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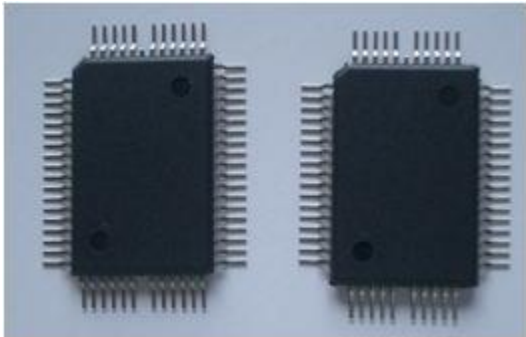
1977

Birth of world's first QFP

~ Packaging ~

QFP (Quad Flat Package) was born at Musashi Works of Hitach. It was called FPP (Flat Plastic Package) around 1977 when it was first developed. The transfer mold package outline was 14mm in width, 20mm in length, and 2.0mm in thickness, with the lead length of 1.7mm. The soldering to the printed circuit board was still done manually using soldering iron. By making the common size for molding die and the outer frame of the lead, and by reducing the lead pitch from 0.8mm to 0.65mm and further to 0.5mm, multi pin package development was done.

This package outline was initially used for the calculator's MPU and the LCD display driver IC, and then expanded to multi-terminal LSI devices such as 4-bit microcontrollers, 8-bit microcontrollers, ASIC, and gate arrays.



First designed FPP1

60-pin

54-pin



Proliferation of multi-pins

Pin count	54	60	64	80	100
Pitch(mm)	0.8	0.8	0.8	0.65	0.50