

RESEARCH BULLETIN

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Five Semiconductor Companies Hold 53% of Global Wafer Capacity *Leaders in memory IC and foundry production maintain strongest capacity presence.*

IC Insights recently released its new *Global Wafer Capacity 2020-2024* report that provides in-depth detail, analyses, and forecasts for IC industry capacity by wafer size, process geometry, region, and product type through 2024.

Included in the report is a ranking of the 25 largest wafer capacity leaders in terms of monthly installed capacity in 200mm-equivalents as of December 2019. The world's top-five wafer capacity leaders each had capacity of more than 1,000,000 wafer starts per month (Figure 1). Combined capacity of the top five companies represented 53% of total global wafer capacity at the end of 2019. In contrast, the top five capacity leaders in 2009 held 36% of worldwide capacity. Capacity at other semiconductor leaders, including Intel (817K wafers/month), UMC (753K wafers/month), GlobalFoundries, Texas Instruments, and STMicro, fell off rapidly from the top five.

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Worldwide Wafer Capacity Leaders

(Monthly Installed Capacity in Dec 2019, 200mm-equivalents)

2019 Rank	2018 Rank	Company	Headquarters Region	Dec-2018 Capacity (K w/m)	Dec-2019 Capacity (K w/m)	Yr/Yr Change	Share of Worldwide Total	Inclusion or Exclusion of Capacity Shares from JV Fabs
1	1	Samsung	South Korea	2,934	2,935	0%	15.0%	
2	2	TSMC	Taiwan	2,439	2,505	3%	12.8%	shares of SSMC & VIS
3	3	Micron	North America	1,685	1,841	9%	9.4%	share of IM Flash in '18
4	4	SK Hynix	South Korea	1,630	1,743	7%	8.9%	
5	5	Kioxia/WD	Japan	1,361	1,406	3%	7.2%	

Source: Companies, IC Insights' *Global Wafer Capacity 2020-2024 Report*

Figure 1

- As of December 2019, Samsung had the most installed wafer capacity with 2.9 million 200mm-equivalent wafers per month. That represented 15.0% of the world's total capacity and about

two-thirds of it was used for the fabrication of DRAM and NAND flash memory devices. Major construction projects underway include large new fabs at its sites in Hwaseong and Pyeongtaek, Korea, and in Xi'an, China.

- Second in line was TSMC, the largest pure-play foundry in the world, with about 2.5 million wafers per month capacity, or 12.8% of total worldwide capacity. The company has been adding a new facility at its Fab 15 complex (the Phase 9/Phase 10 building) in Taichung, Taiwan, and building a new fab (Fab 18) near its Fab 14 complex in Tainan, Taiwan.
- Micron had the third largest amount of capacity at the end of 2019 with a little more than 1.8 million wafers, or 9.4% of worldwide capacity. Micron's growth in capacity for 2019 was boosted by the opening of a new 300mm wafer fab at its site in Singapore. The company also acquired Intel's share of their IM Flash joint-venture fab in Lehi, Utah. In 2020, Micron plans to open a second fab in Manassas, Virginia.
- The fourth largest capacity holder at the end of 2019 was SK Hynix with a monthly wafer capacity of nearly 1.8 million wafers (8.9% of total worldwide capacity). More than 80% of it was used to make DRAM and NAND flash chips. In 2019, the company completed construction on its new M15 wafer fab in Cheongju, Korea, and a new fab (C2F) at its site in Wuxi, China. Its next big fab project is Fab M16 at its site in Icheon, Korea.
- Rounding out the top 5 companies was memory IC supplier Kioxia (formerly Toshiba Memory) with 1.4 million wafers/month (7.2% of total worldwide capacity), including a substantial amount of NAND flash memory capacity for its fab investment and technology development partner Western Digital. The capacity for Toshiba Electronic Devices is not included in the Kioxia numbers.
- The industry's five biggest pure-play foundries—TSMC, GlobalFoundries, UMC, SMIC, and Powerchip (including Nexchip)—are each ranked among the top 12 capacity leaders. In total, these five foundries had a combined capacity of about 4.8 million wafers per month as of December 2019, representing about 24% of the total fab capacity in the world.

Report Details: *Global Wafer Capacity 2020-2024*

IC Insights' *Global Wafer Capacity 2020-2024—Detailed Analysis and Forecast of the IC Industry's Wafer Fab Capacity* report assesses the IC industry's capacity by wafer size, minimum process geometry, technology type, geographic region, and device type through 2024. The report includes detailed profiles of

the companies with the greatest fab capacity and gives comprehensive specifications on existing wafer fab facilities. *Global Wafer Capacity 2020-2024* is priced at \$4,890 for an individual user license. A multi-user worldwide corporate license is available for \$7,590.

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IC Insights, Inc., based in Scottsdale, Arizona USA, is dedicated to providing high-quality, cost-effective market research for the semiconductor industry. Founded in 1997, IC Insights offers coverage of global economic trends, the semiconductor market forecast, capital spending and fab capacity trends, product market details, and technology trends, as well as complete IC company profiles and evaluations of end-use applications driving demand for ICs.

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