

Data Sheet

Flip Chip Bumping & Assembly

Advanced Microelectronic Packaging

Complete Turn-Key Production

Substrates:
 Organic, ceramic, HiTCE, flex, silicon, et al
 All die sizes & configurations
 Substrate design & fabrication, or
 Assembly of customer-supplied substrates
 High performance substrates available
 Materials selection & evaluation
 Low & medium volume production
 Engineering prototypes in 24 hours
 Reliability testing
 Inventory management
 ITAR Compliance available

Wafer / Die Bumping

UBM: Sputter, evaporated, electroless Ni
 Solder: Pb-Free (RoHS), eutectic, high Pb
 Plated, evaporated, screen print, jetting
 Gold Stud Bumps

Assembly

Solder reflow
 Conductive or anisotropic adhesive
 (Gold Stud bumps processes)
 Standard & "No Flow" Underfills available
 Dam & encapsulation or lid seal

Substrate Ball Attach

Pb-Free (RoHS), eutectic
 All ball sizes

Marking

Custom marking
 Serialization available

Wafer Dicing

Up to 300mm wafers
 Die and wafer tracing available
 Wafer background available

When you're ready for Flip Chip, **Aspen Technologies** can provide you with successful implementation & rapid time to market. Aspen can assist in choosing the perfect bump technology and materials to meet your requirements, execute the substrate design, produce prototypes, manage the qualification, and manufacture your devices in its Colorado facilities (or at an off-shore partner if in sufficient volume). Flip Chip has entered the advanced packaging mainstream, and devices like microprocessors, DSPs, driver chips, smart cards, and even MEMS are taking advantage of its strengths:

- Smaller footprint
- Greater interconnect density
- Faster speeds (lower resistance, capacitance, & inductance)
- Excellent thermal management

Introduced in 1964 by IBM as the C4 process (Controlled Collapse Chip Connection), Flip Chip now offers a viable & proven alternative to standard assembly technologies for products requiring enhanced performance. Aspen Technologies has extensive experience with a wide range of Flip Chip bump & assembly methodologies, and mating them with diverse substrates: organic, ceramic, HiTCE, flex, Si on Si, and others.

Whether your device requires three bumps or 3,000, has single or multiple die, requires lead-free, eutectic, or Stud Bumps, Aspen can provide a full assembly solution for you as it has many other recognizable industry names for nearly 10 years!



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