploying thyristors in HVDC systems in the region. For instance, in January 2019, ABB Ltd (Switzerland) received a contract worth USD 640 million from the Power Grid Corporation of India Limited (India), a national electricity grid operator in India. Under this contract, the company is likely to construct a transmission link of over 1,800 km to deliver electricity to more than 80 million people.

Breakdown of profiles of primary participants:

By Company Type: Tier 1 = 45%, Tier 2 = 35%, and Tier 3 = 20%

By Designation: C Level = 43%, Managers = 35%, Others = 22%

By Region: North America = 33%, Europe = 30%, APAC = 24%, RoW = 13%

Major players profiled in this report:

Infineon Technologies AG (Germany)

Fuji Electric Co., Ltd. (Japan)

ON Semiconductor (US)

Mitsubishi Electric Corporation (Japan)

STMicroelectronics (Switzerland)

Renesas Electronics Corporation (Japan)

Vishay Intertechnology (US)

ABB Ltd (Switzerland)

SEMIKRON (Germany)

Hitachi, Ltd. (Japan)

Toshiba Corporation (Japan)

## Research coverage

This report offers detailed insights into the IGBT market based on packaging type, power rating, voltage, application, and region, and the thyristor market based on application and region. Based on the packaging type, the IGBT market has been segmented into IGBT discrete and IGBT modules. Based on the power rating, the IGBT market has been divided into low, medium, and high power IGBT. Based on voltage, the IGBT market is segmented into 4,500 V. Based on the application, the IGBT market has been classified into power transmission systems, renewable energy, rail traction systems, uninterrupted power supply, electric vehicles and hybrid electric vehicles, motor drives, consumer electronics, and others. Based on application, the thyristor market has been segmented into power transmission systems, motor controllers, light dimmers, pressure control systems, liquid-level regulators, and others. The IGBT & thyristor market has been studied for North America, Europe, Asia Pacific (APAC), and the Rest of the World (RoW).

## Reasons to buy the report

The report is expected to help market leaders/new entrants in this market in the following ways:

1. This report segments the IGBT & thyristor market comprehensively and provides the closest approximations of the overall size of the market, as well as its segments and subsegments.
2. The report is expected to help stakeholders understand the pulse of the IGBT & thyristor market and provide them with information about key drivers, restraints, challenges, and opportunities.
3. This report aims at helping stakeholders in obtaining an improved understanding of their competitors and gaining insights to enhance their position in the market. The competitive landscape section includes the competitor ecosystem of the market, as well as growth strategies such as product launches, partnerships, collaborations, contracts, agreements, acquisitions, and expansions adopted by major market players.

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