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# 2002

## Usage of first SiP product in a digital camera

### ~ Packaging ~

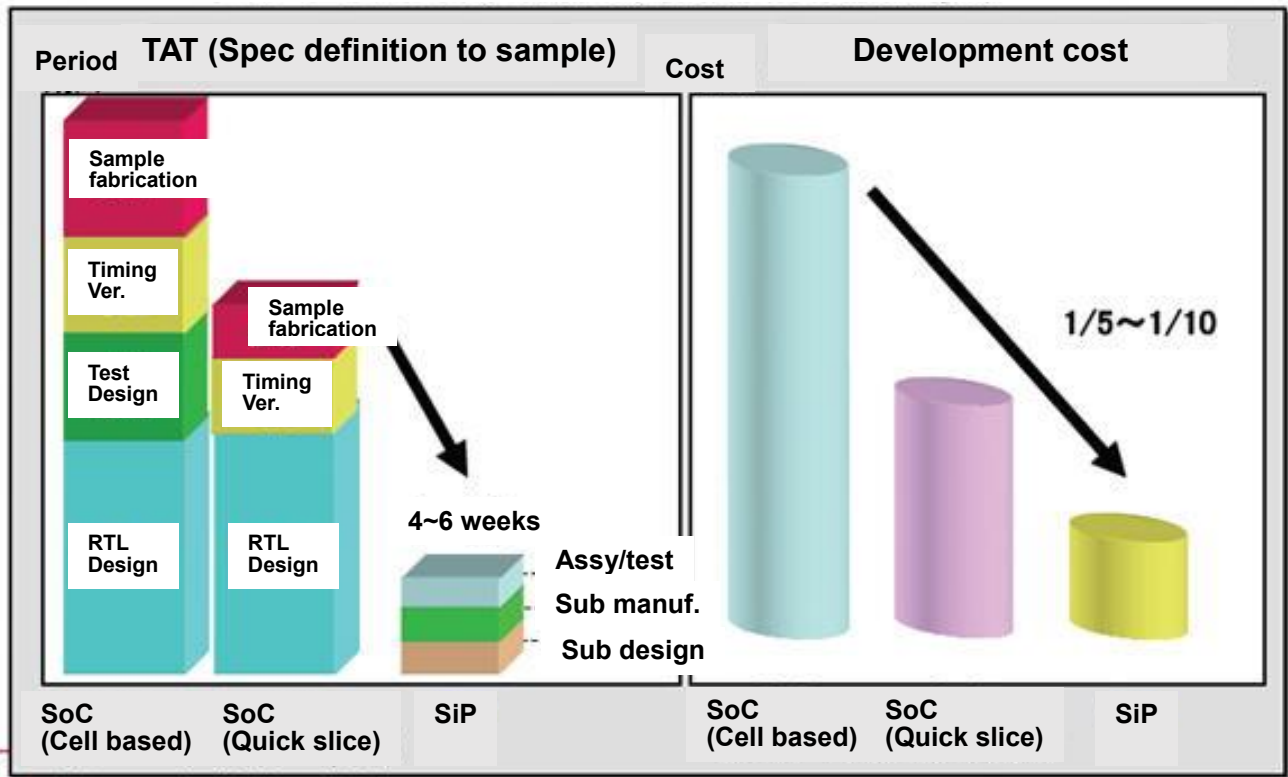
In 2002, a system LSI with SiP (System in Package) structure was developed by Renesas Technology, and it was applied to a digital camera. It installed MPU and memory in a stacked structure.

It has been proven that SiP has the advantages of shorter development time, lower development cost and less noise at simultaneous switching compared to system LSIs by process miniaturization.

A new technology was adopted so that Au studs were bonded to LSI chips and flip-chip connected to a printed circuit substrate which was coated with Su-Ag solder in Super Juffit method.

With the advent of SiP technology, it became possible to realize multi-functions of mobile phones such as internet, camera, one-segment TV, wallet function, etc. in a small space.

### Development Period and Cost of SiP and SoC



# Technology Development of Multi-stack SiP

## ~SiP mounting high-density memory and microcontroller~

