Thin Is In – The Challenge and Solution of Picking Thinner Die

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Outline:

1) Introduction
   a) Outline
   b) What is considered thin?
      i) Dimensions
      ii) Materials (Si, GaAs, GaN, InP, etc.)
      iii) Role and examples of thin die in military electronics
   c) Challenges to picking thin die from wafer
      i) Low Yield
      ii) Low Speed
2) Considerations for a successful thin die handling process
   a) Pre-processing
      i) Dicing Tape
      ii) Singulation
   b) Tooling Design
      i) Pick-up Tool
      ii) Ejector
   c) Process Control
      i) Speed
      ii) Alignments
      iii) Force Minimization (flexure based pick-head)
      iv) Role of Vacuum
3) Case Study – Comparison of pick process for 10 mm of varying thickness (0.1 mm, 0.3 mm, 0.8 mm)
   a) Die Strength Analysis
   b) Tooling Design
   c) Process Control
   d) Results
4) Future Discussion
   a) Industry Direction
   b) Limitations of Existing Approaches
   c) Research and Development Areas
5) Conclusion
6) Q&A