

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

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Report description:

The Capacitor Market size is estimated at USD 26.70 billion in 2025, and is expected to reach USD 35.56 billion by 2030, at a CAGR of 5.9% during the forecast period (2025-2030).

Key Highlights

- PCB miniaturization and advancements in semiconductor and circuit architectures paved the way for the rise in demand for capacitors in various applications, including smartphones.
- As communication base stations become increasingly smaller and use higher frequency bands, designing is becoming more difficult owing to the limited number of components mounted on the substrate and restrictions on the size and operating temperature of components. Due to their lower cost and small size, passive components like capacitors are increasingly preferred for these applications.
- The widespread adoption of 5G smartphones and their increasing functionality stoke demand for further miniaturization and higher electronic circuitry density. For instance, several manufacturers, such as Qualcomm and MediaTek, are introducing chipsets that support 5G, which multiple smartphone manufacturers use. Previously, 5G support was confined to only flagship mobiles; now, mid-level smartphones also support 5G to introduce cheaper chipsets in the market. Such initiatives are increasing the need for ceramic capacitors.
- Among the applications, multilayer ceramic capacitors (MLCC) are essential components of many electronic devices and are widely used in wearable devices and smartphones (approximately 900 to 1100 multilayer ceramic capacitors are installed in smartphones). Moreover, new technologies, like IoT, 5G, and EVs, are highly dependent on the availability of MLCCs, as these fulfill higher efficiency needs. This has driven manufacturers to align their product lines and production capacities to meet the requirements of these technologies.
- Renewable applications such as solar energy-dependent watches and display lights, among other small devices, have increased

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and have created many application areas for EDLC. In addition, electric double-layer capacitors are used as backup sources of memory in computers and are used together with small batteries. Manufacturers provide these capacitors based on carbon nanotubes and graphene due to the high costs and their limited scalability. Due to evolving green energy applications, improving price-performance ratios, and growing new applications across several industries, there are advancements in double-layer capacitors.

- To reduce the size of the capacitors, the manufacturers are adopting and using various combinations, such as voltage range and optimal dielectric spread, to fulfill the surging needs. As the demand for capacitors is fueled by significant product development in the IoT, consumer electronics, and electric vehicles (EV), any new advancements in these industries have become limited by the capacitor's availability during the shortage, with lead times extending from several months to a year in some cases.

Capacitor Market Trends

Ceramic Capacitors to Hold the Largest Market Share

- Ceramic capacitors are one of the most commonly used in most electrical instruments, as they offer reliability and are cheaper to manufacture. These capacitors are used in multiple industries and primarily consist of ceramic or porcelain discs that exist in a non-polarized form. The ceramic material is also an excellent dielectric due to its poor conductivity and its efficient support of electrostatic fields.

- The shift towards sophisticated vehicles, such as self-driving vehicles and ADAS (Advanced Driver Assistance Systems), is driving the use of MLCCs per vehicle. Therefore, manufacturers are involved in product innovation related to higher capacitance for ceramic capacitors to cater to such a trend.

- For instance, in February 2022, Murata Manufacturing Co., Ltd. announced the launch of the NFM15HC435D0E3 MLCC, designed with 3 terminals to provide a capacitance of 4.3 F. The capacitor is designed for automotive applications to attain results on noise removal and superior decoupling that are required for high-performance processors employed in advanced driver assistance systems and autonomous driving functions. This indicates the growing demand for ceramic capacitors in the automotive industry. However, with the impact of the constant COVID-19 pandemic, the supply chain is expected to be disrupted on a small scale.

- Moreover, the demand for MLCC in electric vehicles is also increasing, as most of the EVs use close to 10,000 MLCC due to increased features like driver assistance functions and fully autonomous systems. As per the International Energy Agency (IEA), there has been a noteworthy 60% surge in global electric vehicle (EV) sales in 2022. This milestone achievement marks the first time sales have exceeded 10 million units, showing remarkable growth from the 6.6 million units sold in 2021. Further, the high adoption of EVs and the complete phase-out dates of ICE engines set by various governments will drive the growth of MLCC in the automotive sector.

- The demand for MLCCs is also going to increase considerably due to rapid digitalization and miniaturization, and the manufacturers are going to find it hard to optimize their production. Moreover, end users are focusing on incorporating smaller formats of MLCCs, such as the 0201 or 0402 sizes, to make them future-proof, as the availability of 1825, 1206, and 0805 is becoming limited, and the use of smaller formats is expected to insulate the end users from supply chain difficulties.

Asia-Pacific Region will Dominate the Market Throughout the Forecast Period

- The Asia-Pacific region is one of the most prominent 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 automobile output is expected to reach 35 million units by 2025. Consequently, the demand for capacitors is anticipated to

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increase further across the region.

