

New Packaging Technology by VPES(Vacuum Printing Encapsulation Systems) of CSP, Wafer Level Packaging, SIP and LED

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ABSTRACT

With the development of portable equipment such as LCD, Cellular Phone, Digital camera, Car navigation, EL, and Notebook computers, the recent trend of LSI packaging has been a rapid movement toward increased thinner, high density, high speed, light weight and smaller.

The conventional transfer molding technique has difficulty in meeting these requirement. It also has economic disadvantage such as high die cost, resin loss in the runners and long processing time.

We developed new packaging technology, it is VPES. VPES solved such as problems than transfer molding systems. VPES uses printing stencil mask instead of metal die and it has some merits as following, tooling price is cheaper. Model changing is very easy. And delivery time is short. VPES is very fit to thinner and high density, light weight, and small packaging. Further, we developed some unique encapsulation epoxy resins for high reliability packaging such as CSP, SIP, Wafer level packaging and Flip-chip. VPES technology has very good effect to white LED applications. and fill conductive paste to via hole of wafer and multiplayer PCB and FCP. These technology are efficiency to future semiconductor's packaging.

PERSONAL HISTORY

- 1969/03 Received The M.S. Degree in Chemistry from Kansai University
- 1969/04 Assistant Professor in Kansai University
- 1971/10 Employed SANYU REC CO.,LTD. Research of Epoxy Resin for Electronic Industry.
Especially Packaging Technology of BGA, CSP, COB, TAB, LCD, LED, SIP, and Flip-chip
- 1995/04 Senior Member of IEEE
Member of IEEE, IMAPS, The Japan Society of Polymer Science

VPES : Vacuum Printing Encapsulation Systems

<Process>

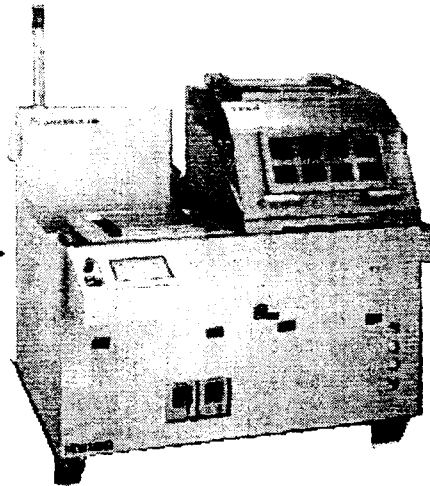
1. Printing in vacuum chamber

*Eliminates need to de-void

2. Curing

<Applications: thin flat packages>

- BGA ■ WLP ■ Flip Chip
- CSP ■ LED ■ Smart card
- MCM ■ Passive electronic parts



Process Comparison of & VPES

