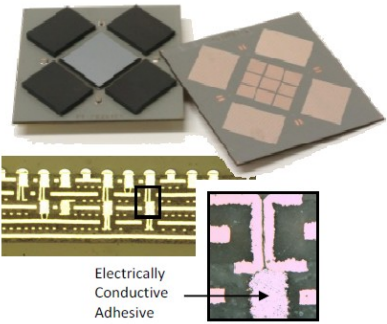


# Z-Interconnect Technology

## i3 Electronics:

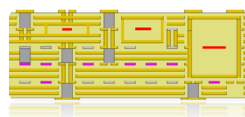
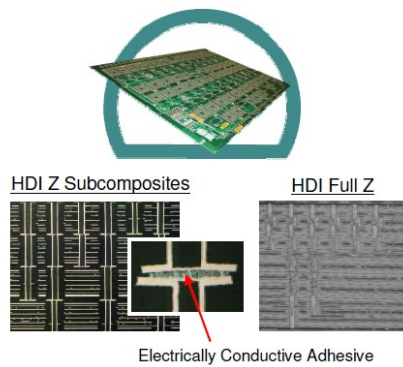
Z-Axis interconnection is a means of routing circuit traces vertically, within and through the package. i3's Z-Interconnect technology is used to fabricate electronic packaging components with very high interconnect density and enhanced electrical performance while maintaining reasonable cost. The structure employs an electrically conductive adhesive to interconnect thin cores (subcomposites). The cores are processed in parallel, aligned, and laminated to form a composite. The net effect is a composite laminate having vertical interconnections with small diameter holes that can terminate arbitrarily at any layer within the cross section of the package.



Z-interconnect enables semiconductor packaging to keep pace with the needs of the semiconductor marketplace.

Z-interconnect allows for high performance printed wiring boards with the highest layer count at the lowest cost.

Steadily increasing interest in rigid-flex structures stems from its unique promise to enable new applications for military and high-end electronics.



## FEATURES & BENEFITS

Z-interconnect based structures offer many advantages over the more conventional structures, for example,

- Increases wiring density.
- Best signal integrity.
- Reduces signal attenuation at high frequency.
- Shorter fabrication time.
- Higher yield.
- Fewer wiring layers.
- Lower cost.
- High performance materials.
- Mixed dielectrics.
- i3 patented and/or commercially available dielectrics and electrically conductive adhesives.

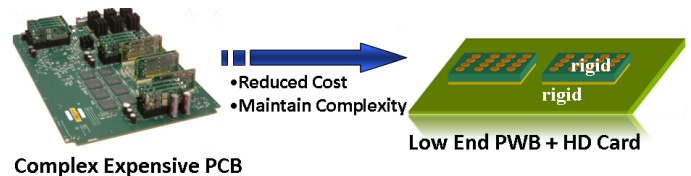
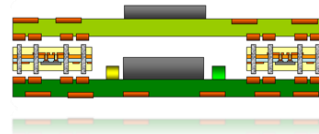
### Semiconductor Packaging Design Rules :

LW = 25  $\mu$ m , space = 25  $\mu$ m.  
 Laser drill = 40  $\mu$ m (minimum), Pad = drill+ 35  $\mu$ m  
 Pitch  $\geq$  180  $\mu$ m (preferred), 150  $\mu$ m (minimum)

### Printed Wiring Board Design Rules :

LW = 50 $\mu$ m (minimum), space = 75  $\mu$ m (minimum)  
 Mechanical Drill = 100 $\mu$ m, Laser Drill=50 $\mu$ m  
 Pad = Drill+150  $\mu$ m, Module / Via Pitch = 0.4mm

Z-interconnect is used for 3-D stacked packaging in i3's Package-Interposer-Package (PIP) structures.



Simplification of complex printed wiring board structures for cost reduction is possible.

