

1988

One-mm-thickness QFPs enter mass production

~ Packaging ~

In 1988, Hitachi announced in Nikkei Microdevice magazine that the product's reliability equivalent to conventional thick QFP could be secured even with a mold thickness of 1.0mm thick. By providing cross-shaped slit-like holes in the die pad portion on which the LSI chip was mounted, the resin breakdown phenomenon in the soldering process to the PCB caused by the difference in coefficient of linear expansion between the epoxy resin and the 42% Fe-Ni alloy could be mitigated, and it was shown that the stress calculation and the experimental results matched with each other.

A 1.0 mm thick QFP was put to practical use for memory cards such as 4M mask ROM. After that, the packaging technology of 1.0 mm thickness was applied and expanded to TSOP of DRAM and SRAM.

The figure on the left shows a cross-sectional picture of 1.0 mm thick QFP, and on the right the lead frame with cross-shaped slit, and the chart at the bottom shows a simulation model of the resin crack test in reflow after moisture absorption.



