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3D IC Market Research Report- Global Forecast to 2030

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Description:

3D Integrated Circuit Market Overview

According to the MRFR, the 3D Integrated Circuit Market is expected to grow at a CAGR of 20.1%. It is estimated that the market may further reach up to USD 34.9 Billion during the forecast period 2022-2030. The development in the microelectronics and semiconductor industry is fuelling the trend for 3D Integrated Circuit Market. It helps to improve the performance and functionality. Along with that, It also helps to lessen the power consumption according to the requirement of electronic devices.

The 3D integrated circuits are used among devices such as tablets, smartphones, computers, etc. This helps to improve the battery life and save significant space. Every stack of the ICs is comprised of cores, sensors, analog RF circuits, etc. The temporary impacts such as the outbreak of COVID-19 also reduced the growth. However, in the upcoming years, it is anticipated that the 3D Integrated Circuit Market will revive its growth. Hence, the stakeholders and investors will gain huge profits simultaneously.

The Three-dimensional integrated circuit has a huge demand in the aerospace and military, memory, consumer electronics, etc. Also, the growing trend of 3D packaging for its features such as low cost, etc. is fuelling the 3D Integrated Circuit Market. The Asia-Pacific region is evaluated to dominate the market of Three-Dimensional Integrated Circuit (3D IC). However, North America accounts for the second-largest share.

COVID-19 Analysis

The outbreak of coronavirus had an adverse impact on the 3d integrated circuit market. The highly infectious disease caused huge havoc across the world. Millions of people died across the world in a short time due to the rapid spread of the virus. Several governments across the world put lockdown to control the spread. This step also affected the companies and manufacturing units heavily. They faced huge financial losses during this period. It also caused labour shortage and supply chain. But, with the rising awareness of the people and strengthening of the healthcare infrastructure, the 3D IC market will soon regain its growth.

Market Dynamics

• Market Drivers

The factors that are driving the 3D IC Market are the rising need for high-bandwidth memory (HBM) chips. It helps to enhance the performance of the networking devices by managing the memory and bandwidth. Hence, it is the best solution to fulfill the market demand by removing the unnecessary components. Also, the demand for enhanced connected devices to increase the storage space is fuelling the 3D IC Market growth.

• Restraints

One of the major restraints affecting the growth of 3d integrated circuit industry is the lack of skilled professionals. It will very difficult to introduce a new device and its uses to the professionals at a larger level. Also, the complex technical process may hinder 3D Integrated Circuit Market growth.

• Opportunities

The development of a modern electronic device for high-speed data transmission will be beneficial for growth. Also, the 3D integrated circuits have a smaller size that helps to improve the performance significantly. These devices are also appropriate for various sensor applications and the microelectronics industry.

• Challenges

However, despite of the several challenges like shortage of skilled professionals will slow the market growth. Simultaneously, the disruption in the supply chain results in a delay in the production of the products. Despite these challenges, the market will continue to grow at a gradual pace during the forecast period.

• Cumulative Analysis

According to Analysis by MRFR, the 3D Integrated Circuit Market is estimated to grow at a CAGR of 20.1%. Also, the market value will increase up to USD 34.9 Billion during the forecast period 2022-2030. The growing demand for electronic devices with high bandwidth, and increased storage space are the main drivers of the 3D IC market. Hence, the market will experience huge growth during the forecast period.

- **Value Chain Analysis**

As the need for Integrated Circuits is rising, the market will witness significant growth. Also, the enhancement of the microelectronics and semiconductor industry will simultaneously increase the market value. The capability of 3D ICs to improve the performance of integrated circuits against 2D ICs are higher. This factor also increases the value chain of the 3D IC market.

Market Segmentations

The segmentation of the 3D IC Market is segmented into application, component, technology, and products. On the basis of application, the 3D IC Market is segmented into defense and aerospace, medical, telecommunication and IT, consumer electronics, automotive, industrial, automotive, and others.

On the basis of the components, the 3D IC Market Size is further bifurcated into Through Glass Vias (YGVs), Through Silicon Sensors (TSVs), and others.

On the basis of technology, the 3d integrated circuit market is segmented into Type and integration, and packaging. The integration and packaging are sub-segmented into 3D Wafer-level packaging (WLP), 3D Heterogeneous Integration, 2.5 and 3D interposing, 3D system-in-package (SIP). Then, the type segment is again divided into Monolithic 3D ICs and 3D stacked ICs.

On the basis of products, the 3D IC market is further segmented into Sensors and MEMS, 3D Memory, Light Emitting Diodes, and CMOS image sensors (CIS).

Regional Analysis

On the basis of region, the 3D Integrated Circuit Market Size is segmented into Asia-Pacific, North America, Europe, and the Rest of the World. It is estimated that the Asia-Pacific region will hold the largest market share during the forecast period. There are various factors that are promoting the market extensively. One of the main factors is the growing demand for consumer electronics among the countries. Also, the rising awareness for technological developments and the use of smart devices is fuelling the market growth in this region. Especially countries such as China, India, South Korea, Malaysia, etc. are developing at a rapid speed.

After that, the North American region will hold the second-largest 3D Integrated Circuit Market Share. The easy availability of raw materials and developed infrastructure is one of the major reasons for the growth. Also, the growing demand for Integrated Circuits in countries like Canada, and the US are escalating the growth.

Competitive Landscape

There are various companies that focus on developing their business portfolio. For that, with different techniques such as collaboration, new ventures, acquisitions, new product launches, partnerships, mergers, etc. Below is the list of some notable key players of the Applications of 3D integrated circuits-

- United Microelectronics Corporation
- Tezzaron Semiconductor Conductor Corporation
- 3M Company Besang Inc.
- IBM Corporation
- Xilinx Inc.
- Monolithic 3D Inc.
- Intel Corporation
- Toshiba Corp. Amkor Technology
- Samsung Electronics Co. Ltd.

Recent Developments

Samsung Electronics in October 2018 which is a renowned key player announced the development of 3D-TSV technology with 12 layers. This new technology is helpful in stacking the 12 DRAM chips on 60,000 holes that have a similar thickness of 8 layer chips.

Report Overview

The overview of the 3D Integrated Circuit Market Report is as follows-

- Market Overview
- COVID-19 Analysis
- Dynamics of the Market
- Value Chain Analysis
- Market Segmentation
- Regional Analysis

- Competitive Analysis
- Recent Development

Report Score and Segmentation

- **Study Period-** 2022-2030
- **Base Year-**2021
- **Forecast Period-** 2022-2030
- **Historical Period-**2020

The score of the report is to provide information and highlight the Advantages of 3D integrated circuits. It also gives information about the challenges, restraints, and opportunities. It also provides certain information about the key players and their recent developments.

Segmentation

Components

- Through Glass Vias (TGVs)
- Through Silicon Vias (TSVs)
- Others

Application

- Aerospace and Industrial
- Telecommunication and IT
- Automotive
- Consumer Electronics
- Medical
- Industrial Others

Technology

- Technology Type
- 3D Stacked ICs
- Monolithic 3D ICs
- Integration and Packaging Type
- 5D and 3D Interposer
- 3D System in Package (3D Sip)
- 3D Heterogeneous Integration
- 3D Wafer Level Package (3D WLP)

Products

- 3D Memory
- Light Emitting Diodes (LEDs)
- CMOS Image Sensors
- Sensors and MEMs

Regions

- Europe
- North America
- Asia-Pacific
- The Middle East and Africa

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