3-D Moulded Interconnect

Art of Technology AG
Agenda

Why 3D-Moulded Interconnect Devices

Advantages/To be aware of

Techniques
Why 3D-MID?

Integration of electrical and mechanical functions

- Printed circuit boards
- Enclosure
- Plug-in connectors and switches
- Cables
Advantages

Design freedom
Integration of mechanical and electronic functions
Miniaturization
Reduced seize and weight

Rationalization
Reduced number of parts
Shorter process chains
Reduced material consumption
Higher reliability

Environmental compability
Reduced variety of Materials
Recycling of basic materials
Non critical disposal
To be aware of:

Not suitable for assemblies with:

- few electromechanical components
- large printed circuitboards and more than two layers

Full 3D production/assembly requires 6 axis control
Techniques

Two step moulding

The shown process uses plating onto the catalytic mould material

Another option is to mould a conductive material with non conductive material
Techniques (2)

Photo-lithography (Laser Subtractive Structuring)

- Moulding
- Plating
- Apply Photoresist
- Develop photoresist and etch

Pictures: source ivf
**Techniques (3)**

Laser direct Structuring

moulding

Laser activation

Galvanisation (activated areas)
Techniques (4)

Hot embossing

Stamp Overmoulding

Stamp sheet metal
Overmould
Film Over Moulding

This technique is based on flex circuits

Film cutting and structuring

Film shaping

Overmould film
Contact

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Thank you for your attention!