

FlipChip International Demonstrates 95 micron Pitch Bumping Technology for Advanced Semiconductor Devices

PHOENIX, Arizona, Aug 23, 2004---FlipChip International, LLC today announced the successful demonstration of 95 micron pitch bumping technology for advanced semiconductor devices at its R&D laboratory in Phoenix, Arizona. FlipChip International (FCI) has ongoing Research and Development projects in sub 100 micron bumping technologies as part of its extensive bumping and wafer level packaging roadmap. FCI is a leader in global merchant bumping services which provide critical electrical connections from the semiconductor devices to the system level components in applications such as cell phones, video games, portable instrumentation, Homeland Security and remote sensors.

Semiconductor manufacturers, which are more commonly referred to as Integrated Device Manufacturers (IDMs), are requiring advanced bumping technologies to support the large scale expenditures in next generation products. Bumping pitches below 200 microns are considered high technology and below 100 microns are considered advanced development. The global market for flip chip bumping is in excess of \$400M and is expected to increase 22% in 2004 with a number of devices switching to flip chip technology including graphic accelerator and flash memory chips. Flip chip packaging is growing faster than other semiconductor technologies due to its multiple benefits of cost, size reduction, weight reduction, performance and rapid market acceptance.

Dr. Haluk Balkan, Director of Engineering of FCI, said, "We are excited about our demonstration of 95 micron bumping capability utilizing our solder paste technology. In early 2003, FlipChip introduced its 150 micron pitch bumping capability and now this technology is in volume production at our Phoenix, Arizona facility. We have designed this 95 micron process to allow both peripheral and the more difficult full array designs thereby allowing our customers more flexibility in their semiconductor devices."

Dr. Joan Vrtis, Chief Technology Officer, said, "We are aligned with our customer's roadmaps and this 95 micron development is a timely response to a customer need. The task is a challenging one that requires advances in metallurgy, paste technologies and processing capabilities for the next generation of semiconductors. We will continue to invest in smaller and tighter bump pitches with careful attention to the reliability needs of our valued customers."

FlipChip International, LLC (FCI) is a privately held supplier of products and services for the wafer bumping and wafer level packaging semiconductor market. FCI products include the Flex-on-Cap (FOC) flip chip bumping process and the *Ultra CSP®* wafer level packaging process. FlipChip International, LLC is a wholly owned subsidiary of RoseStreet Labs, LLC, a supplier of products and services for wireless infrastructure in the life science and homeland security markets.

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