

Thyristor - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 100 pages | Mordor Intelligence

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Report description:

The Thyristor Market is expected to register a CAGR of 0% during the forecast period.

Key Highlights

- Electricity demand is constantly increasing in developing economies due to the rising population. Thyristors are used for low switching losses and short switching times of metal-oxide-semiconductor field-effect transistor (MOSFET) to meet current electricity demands. Thus, they are highly in demand across developing economies.
- Moreover, In India, the monthly electricity demand in 2022 is expected to peak at around 132 billion kWh, 15% higher than the average monthly demand, similar to 2021 and 2019, when peak monthly demand was 15% and 19% higher, respectively than average monthly demand. Pandemic-related lockdowns dampened demand in 2020, but peak monthly demand was 6% higher than average monthly demand.
- However, the high cost of infrastructure deployment is impeding the market growth. Furthermore, the declining deployment of turbines and PV and the development of high-speed trains pose a significant challenge to the market.
- The coronavirus pandemic has disrupted the global production and supply chain system (COVID-19), negatively impacting the thyristor market. Most industrial managers and policymakers look for appropriate strategies and policies to restructure production patterns and meet consumer demand. Mainly the raw materials are imported from China and other Asian developing countries from the global supply chain standpoint. The COVID-19 pandemic has disrupted most transportation and distribution links between suppliers, manufacturing facilities, and customers.

Thyristor Market Trends

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Increasing Demand for Thyristor in Power Industry

- Thyristor modules play a vital role in power applications, owing to their low statistical failure rate. Thyristor modules are primarily used in the power industry to convert electrical energy from one form to another for various electrical applications.
- A thyristor module provides wide-range voltage control efficiently and cost-effectively by utilizing an optimal combination of on-load tap-changers and saturable reactors. Thyristor rectifier systems provide smooth step-less control via thyristor gate control from zero to the rated voltage.
- The growing use of thyristors in automobile ignition systems has also contributed to the market's expansion. In 2021, the global automotive industry will grow by double digits. Following an 18% drop in 2020, new car sales will increase by 15% in 2021. Commercial vehicle sales will rise by 16% in 2021, following a 16% drop in 2020.
- Thyristors are used in power supplies for digital circuits as a kind of "circuit breaker" or "crowbar" to prevent a power supply failure from damaging downstream components. Moreover, manufacturers of thyristor modules are continually engaged in developing such components.
- Due to these factors, demand for thyristor modules for long-distance power transmission is growing, with an increase in investment by various governments across the globe, which is expected to drive the global thyristor module market during the forecast period. Moreover, technologically advanced thyristor modules for various electrical uses. Thus, increasing focus on developing thyristor modules in the power industry is expected to bolster the market's growth.
- Additionally, thyristors have been used as lighting dimmers in television, film, and theatre for decades, replacing inferior technologies such as autotransformers and rheostats. They have also been used in photography as an important component of flashes (strobos).

Asia-Pacific is Fastest Growing Region for the Thyristor Market

- The global thyristor module market has been segmented into North America, Europe, Asia Pacific, Middle East & Africa, and Latin America. Because of the large number of thyristor module manufacturers in Asia-Pacific, it is the fastest-growing market for thyristors. Furthermore, many well-established players are focusing on technological advancements in semiconductor products, which will further boost the growth of the region's thyristors market during the forecast period.
- Asia-Pacific is anticipated to dominate the global thyristor module market throughout the forecast period, as many manufacturers of thyristor modules operate in the region. Additionally, due to the growing opportunity, many well-established players from the Asia Pacific region are focusing on technological advancement in semiconductor products, which is expected to boost the thyristor module market in the region during the forecast period.
- The increasing adoption of HDVAC in developing countries is also boosting the thyristors market. For example, according to Powerline Magazine, India is focusing on direct high-voltage current (HVDC) transmission systems because they allow electricity to be transmitted over long distances with minimal loss. Currently, HVDC transmission lines account for 4% of total transmission line length. Additionally, in 2020, India's predominant voltage type of electricity transmission line is 400 kV, accounting for 43% of the total line length. With 42%, it is followed by 220 kV transmission lines.

Thyristor Industry Overview

The Thyristor Market is highly fragmented owing to the various key players in the market. Various players are operating in the global market and are majorly focusing on the new technological advancements and expansions to meet the increasing demand for thyristor modules. In addition, manufacturers are entering into partnerships for the development of innovative products.

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- May 2021, New BiPolar power modules featured industry-standard housings, the lowest losses, and the highest operating temperatures. The 60Pak module family provides the ultimate reliability and is the epitome of quality. It features the lowest losses and highest operating temperatures in industry-standard housing. Failure is not an option, whether efficiently driving industrial motors, smoothly controlling fans and pumps, or supplying power to demanding applications. These new products wrap up Hitachi Energy's best-quality products in standard industrial housing, delivering the highest performance, outstanding reliability, and increased overload capability.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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