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Process Geometries <80nm Dominate Global Wafer Fab Capacity

South Korea, Taiwan, and the Americas feature highest concentration of leading-edge capacity

More than one-fourth (29%) of all wafer capacity is for devices having geometries or feature sizes smaller than 80nm according to IC Insights' recently published *Global Wafer Capacity Analysis and Forecast* (Figure 1). Such devices include high-density DRAM and flash memory devices that are based on 70nm, 60nm, 50nm, and 40nm technologies and high-performance MPU/MCU/DSP devices and advanced ASIC/ASSP/FPGA devices based on 65nm and 45nm technologies.

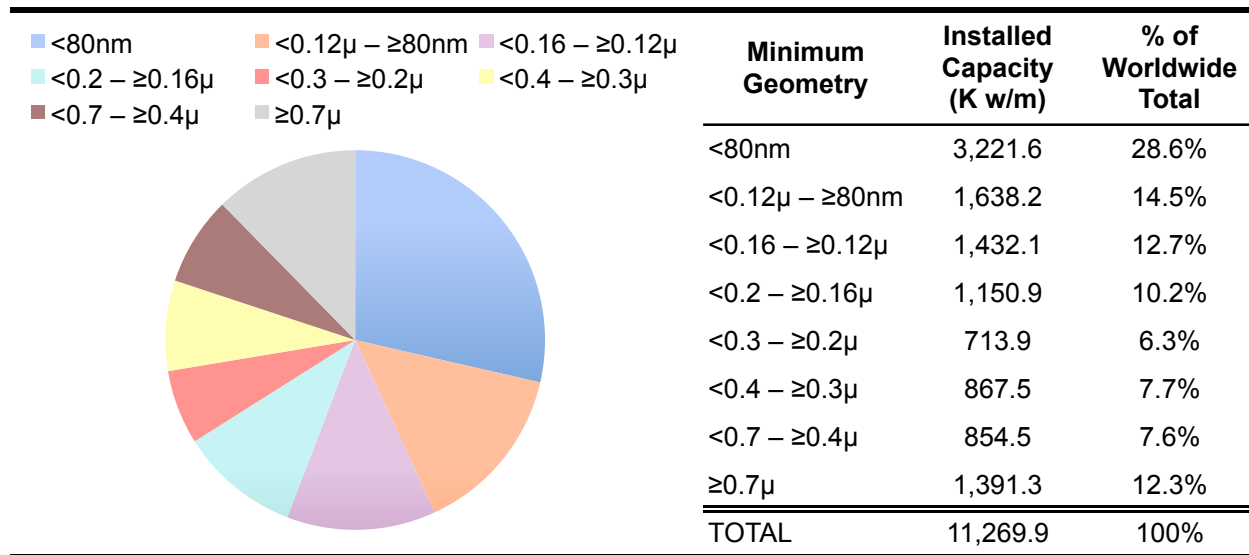
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The report splits process geometries into eight categories. The findings show that 15% of global wafer capacity is based on $<0.12\mu - \geq 80\text{nm}$ processes and 13% is based on $<0.16\mu - \geq 0.12\mu$ technologies. The least common technologies, at least in terms of the share of total installed capacity, are between the geometries of 0.2μ and 0.7μ , essentially the 0.25μ , 0.35μ , 0.5μ and 0.65μ generations. It is also interesting to see that the $>0.7\mu$ category maintains a relatively large share of total capacity, even though it has been more than a decade-and-a half since 0.8μ process technology was considered leading-edge. The main reason is huge quantities of commodity-type devices, such as standard analog and general-purpose logic, are manufactured with well-established process technologies having larger than 0.7μ feature sizes. Additionally, high-voltage IC products require large-geometries process technologies.

Data from the report also show that South Korea, Taiwan, and the Americas are more leading-edge focused than other regions or countries, and that Europe has the highest concentration of "old" technologies with feature sizes greater than 0.4μ . Given its emphasis on high-density DRAM and flash memory products, South Korea has the largest share of wafer capacity dedicated to leading-edge processes (45%). The Americas region is next in line with 37% of its capacity using the most advanced processes, followed by Taiwan with 32%.

Worldwide Capacity by Minimum Geometry as of Jan-2008 (Installed Monthly Capacity in 200mm-Equiv. Wafers x1000)



Source: IC Insights

Figure 1

Report Details

IC Insights' *Global Wafer Capacity Analysis and Forecast* provides a detailed breakdown of the IC industry's wafer fab capacity as it stood at the beginning of 2008 and projects industry capacity each year through 2012. Data was compiled and summarized using IC Insights' proprietary database that lists just under 440 IC fabrication facilities representing 110 companies. Information is sorted and listed by wafer size, minimum geometry, technology type, geographic region/country, and by IC device type. The *2008 Global Wafer Capacity Analysis and Forecast* includes 52 charts and graphs and as well as a detailed listing of wafer fab facilities from around the world. The study sells for \$3,985 (\$6,780 corporate license).

About IC Insights

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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