TIPS FOR MULTILAYER DESIGN

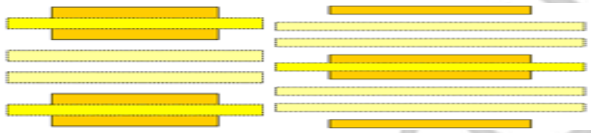
The multilayer printed circuit boards are composed of inner layers and outer layers and help to get more complex structures with high density interconnection. The multilayers are built using the following materials:

- Copper foil
- Prepreg
- Intern Core (fine material for inner layer composed of prepreg + 2 copper foil)

The Prepregs and Cores can be regulars, High Tg and Halogen Free.

We can observe four basic design rules for multilayer construction:

1. Use Copper Foil for outer layers and Cores for inner layers.



Wrong Correct

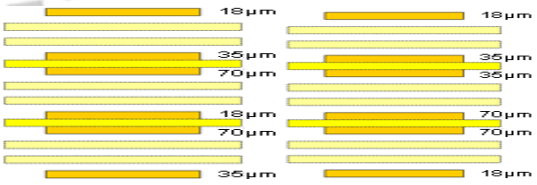
Advantages: Improvement in dimensional stability and cost reduction.

2. Use at least 2 prepregs (as well recommended by IPC). Exceptionally can be used 3 prepregs for high thickness or 1 prepreg for thinner thickness.

Wrong Correct

Advantages: Improvement in dimensional stability, reduced costs and reduced tolerance in the final thickness.

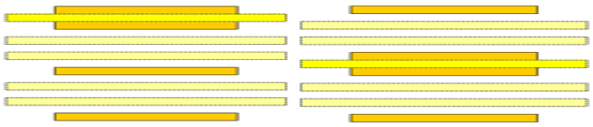
3. Use the same thickness of copper in the Cores.



Wrong Correct

Advantages: Reduction of Bow & Twist, symmetric design and reduction of under-etching.

4. Make a symmetrical design, ensuring uniform distribution of the three components of the multilayer (prepreg, core and copper foil).



Wrong Correct

Advantages: Reduction of Bow & Twist, cost reductions and improvements in the production process.