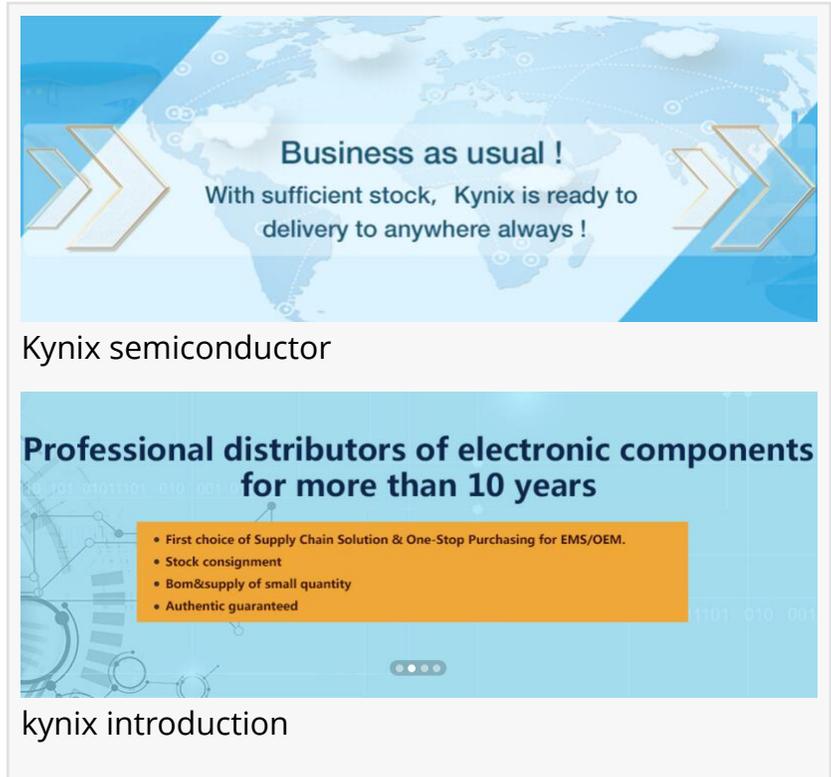


Kynix: Chip Shortages and Future Outlook

From the decline in demand to the shortage of stock, the keywords of the electronic industry are "price increase", "expansion" and "out of stock".

WASHINGTON, USA, May 12, 2022 /EINPresswire.com/ -- Since the epidemic swept the world in 2020, the entire chip industry has been on a roller coaster ride. From the sharp decline in demand in Q1 2020 to the gradual shortage of stock in Q3 2020, the key words of electronic industry in 2021 are "price increase", "expansion" and "out of stock". The industry boom has reached the extreme point for a while.



The advertisement is split into two horizontal sections. The top section features a world map with a blue and white color scheme. In the center, the text reads "Business as usual !" followed by "With sufficient stock, Kynix is ready to delivery to anywhere always !". Two large, stylized gold arrows point outwards from the center. Below this section is the text "Kynix semiconductor". The bottom section has a light blue background with a faint circuit board pattern. It features the headline "Professional distributors of electronic components for more than 10 years" in bold. Below the headline is an orange box containing a bulleted list: "• First choice of Supply Chain Solution & One-Stop Purchasing for EMS/OEM.", "• Stock consignment", "• Bom&supply of small quantity", and "• Authentic guaranteed". Below the orange box is the text "kynix introduction".

Recall that since 2020 Q3, the combination of multiple factors such as demand-side dynamic migration, new energy vehicles triggering incremental opportunities, and manufacturers' active and passive over-provisioning has led to an extreme shortage of wafer capacity, overlaid with the overall cautiousness of capacity expansion of each manufacturer in 2016-2019, the end result is a high boom of the whole industry in 2020-2021. Design companies, foundry companies, packaging and testing segments, IC substrates, and auxiliary materials all raised their prices, pushing up the overall semiconductor industry. The performance and share prices of related companies have also come out of an increased trend.

[Kynix](#) semiconductor, a distributor of electronic components with 10 years of experience, will continue to monitor the electronics market and provide customers with the latest offers. IGBT-related chips are expected to remain in short supply through 2022, driven by demand for new energy vehicles. Kynix has a large inventory of [IGBTs](#), such as ON Semiconductor's popular IGBT chips: [FGA60N65SMD](#), [FGH60N60SMD](#), etc.

Under the extreme shortage of chips, the performance of related chain companies has continued to reach new highs, becoming an important fulcrum for the overall industry boom. The global distribution of foundry companies (revenue dimension) is 63.5% in Taiwan, with TSMC contributing the majority of the total, and VIS and PSMC also performing.

South Korea's foundry capacity is mainly provided by Samsung, while Eastern Hi-Tech also has a small amount of capacity.

Mainland China's foundry capacity mainly comes from SMIC and Hua Hong and is actively expanding its capacity, while North American companies mainly come from GF and Intel (which are gradually getting involved in the foundry field).

From the overall distribution, the trend of Taiwan, China and Korea is more obvious. Different regions have their own representative enterprises and process characteristics, forming a different combination of capabilities. But no matter how to divide, TSMC's position as the absolute leader in the foundry field is unshakable, and there is no sign of being challenged in the coming years.

(2) Chip companies to deal with the lack of chip initiatives

At the same time, the industry boom has also given rise to the expansion plans of all wafer manufacturing companies, whether it is IDM (Integrated Device Manufacture, integrating chip design, manufacturing, packaging, testing and sales and other aspects of the industrial chain in one) or Foundry. TSMC, for example, has a remarkable growth rate of \$18.1 billion, \$30 billion, and \$43 billion in capital expenditures from 2020-2022.

In addition to TSMC, other foundries and IDM companies have similar capex expansion plans, a significant portion of which will fall on capacity enhancements. The aggressive capacity expansion plans initiated by these companies have yielded some results, and the corresponding data has some lag considering the speed of capacity release. However, due to the judgment of future uncertainty, the overall 12-inch capacity expansion on the more aggressive, 8-inch relatively less investment.

SEMI data show that global semiconductor manufacturers will start building 19 new high-capacity fabs by the end of 2021, and in 2022 to start construction of 10 more, including communications, computing, healthcare, online services and automotive areas. China and Taiwan will lead the way in new fab construction, with eight each, followed by the Americas with six, Europe/Middle East with three, and Japan and South Korea with two each.

Among them, the production of 12-inch (300 mm) wafer fabs accounted for 15, another seven fabs will begin construction, the remaining seven planned to be built in two years will be 4-inch (100 mm), 6-inch (150 mm), and 8-inch (200 mm) wafer fabs. These 29 fabs can produce up to 2.6

million wafers per month (8-inch conversion).

Of the 29 fabs that will begin construction in 2021 and 2022, 15 are foundries with a monthly capacity of 30,000 to 220,000 wafers (8-inch equivalent). The memory division will begin the construction of four fabs within two years. These facilities will have a higher capacity of 100,000 to 400,000 wafers per month.

Many manufacturers will not begin to install equipment until 2023, because it takes up to two years after groundbreaking to reach this stage, although some manufacturers may begin to install equipment as early as the first half of next year. The initial forecast is for 10 high-capacity fabs to start construction in 2022, but the number could continue to climb as chipmakers announce new facilities to build.

(3) Future outlook for the chip shortage situation

Along with the capacity expansion landing, the lack of chip market that started in 2020 Q3 will ease from 2022, from a global lack of chip to a shortage of some scenarios. It is believed that along with the industry cycle up brought about by the expansion of production as well as demand reconstruction, the chip shortage situation will have significant relief by 2022 H4.

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