

Surface Mount Technology - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The Surface Mount Technology Market size is estimated at USD 6.14 billion in 2024, and is expected to reach USD 8.87 billion by 2029, growing at a CAGR of 7.65% during the forecast period (2024-2029).

The exponential growth of the electronics industry, the shrinking of current electronic components, the increased usage of flexible printed circuit boards, and the growing interest in electric cars are some of the key drivers driving the rise of surface mount technology.

Key Highlights

- In the upcoming years, surface mount technology is anticipated to experience increasing acceptance. Industries are shifting their preference from through-hole technology to surface mount technology as a result of its many benefits, including fewer components, better component density, improved mechanical performance, and easier and faster automated assembly.
- The major key benefits of converting to surface mount technology, to put it simply, were speed, cost-effectiveness, and reliability. Because of the simpler production processes and easier execution, all these advantages are useful during the assembly process. SMT is a significant improvement over conventional leaded components. The SMT components in printed circuit boards provide a quicker, lighter, and more reliable substitute for the conventional leaded components. Additionally, it's important to note that manufacturers and designers have been able to significantly reduce costs by using SMT components in PCBs.
- Electric car sales and manufacturing are increasing as a result of the rising demand for their use, offering this market promising growth opportunities. Because it offers superior mechanical efficiency under shock and vibration, surface-mount technology is used to manufacture the majority of the electrical components used in electric vehicles.
- Using conductive tracks and other features, circuit boards can mechanically support and electrically link electronic components. With the advent of Surface Mount Technology technology, PCB assembly is now done by solder joints, making spare parts and

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materials easier to remove from the target parts in the event of failure. In the past, PCBs were created using a method that fixed the component and made it extremely challenging to disassemble.

-Most of the electronics are expected to be more compact, and there is an increase in demand for smaller units, where SMT makes this possible. But even though these units are not as bulky as older devices, there is a much higher component density, as well as more connections per component. This means that electronics can be more advanced and efficient than ever before while the form factor is still as compact as possible.

-However, SMT is not suited for any large, high-power/high-voltage parts. Also, the small size of SMDs can create issues in that the solder joint dimensions continue to become smaller as advances are made toward ultra-fine pitch technology. Ultimately, this means that less solder can be used for each joint, which can result in voiding and integrity issues.

-Additionally, the market is faced with a few difficulties. For instance, SMT demands more meticulous attention to detail than through-hole installation would. Additionally, the cost of an SMT machine as an investment is very expensive.

-The COVID-19 outbreak has had a considerable impact on the global and national economies. Many end-user industries have been affected, including those in electronics manufacturing. A large part of manufacturing includes work on the factory floor, where people are in close contact as they collaborate to boost productivity. The market is facing component shortages for building circuit boards. As many component manufacturers shut down or run at minimum capacity, the ability to keep a healthy stock of components on hand has been dramatically reduced. Many PCB components required for the operation of SMT assembly lines get shipped on regular commercial airlines as cargo. As flights have been canceled owing to international travel restrictions, shipping availability has diminished, and prices have escalated.

Surface Mount Technology (SMT) Market Trends

Passive Components to Hold Significant Growth

- Smaller passive component assemblies made possible by SMT make electrical devices that are portable and lightweight possible. The trend toward further downsizing is focused mainly on passive components (resistors and capacitors), where component sizes of 01005 and 0201 (metric) with dimensions of 400 x 200 mm and 300 x 150 mm will be addressed. Due to this, there is a significant demand for research to assist the industry in incorporating these components into their product designs.

- Moreover, when used in PCB manufacturing with passive components, SMT helps to save more space. Additionally, this technique allows for placing more components on a PCB. SMT has enabled PCB producers to create tiny and intricate boards. Advanced electrical gadgets are then produced using these boards.

- Regarding PCB design and material, the surface mount technique offers more flexibility. Additionally, surface-mount passive electrical parts are soldered directly to the PCB surface. As a result, this gives PCB boards a lot of versatility.

- However, the market for passive and connecting electronic sound components have been negatively impacted by the growing complexity of passive and interconnecting sound components, the decline in global commodity costs, and the most recent COVID-19 epidemic. But for the anticipated term, the growing need for networking and storage devices in data centers, demand for security cameras, robots in industrial applications, and sensor-based devices would create enormous potential for the Surface Mount Technology Equipment Market.