- 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 cars, for advancements in the country's transportation sector.
- China's electric cars are on their way to reaching the 20% nationwide penetration goal in 2022, well ahead of the Chinese government's 2025 forecast, due to new models by dozens of competitors attracting new buyers and encouraging owners to switch to electric vehicles.
- According to the China Passenger Car Association (CPCA), it is anticipated that China's passenger car sales will amount to 23.5 million units in 2023. Among these, approximately 8.5 million units are projected to be NEVs, with an expected NEV penetration rate of 36%. China is the leading world's largest vehicle market. This is anticipated to boost the adoption of capacitors in the country.
- The region is also witnessing increasing investments in the market. For instance, in January 2022, Exxelia, a leading designer and manufacturer of passive components and subsystems, announced that it completed the majority acquisition of Alcon Electronics. Alcon Electronics is an Indian designer and manufacturer of catalog and custom-designed film and aluminum electrolytic capacitors, primarily serving the renewable energy, medical imaging, induction heating equipment, power generation, and railway end markets. Alcon Electronics provides a wide range of film and screw-terminal aluminum electrolytic capacitors for power electronic applications.

Capacitor Industry Overview

The capacitor market is a semi-consolidated market. The market is competitive with the presence of various large-scale manufacturers in the market across the globe. The capacitor market has long-standing established players who have made significant investments. These companies leverage strategic collaborative initiatives to increase their market share and profitability. Some of the prominent vendors in the market include Murata Manufacturing Co., Ltd., TDK Corporation, KEMET Corporation, Vishay Intertechnology, Inc., and WIMA GmbH & Co. KG, among others.

- November 2023: ROHM has developed the BTD1RVFL series, a new line of silicon capacitors. These devices are gaining popularity in the smartphone and wearable device industries. Due to their extensive experience in silicon semiconductor processing, the company has achieved higher performance in a more compact design. By utilizing thin-film technology, their silicon capacitors offer a greater capacitance in a thinner form compared to the current multilayer ceramic capacitors (MLCCs) available in the market.
- April 2023: Kyocera Corporation announced that the company's Electronic Components Division developed a new capacitor (MLCC) with EIA 0201 size, with a capacitance of 10 microfarads, which the company claims to be the industry's highest among MLCCs in the 0201 case size. The dimensions of the capacitor are 0.6 mm x 0.3 mm.

Additional Benefits:

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

Table of Contents:

1 INTRODUCTION

1.1 Study Assumptions and Market Definition

1.2 Scope of the Study

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2 RESEARCH METHODOLOGY

3 EXECUTIVE SUMMARY

4 MARKET INSIGHTS

4.1 Market Overview

4.2 Value Chain Analysis

4.3 Industry Attractiveness - Porter's Five Forces Analysis

4.3.1 Bargaining Power of Buyers

4.3.2 Bargaining Power of Suppliers

4.3.3 Threat of New Entrants

4.3.4 Threat of Substitute Products

4.3.5 Intensity of Competitive Rivalry

4.4 Macro-Economic Analysis of the Market

5 MARKET DYNAMICS

5.1 Market Drivers

5.1.1 Growing Adoption of EVs to Boost the Demand for Capacitors

5.1.2 Increasing Adoption of Capacitors in the Telecom and Electronics Industry

5.2 Market Restraints

5.2.1 Requirement of Technical Competence for Developing Advanced Capacitors

6 MARKET SEGMENTATION

6.1 By Type

6.1.1 Ceramic Capacitors

6.1.2 Tantalum Capacitors

6.1.3 Aluminum Electrolytic Capacitors

6.1.4 Paper and Plastic Film Capacitors

6.1.5 Supercapacitors/EDLCs

6.2 By End-user Industry

6.2.1 Automotive

6.2.2 Industrial

6.2.3 Aerospace and Defense

6.2.4 Energy

6.2.5 Communications/Servers/Data Storage

6.2.6 Consumer Electronics

6.2.7 Medical

6.3 By Geography

6.3.1 Americas

6.3.2 Europe, Middle East and Africa

6.3.3 Asia Pacific (Excl. Japan and South Korea)

6.3.4 Japan and South Korea

7 COMPETITIVE LANDSCAPE

7.1 Company Profiles

7.1.1 Murata Manufacturing Co., Ltd.

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- 7.1.2 KEMET Corporation
- 7.1.3 TDK Corporation
- 7.1.4 Vishay Intertechnology, Inc.
- 7.1.5 WIMA GmbH & Co. KG
- 7.1.6 Panasonic Corporation
- 7.1.7 KYOCERA AVX Components Corporation
- 7.1.8 WIMA GmbH & Co. KG
- 7.1.9 Cornell Dubilier Electronics Inc.
- 7.1.10 Yageo Corporation
- 7.1.11 Lelon Electronics Corp
- 7.1.12 United Chemi-Con (Nippon Chemi-Con Corporation)
- 7.1.13 Wurth Elektronik eiSos GmbH & Co. KG
- 7.1.14 Eaton Corporation PLC
- 7.1.15 Honeywell International Inc.

8 MARKET OPPORTUNITIES AND FUTURE TRENDS

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