

Automotive MLCC - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2024 - 2029)

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Abstracts

The Automotive MLCC Market size is estimated at 2.94 billion USD in 2024, and is expected to reach 15.36 billion USD by 2029, growing at a CAGR of 39.23% during the forecast period (2024-2029).

Unveiling the multifaceted role of MLCCs in the automotive evolution is driving MLCC demand

In the ever-evolving landscape of the automotive industry, the role of MLCCs has moved beyond mere electronic components. These miniature powerhouses are the cornerstone of modern vehicular systems, orchestrating a symphony of functions ranging from power distribution and noise suppression to signal conditioning and voltage regulation.

The 0 603 MLCCs are compact yet indispensable contributors. These capacitors play a pivotal role in shifting toward compact and energy-efficient designs. With advancements in automotive technologies, the demand for streamlined solutions has elevated the prominence of the 0 603 segment.

The 0 805 capacitors occupy a significant position in the market, particularly as electric vehicles (EVs) become mainstream. The surge in EV adoption emphasizes the need for effective power distribution and control, underscoring the relevance of the 0 805 segment. As EVs redefine the automotive landscape, these capacitors act as enablers of performance and efficiency.

The 1 206 capacitors represent a balance between size and versatility, making them a preferred choice for diverse automotive applications. As the automotive industry embraces technological advancements, the importance of the 1 210 segment becomes evident.

The 'others' segment encompasses an array of capacitance values that cater to specialized automotive requirements. From emerging technologies to unique applications, this diverse segment exemplifies the adaptable nature of MLCCs in meeting distinct automotive needs.

Unveiling the impact of MLCCs in Asia-Pacific, Europe, and North America

Asia-Pacific, Europe, and North America are driving transformative changes in the automotive industry. Their pursuit of technological advancements, sustainability, and smart mobility solutions underscores the crucial role of multi-layer ceramic capacitors (MLCCs) in supporting the evolution of vehicles. As each region propels toward a future of innovation and efficiency, the demand for high-quality MLCCs continues to grow, cementing their significance in the automotive value chain.

Asia-Pacific stands as an epicenter of automotive innovation characterized by rapid technological advancements and growing consumer demand. With major automotive hubs like China, Japan, and South Korea, this region is at the forefront of electric vehicle (EV) adoption, connected cars, and autonomous driving.

Europe's automotive industry is synonymous with innovation, sustainability, and stringent environmental regulations. The region's commitment to reducing carbon emissions and transitioning toward cleaner mobility solutions is reshaping the automotive landscape. As electric and hybrid vehicles gain traction, the demand for MLCCs for power management, noise suppression, and voltage regulation is escalating.

North America's automotive sector is characterized by its pursuit of smart mobility solutions and advanced technologies. As North American consumers seek enhanced driving experiences and cutting-edge features, the demand for MLCCs in applications like EVs, infotainment systems, and ADAS is on the rise. The region's dynamic automotive landscape positions it as a key driver of the MLCC market's expansion.

Global Automotive MLCC Market Trends

Infrastructure improvement for hydrogen stations continues to increase sales

Fuel cell electric vehicles (FCEVs) use hydrogen energy stored as fuel, which is then converted into electricity by the fuel cell and has a propulsion mechanism similar to that of an electric vehicle. Compared to vehicles powered by conventional internal combustion engines, FCEVs do not emit any harmful exhaust emissions.

Fuel cell electric vehicle shipments accounted for 0.043 million units in 2022, and these are expected to reach 0.071 million units in 2029. As renewable energies like wind and solar contribute increasingly to the hydrogen manufacturing process, there will be a huge increase in the demand for energy-efficient FCEVs.

As the demand for low-emission vehicles rises, stricter carbon emission standards are being implemented, and more emphasis is being placed on the adoption of FCEVs due to benefits like quick refueling. To encourage the development of FCEVs, several government and commercial organizations are collaborating and investing in advancing fuel cell technology and the development of hydrogen refueling infrastructure. According to the IEA, at the end of 2021, there were about 730 hydrogen refueling stations (HRSs) globally providing fuel for about 51,600 FCEVs. This represents an increase of almost 50% in the global stock of FCEVs and a 35% increase in the number of HRSs from 2020. These factors contribute to the high growth of FCEVs in the future.

Stringent government regulations are increasing the penetration of electric vehicles

MLCCs have emerged as a perfect component for EV electronics and subsystems, offering high-temperature resistance and an easy surface-mount form factor. Approximately 8,000-10,000 MLCCs are used in an electric vehicle. MLCCs in electric vehicles are commonly used in battery management systems (BMS), onboard chargers (OBC), and DC/DC converters. In addition to meeting the general specifications required for these EV subsystems and having the ability to function reliably in harsh environments inside an EV, component manufacturers should also be IATF 16949-certified and compliant with AEC-Q200.

Electric vehicle shipments accounted for 16.4 million units in 2022, and it is expected to rise to 25.52 million units in 2029. Several countries have implemented strict environmental regulations to reduce greenhouse gas emissions and combat climate

change. As a result, automakers are under increasing pressure to produce more electric vehicles and reduce their reliance on fossil fuels. Consumers are becoming more environmentally conscious and are looking for more sustainable alternatives to traditional gasoline-powered vehicles.

The COVID-19 pandemic and Russia's war in Ukraine disrupted global supply chains, and the automotive industry has been heavily impacted. However, in the longer term, the EV market is witnessing sales growth in some regions of the world as government and corporate efforts to support the deployment of publicly available charging infrastructure are providing a solid basis for further increase in EV sales. Publicly accessible chargers worldwide approached 1.8 million, with nearly 500,000 chargers installed in 2021, of which a third were fast chargers, which accounted for more than the total number of public chargers installed in 2017.

Automotive MLCC Industry Overview

The Automotive MLCC Market is moderately consolidated, with the top five companies occupying 60.58%. The major players in this market are Kyocera AVX Components Corporation (Kyocera Corporation), Murata Manufacturing Co., Ltd, TDK Corporation, Walsin Technology Corporation and Yageo Corporation (sorted alphabetically).

Additional Benefits:

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