

Plastic Film Capacitors - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The Plastic Film Capacitors Market size is estimated at USD 2.31 billion in 2024, and is expected to reach USD 2.94 billion by 2029, growing at a CAGR of 4.90% during the forecast period (2024-2029).

Plastic Film capacitors primarily include multiple families of capacitors that use different plastics as dielectric materials. They significantly replace paper-type capacitors in applications such as audio, radio circuits, and circuits operating at low to moderate voltages. Some of the commonly used plastics in these capacitors include polycarbonate, polypropylene (PP), polyester (PET), polystyrene, polysulfone, Kapton polyimide, Teflon (PTFE fluorocarbon), and metalized polyester (metalized plastic).

Key Highlights

- The significant advantage of using a plastic film capacitor is that it has a low distortion factor and exceptional frequency characteristics. Also, the wide range of plastic films that are used for these capacitors makes them versatile. These capacitors do not wear off quickly and are suited for high-voltage and high-frequency applications such as coupling and decoupling circuits and audio circuit ADCs.
- With a rising focus on sustainable solutions across various industries for power generation, the demand for solar and wind power inverters has increased. To cater to this, vendors are introducing new plastic-film capacitors. For instance, in May 2021, New Yorker Electronics introduced CDE-Illinois capacitors (33 to 220 uF and up to 1,440 WVDC, -40C to +85C) that are manufactured with low-profile metalized polypropylene film and offer high capacitance. The product is designed for applications such as DC links, electric heaters, motor drives, induction heaters, UPS systems, and solar and wind power inverters.
- Moreover, the adoption of wearables in the healthcare sector has been gaining traction in recent times, which, in turn, has been one of the significant factors influencing the market studied. The major trends in wearable connected devices include the increasing demand for pain management wearable devices and the increased use of wearables for cardiovascular disease

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management, among others.

-Further, in April 2022, Electroninks, Inc. announced the production-scale availability of its full suite of proprietary metal-organic decomposition (MOD) conductive metal ink solutions. In addition to bringing standalone ink products to market, Electroninks is also bringing total solutions to the customer with its line of ink products, including its own small desktop prototype additive manufacturing solution for rapid on-demand printed circuit board (PCB) printing and repair, called CircuitJet. These developments will also drive the study market.

-The COVID-19 pandemic led to immense disruptions in supply chains across industries globally. Many businesses globally halted or reduced operations to help combat the spread of the virus. However, in post pandemic scenario, the electronic components market, leading to increased operation levels across the supply chain for raw materials and component production levels. This denoted a rise in sales among a range of regions and countries.

-Moreover, electronic components are resource-intensive. The materials consumed in the mass production of surface-mount electronic components usually come in the form of engineered powders and pastes, making up the largest "variable cost" associated with producing passive components like capacitors.

Plastic Film Capacitors Market Trends

Consumer Electronics is Expected to Hold Significant Market Share

- The rapid surge in demand for consumer electronics products has boosted the market. Devices such as smartphones and tablets need small antennas capable of delivering high performance. These antenna systems demand capacitors with specific performance characteristics. Capacitors are critical components in antenna systems. The most general applications of capacitors in antenna systems include frequency tuning, impedance matching, and filtering. Capacitors for use in these applications must have prominent performance characteristics, including low leakage current, a high quality factor, and high linearity.

- Numerous advancements in capacitor technology have been made to produce capacitors that meet the strict performance requirements of smartphone antenna systems. For instance, capacitor manufacturers use microelectromechanical systems (MEMS) technology to make ultra-small and thin capacitors for smartphone antenna systems.

- According to the Consumer Technology Association, the retail revenue of the consumer electronics market in the United States constantly increased during the period from 2012 to 2021. Based on the projected retail sales for 2023, consumer electronics retail sales in the United States is expected to reach USD 485 billion.

- Moreover, capacitors are commonly incorporated in the flash module of cameras. Camera flash capacitors are constructed to have low resistance and significantly low inductance to deliver their energy to the flash tube as fast as possible, achieving a fast rise time on the pulse of current. The internal connections are also made more robust to avoid localized heating due to the high current. Without the flash capacitor, the batteries located inside the digital cameras would drain quickly.

- Furthermore, developments in wearable electronics, such as smartwatches, head-mounted displays, body-worn cameras, ear-worn devices, and fitness trackers, among others, drive innovations and the adoption of plastic film capacitors. For instance, capacitors are being widely used in wearable consumer electronics due to their wear and tear capability, which exhibits a loss of a few percentage points of energy performance after 10,000 cycles of charging and discharging.

Asia-Pacific is Expected to Hold Significant Market Share

- The Asia-Pacific region is one of the most important markets for capacitors. The automotive industry is increasing in China, and the country plays an increasingly important role in the global automotive market. The government views its automotive industry, including the auto parts sector, as one of the country's pillar industries. The government of China estimates that China's

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automobile output is expected to reach 30 million units by 2020 and 35 million units by 2025. This is expected to drive the studied capacitors' demand.

- The popularity of EVs is growing, and China is regarded as one of the dominant adopters of electric vehicles. The country's 13th Five-Year Plan promotes the development of green transportation solutions, such as hybrid and electric vehicles, for advancements in the country's transportation sector.

- According to data by the China Passenger Car Association (CPCA), sales of these new energy vehicles (NEVs) more than doubled in November and December of 2021, increasing full-year deliveries by 169% to a record 2.99 million units, or 14.8% of new sales in China, the world's largest vehicle market. This is anticipated to boost the country's adoption of plastic film capacitors.

- According to the IEA, China was the undisputed leader in renewable growth, estimated to account for around 40% of its total clean energy mix by 2022. The country also surpassed its 2020 solar panel target.

- Additionally, to promote the adoption of zero-emission vehicles, the New South Wales (NSW) state government in Australia introduced an Electric Vehicle Strategy in 2021 with funding totaling almost AUD 500 million. 8,688 electric vehicles were sold during the first half of 2021 in Australia. The country is witnessing a growing electric vehicle support infrastructure as well. Australia has more than 3,000 public chargers for electric vehicles. The country's EV market had 31 electric vehicle models, and by the end of 2022, it was estimated that there would be 58 electric vehicle models in the country.

Plastic Film Capacitors Industry Overview

The plastic film capacitors market is fragmented and has several major players. These major players with prominent shares in the market are focusing on expanding their customer base across foreign countries. The market comprises Panasonic Corporation, Vishay Intertechnology Inc., TDK Corporation, AVX Corporation, KEMET Corporation, and many others. These companies leverage strategic collaborative initiatives to increase their market shares and profitability.

- November 2023: Electrocube has developed a range of metalized polypropylene film capacitors specifically tailored for high-power inverters used in various military, commercial, land, and sea applications. These capacitors have been carefully designed and optimized to function exceptionally well in high temperature and high current scenarios with AC and pulsing signals. Furthermore, their remarkable capability to withstand high surge currents without deterioration makes them an outstanding alternative to electrolytic capacitors.

- May 2023: Sabic's Elcres introduced its polycarbonate copolymer-based HTV150A films, which can potentially decrease dissipation losses by up to 40% when exposed to temperatures up to 150C and frequencies up to 100 kHz. This material has already demonstrated its effectiveness in thin-wall capacitor films. By utilizing Elcres HTV150A dielectric films with lower dissipation losses, engineers can benefit from improved operating efficiency, reduced internal heat generation, and more stable hot spot temperatures, resulting in increased flexibility when designing capacitors. It is anticipated that these films will lead to reduced dissipation losses in capacitors.

Additional Benefits:

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

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