



An Introduction to Electronics Systems Packaging

Video Course -2012

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### Quiz for Module 6

#### **Printed Wiring Board Technologies: Board-level packaging aspects**

#### Video Sequence 23-31

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1. What do you mean by mask or photo tool?
2. In what format are CAD outputs generated?
3. List out four salient features of a photoplotter.
4. What are the thicknesses of a photofilm normally available? Why is thickness important?
5. Why should defects be a concern when photo tools or masks are made?
6. What are 'diaz' films?
7. What are the key process steps in the manufacture of a single-sided board?
8. What are the key process steps in the manufacture of a double-sided board?
9. Explain additive and subtractive process for PCB fabrication.
10. What is meant by a microvia? List the different types of microvias that are possible to create.
11. Define aspect ratio of a board. What numbers (or range) of aspect ratio are feasible to manufacture.
12. What are the thicknesses of copper in copper clad laminates normally available in the market?
13. Name the three components of a substrate material for a PCB. What are the functions of each of the components named?
14. Define glass transition temperature. Why is it important for a designer to know about T<sub>g</sub>?
15. What is meant by the term FR-4? What are the qualities of such a substrate?
16. What are the laminate thicknesses normally available in the market today?

17. Define CTE of a substrate.
  18. What are the key advantages of a dry film over a wet film photoresist?
  19. What are the methods to apply a wet film on a substrate?
  20. Outline the UV imaging and developing process for a dry-film photoresist based process.
  21. Define etching. Name the few etchants used to etch copper in a PCB.
  22. What are the factors influencing an etching process?
  23. Explain etch factor?
  24. How do you avoid etching defects in a finished PCB? What precautions are to be taken?
  25. Itemize the steps for the manufacture of a double-sided PTH process with focus on the through-hole plating steps.
  26. Define desmear and etchback.
  27. Define electroless copper plating process. What are the starting materials for an electroless copper plating process?
  28. Distinguish between panel and pattern plating processes.
  29. What is a solder mask? Do we need this at all?
  30. What is legend printing? Why is it required at all?
  31. What is the need for microsectioning a PCB area?
  32. How do you test bare PCBs? How do you test finished (assembled) PCBs?
  33. What are the 'surface finishes' usually given for a PCB?
  34. Outline the two options for fabricating a multilayer PCB.
  35. What are the benefits of laser drilling over photovia technology?
  36. What is YAG laser? List one major advantage of YAG over CO<sub>2</sub> laser?
  37. Briefly explain SBU technology.
  38. Briefly explain ALIVH technology.
  39. As a designer, when would you use flex substrate over rigid substrate for your product?
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