

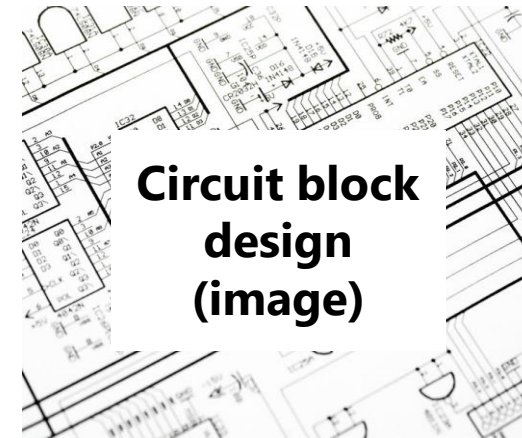
# Design and development (Toshiba discrete products): IC circuit design, layout design, test, and mass-production ramp up / assembly process

## Software-based circuit and layout design

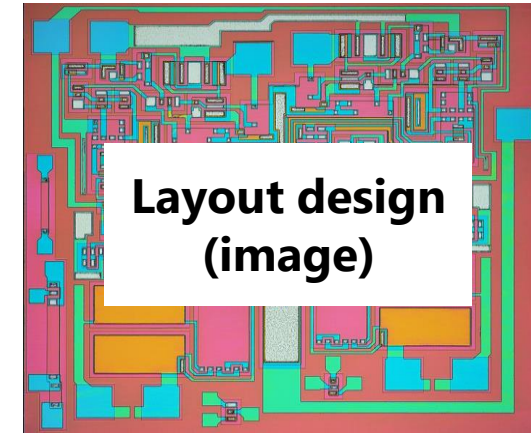
Mask data for IC wafer manufacturing is created by the following process: conceptual design (functional design) with product specifications → operating simulation → layout design → test

Mass-production ramp up and production engineering for assembly process

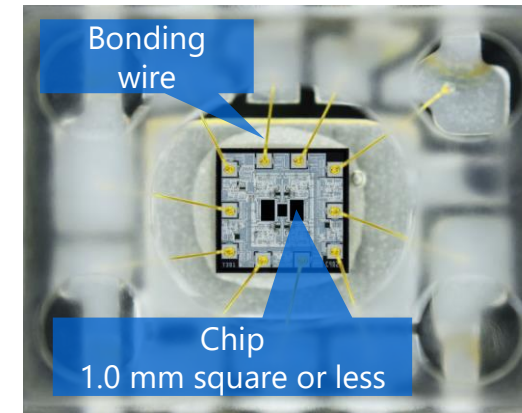
After development, the semiconductor wafer is diced into pellets, which are sealed in a mold package and become products.



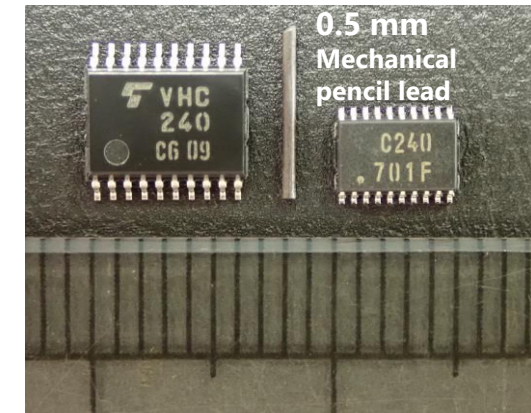
Circuit block design (image)



Layout design (image)



Inside of IC (image)



Appearance and size of ICs (comparison)