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# 1970

## Development of pin-insertion laminated ceramic packages

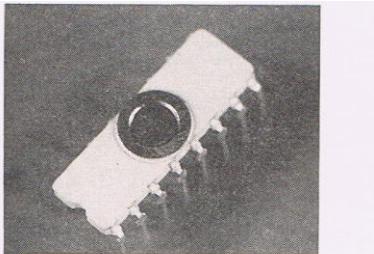
### ~ Packaging ~

Pin insertion type DILC (Dual In Line Ceramic) 16-pin with pin pitch of 100 mil (2.54 mm) and row pitch of 300 mil was developed and mass-produced at Musashi Works of Hitachi in 1967, applying the multilayered ceramic technology introduced from RCA.

The DILC 16-pin was adopted for the ICs for electronic exchangers which began to replace the crossbar exchangers.

In the next year, around 1970, 24-pin/28-pin DILC was developed and applied to calculator ICs, MSIs etc. The picture at the bottom is a 2-chip in 1-package device that mounts 2 LSI chips in one package, which was mounted on PCB as the pin insertion type by 90-degrees bending of frame after assembly.

16-pin DILC (Completed package)      24-pin DILC (Before die attach)



積層セラミックパッケージ (DILC)  
図2-14-7 RCA社から技術導入したパッケージ例



28-pin DILC (2-die package, after die attach and before cap seal)

