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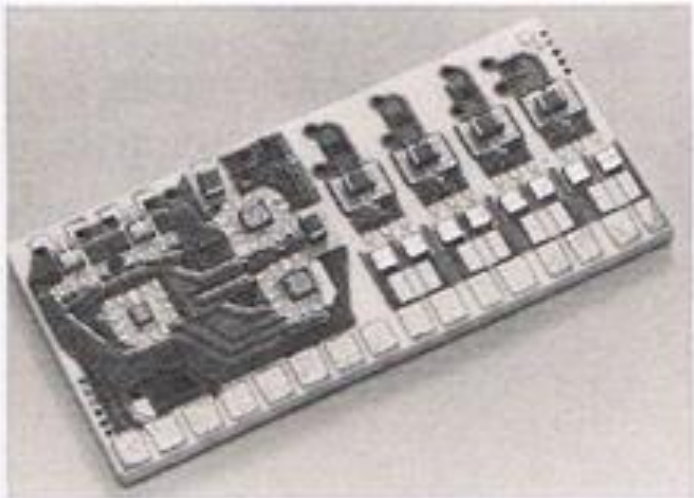
# 1968

## Full-scale development of hybrid ICs

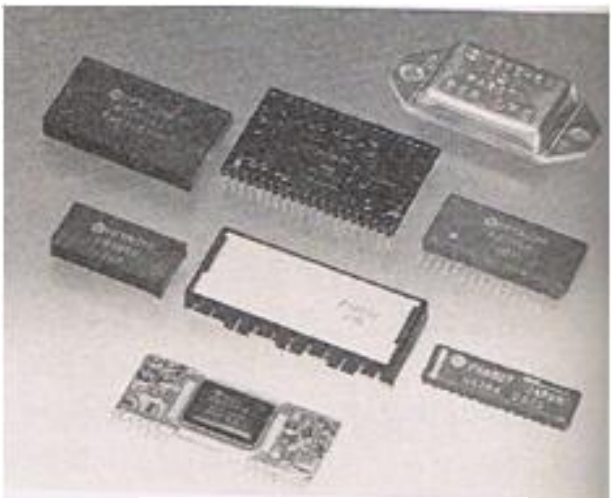
~ Packaging ~

In 1968 Hitachi, after the development of micromodule, started a full-scale development of thick film and thin film hybrid ICs. In the thick film hybrid IC, a circuit pattern, resistors and capacitors were formed by a thick film printing method on an alumina ceramic substrate, on which a number of transistors were die-attached and wire-bonded. In a thin-film hybrid IC, a thin-film printing is used instead of thick film. The thick film products were applied to automotive regulators, acoustic preamplifier circuits, etc., and the thin film products were applied to communication systems and the like.

As the development of semiconductor devices progressed thereafter, the active elements shifted from transistors to ICs, and the devices for motor drive applications for NC machines and floppy drives etc. were developed.



Internal structure of hybrid IC



Hitachi hybrid IC family