- For the lowest possible production cost, it is essential to mass-produce electrical circuit boards in a very mechanical way. Surface mount technology (SMT) offers the advantages of increased package densities, greater reliability, and lower cost for the passive components than the plated through-hole insertion procedure. The most frequently utilized process for low-cost, high-production consumer electronic assemblies is SMT, which is fueling market expansion.

- SMD capacitors and resistors make up the majority of passive surface mount components. As technology has made it possible to produce and use smaller components, there are now fewer standard sizes. Because the leading figures are substantially lower than most leaded resistors, caution must be taken when utilizing surface mount resistors to prevent power dissipation levels from being exceeded.

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- Surface-mount resistors and surface-mount capacitors are two of the most used components. These SMD resistors and capacitors are housed in tiny, small-format rectangular packages. Billions of small surface-mount capacitors are used in all mass-produced electronic devices. Surface mount capacitors often come in the form of tiny rectangular cuboids with dimensions created according to industry norms. Numerous technologies, including multilayer ceramic, tantalum, electrolytic, and some less popular types, may be utilized in SMD capacitors.

Asia Pacific is Expected to Witness Fastest Growth

- The market for surface mount technology is growing significantly in the Asia-Pacific region, mainly due to the presence of various PCB production facilities in the region. China is home to many PCB production facilities. AT&S's most significant production unit is located in Shanghai, focusing on multi-layer PCBs. This is because the company focuses on large volumes of mobile communications customers in China.
- Due to increasing urbanization, industrialization, more significant investment in innovative & efficient technologies, and rising per capita income, the Asia Pacific area is anticipated to increase throughout the forecast period, with India, China, and Japan contributing the majority of the growth.
- Additionally, the APAC region's consumer electronics market is growing significantly due to technological advancements and developments that give customers access to increasingly sophisticated features like fingerprint sensors in smartphones and smart televisions, among others. Smaller electrical components that take up less space have been developed in response to the growing need for downsized devices. This is only achievable if the device's physical components, such as the PCB, are compact and have smooth operation even when combining multiple features. Creating an electrical device is complex since numerous elements must be considered, especially with surface mount technology.
- Increasing smartphone adoption rates have made Asia-Pacific one of the largest mobile markets in the world. This is due to increasing population growth and urbanization. As per the GSM Association, more than 4 out of 5 connections will be smartphones by 2025. This trend is expected to increase the adoption of surface mount technology among consumer electronics in the region.
- The increasing wireless communication standards and the rising demand for 3G/4G networks are boosting the demand for SMT in the telecommunications sector. China is one of the world's fastest-growing economies, and its market for SMT is expected to grow primarily because of the vast number of SMT manufacturing companies. The growth of the SMT market is also driven by the development of electric vehicles in the automotive sector in the APAC region.
- Additionally, due to the semiconductor industry's cyclical return of growth and the expansion of equipment manufacturers operating in the region, the Asia-Pacific semiconductor manufacturing equipment market is anticipated to have strong growth. The development of the electronics and semiconductor industries, particularly in China, can be blamed for the regional market expansion. SMT process demand rose due to the established electronics manufacturing hubs in China, South Korea, and Taiwan.

Surface Mount Technology (SMT) Industry Overview

The Surface Mount Technology market comprises several global and regional players, such as Fuji Machine Manufacturing Co., Ltd., Yamaha Motor Co., Ltd., Panasonic Corporation, Mycronic AB, etc., who are vying for attention in a contested market space. The market is moderately fragmented and poses high barriers to entry for new players.

- July 2022 - GJD committed to an investment in a new top-of-the-range Hanwha Techwin SM482 Plus Surface Mount Technology (SMT) machine. The new machine will enable high-speed automation during the electronic assembly process and, additionally, drive efficiency and the bottom-line impact of GJD's carbon footprint.
- October 2022 - Keystone Electronics expanded its product portfolio of ultra-flat surface mount thread inserts with the launch of

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metric and inch-threaded versions. The surface mount inserts are now available in metric thread (M2.5, M3, M4) or inch thread (2-56, 4-40, 6-32). The special packaging and design makes it quick and easy to add tin-coated steel thread inserts to printed circuit boards.

Additional Benefits:

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

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