

Solder Jet[®] Printing Technology

Update on Pb-free SolderJet[®]

New Pb-free ink-jet based printing processes have been developed for the fabrication of high-density microelectronic and optoelectronic packages. Picoliter volumes of solder (as small as 25 μ m in diameter) are dispensed at temperatures up to 240°C. The data-driven nature of the processes leads to a higher level of process integration, lower cost, and increased flexibility. Potential applications include: integrated circuit packaging, chip scale packaging, optoelectronic interconnects, and printed circuit board manufacturing. Solder can be placed onto pads at rates of over 400 bumps per second. Solder interconnects and vertical vias can also be printed.

Solder Jet[™] technology is available through MicroFab's in-house bumping services, on MicroFab's integrated ink-jet printing platforms, the jet**lab**[®], and the jet**lab**[®]-II, and as a subsystem for integration into custom platforms.



100 μ m diameter solder drops being formed at 240 per second.



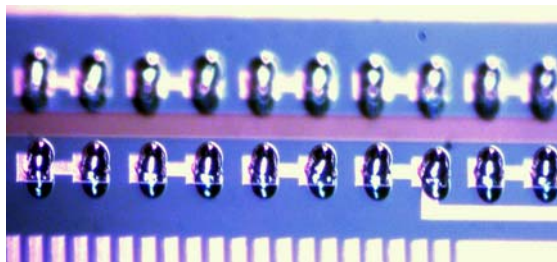
100 μ m solder bumps printed onto pads at 400 bumps per second.



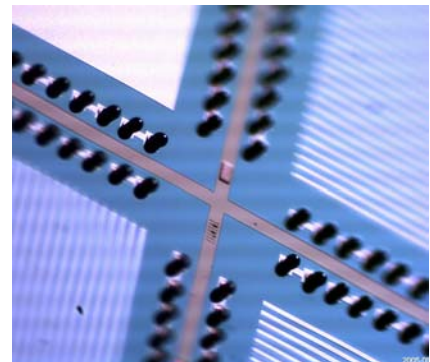
jet**lab**[®], integrated ink-jet printing platform employing Solder Jet[®] technology.



Solder and lens on VCSEL.



Pb-free 85 μ m solder bumps on a wafer



Pb-free wafer bumping

MicroFab Technologies, Inc.

1104 Summit Ave., suite 110 • Plano, TX 75074

Tel.: 972-578-8076 • Fax: 972-423-2438

www.microfab.com

contact: Mike Boldman,

mboldman@microfab.com