

To search page

2001

300mm wafer process start

~ Discrete Semiconductor/Others ~

After 0.75-inch (approx. 20 mm) diameter Si wafers became available around 1960, the production of integrated circuits with increased density according to Moore's Law required larger diameter wafers. ULSI production with 300 mm Si wafers started in 2001. (Figure 1) International standardization activities for 300 mm Si wafers and semiconductor manufacturing equipment handling 300 mm Si wafers was promoted since the late 1990s. By the end of the 1990s, a supply chain for semiconductor manufacturing equipment and materials for 300 mm wafers had been established. Since then, 90nm or shorter node ULSIs were produced almost exclusively with 300 mm wafers.

Whereas, 8-inch (200mm) wafers continued to be used for the production of power semiconductors, MEMS, sensors, and VLSIs fabricated using 110 nm or longer process technology. Traditionally, the transition was a gradual change from previous-generation to next-generation larger-diameter wafers. In the case of transition to larger diameter 300mm wafers, the number of semiconductor production lines using 8-inch wafers continued to increase in parallel (as of 2020).

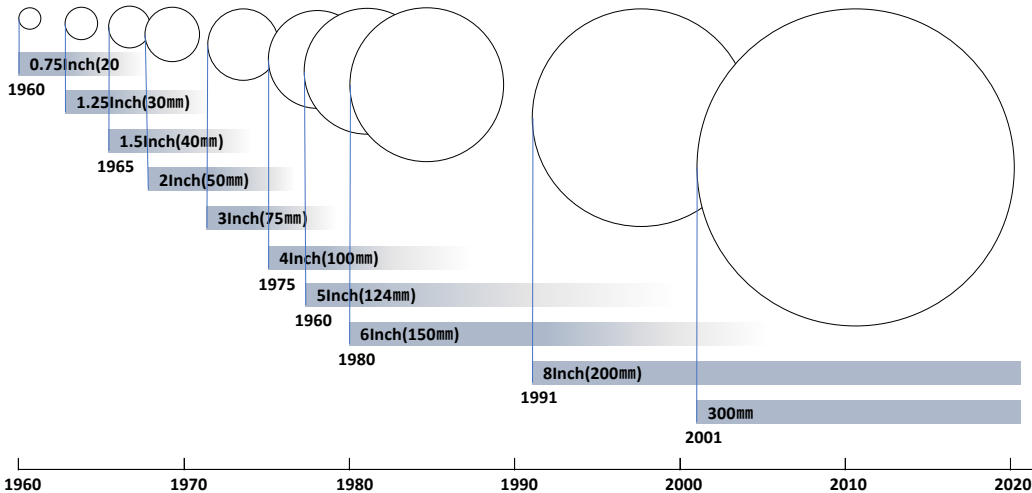


Figure 1 Changes in Silicon Wafer Size (Substrate Diameter)