

Quad-Flat-No-Lead Packaging Market Set for Robust Growth by 2031: Key Drivers and Trends Revealed

Quad-Flat-No-Lead Packaging Market Expected to Reach \$1.1 Billion by 2031 — Allied Market Research

WILMINGTON, DE, UNITED STATES, January 9, 2025 /EINPresswire.com/ -- Allied Market Research, titled, "Quad-Flat-No-Lead Packaging Market," The quad-flat-no-lead packaging market size was valued at \$453.10 million in 2021, and is estimated to reach \$1.1 billion by 2031, growing at a CAGR of 8.8% from 2022 to 2031.



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The quad flat-no-lead (QFN) is a leadless packaging with exposed die pads for mechanical and



Quad-flat-no-lead packaging technology is increasingly used in automotive accessories like steering controls and automatic wipers, driving market growth in the coming years."

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thermal integrity. It also has peripheral terminal pads. The container may be either rectangular or square. The QFN package could be utilized in a variety of applications. QFN packaging is appropriate for applications that require low standoff heights, decreased footprint, increased thermal performance, or reduced weight. This bundle can greatly benefit portable electronic devices, cell phones, and other devices.

The thermal cycle stress that a quad-flat-no-lead component might endure throughout its operating life is a

more difficult thermal problem. Multiple package design improvements have increased in solder joint failure in electronic devices. Lead elimination reduces total joint compliance. As package sizes reduce, more silicon and less plastic are used, increasing the mismatch in coefficients of thermal expansion (CTE) between the item and the printed circuit board.

Consumer electronics are driving the trends for electronic packaging technologies toward size reduction and enhancing functionality. The rapid development and widespread use of QFA packaging used in consumer electronics started a new era in the electronics industry based on microelectronic technology, in which electronic goods become digital, smaller, and more intelligent. The trend in microelectronics has been toward ever-expanding I/Os on packages, which is influencing semiconductor packaging architecture. Smaller sizes, lighter weights, low total production costs, simpler assembly procedures, and enhanced electrical performance are all benefits of QFN packages. Due to these benefits, QFN has already become widely used in the business sector. These factors are anticipated to boost quad-flat-no-lead packaging market growth in the upcoming years.

The global quad-flat-no-lead packaging market share is segmented based on type, molding method, terminal pads, industry verticals, and region. By type, it is classified into the air-cavity QFN, plastic-moulded QFN, and others. By molding method, it is classified into punched and sawn. Terminal pads, it is classified into fully exposed terminal ends, pull-back terminal ends, and side wettable flank terminals. By industry vertical, it is classified into consumer electronics, industrial, automotive, computing/networking, and communications. By region, the market is analyzed across North America, Europe, Asia-Pacific, and LAMEA.

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The report offers a comprehensive analysis of the global <u>quad-flat-no-lead packaging market</u> <u>trends</u> by thoroughly studying different aspects of the market including major segments, market statistics, market dynamics, regional market outlook, investment opportunities, and top players working towards the growth of the market. The report also sheds light on the present scenario and upcoming trends & developments that are contributing to the growth of the market. Moreover, restraints and challenges that hold power to obstruct the market growth are also profiled in the report along with Porter's five forces analysis of the market to elucidate factors such as competitive landscape, bargaining power of buyers and suppliers, threats of new players, and the emergence of substitutes in the market.

• COVID-19 impacted almost all industries and the electronics and semiconductor manufacturing companies stopped their operations owing to import-export restrictions, lockdown imposed across several countries, and a shortage of labor; the fear of contracting the novel coronavirus

led to a decrease in demand in the market.

- Social distancing norms closed borders, and production constraints, due to the pandemic, across various countries such as China, India, and the U.S. have affected the global market.
- The emergence of the COVID-19 pandemic negatively affected the quad-flat-no-lead packaging market. The automotive industry was badly affected during the COVID-19 pandemic due to social distancing norms, import-export restrictions, and availability of raw materials which resulted in a reduction in demand for quad-flat-no-lead packaging as it is widely used in automobile components.
- Due to the COVID-19 pandemic demand for QFN from the semiconductor manufacturing sector decreased, due to various governments throughout the world instituted limitations including lockdowns and social distancing rules, which influenced the semiconductor industry's ability to produce semiconductors. As a result, demand for quad-flat-no-lead technology decreased.

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- Based on type, the air-cavity QFN sub-segment emerged as the global leader in 2021 and the fastest-growing sub-segment during the forecast period
- Based on the molding method, the punched sub-segment emerged as the global leader in
 2021, and the sawn sub-segment is predicted to show the fastest growth in the upcoming years
- Based on the terminal pads, the fully exposed terminal ends sub-segment emerged as the global leader and fastest growing sub-segment during the forecast period
- Based on industry vertical, the automotive sub-segment emerged as the global leader and fastest-growing sub-segment during the forecast period
- Based on region, the Asia-Pacific market registered the highest market share in 2021 and is projected to maintain the position during the forecast period.
- The report also provides in-depth Quad-Flat-No-Lead Packaging Market Analysis

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