EPTE Newsletter from Japan - Another American Way for PWB Assembling

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Another American Way for PWB Assembling

Reliable board assembly shops are scarce when working with the 0402 size chip components (01005 sizes using the American standard). Many of the major electronics companies and many of the assembling shops in Japan are reliable when working with the smallest components because of the endless miniaturization of the consumer portable electronics. However, the only reliable assembling shop I could locate in the U.S. is Flextronics, but the EMS giant does not accept small assembling jobs. It was not easy to find a capable prototype shop for high density SMT assembling in the U.S.

Recently, I had information that an assembling shop in New England was capable working with the 0402 components. Altek Electronics, located in Torrington, an old town in Connecticut, is only a two hour drive from my office, so I visited the small town to verify the assembling capability. There were a lot of surprises in the company; more than I expected.

Upon arrival, I questioned whether the company could work with high density assembling because the building was more than one hundred years old and did not seem very efficient. My first impression was not a lasting one after I entered the old building. Altek may not have budgeted a lot for the building; however, inside the factory was completely refined as a high tech assembling process for the latest electronic products. All of the manufacturing areas are cleaned and organized; no trash, unnecessary items, or extra inventory was stored within a close proximity of the operators. Altek has installed the latest models of machines to keep pace with leading technologies in the industry and all the machines are well maintained.

The most impressive activity in the company is a strong participation in KAIZEN, a continuous improvement system to increase productivities. The goals of kaizen include the elimination of waste, just-in-time delivery, standardized work, right-sized equipment; etc. All of the employees think how to reduce the process time, how to increase the process yield, etc. I could see many signs of this process by notes on the boards and travelers in the main meeting room, where activities are displayed. Everybody is aware of recent progresses and next targets.

Altek is similar to a Japanese manufacturer. Many profitable companies in Japan use similar production concepts such as the Kanban system and TQC. Most successful manufacturers employ similar approaches to remain competitive while having the highest labor cost in the world compared to low labor cost markets such as China. I asked the president of Altek, Richard Razz, how he came across the improvement process. He explained that Altek has conducted a continuous improvement strategy using the Deming Method created by Dr. Deming in the U.S. This may be true; however, strong management and leadership is another key factor for success in this company.

Altek provides various valuable services for its customers at a competitive cost compared to the other manufacturers in the U.S. or countries that enjoy low labor costs. I can guarantee that Altek will be successful in this industry.

Nowadays, many American companies are transferring manufacturing to low labor cost markets in the Far East and Eastern Europe, laying off employees in the U.S. Please remember the average labor cost in the U.S. is less than half compared to Japan. I believe American manufacturers can be cost competitive against the Asian or East European countries if they employ similar activities as Altek Electronics. Altek has no plan to expand their business through volume production, but its ideas are still valuable for the volume business.

Dominique Numakura, DKN Research (dnumakura@dknresearch.com)

Interesting literatures about the packaging industry

Articles of DKN Research

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2. “Easy understanding Series, How to make IC packages”, (Japanese only), Jan Vardaman & Dominique Numakura, Nikkan Kogyo Shinbun, December, 2005, 1,800 yens.

3. “The latest semiconductor package, Part XV, Termination Technologies-Direct Bonding Flip Chip Bonding”, Dominique Numakura, Electronics Packaging Technology, June, 2006.

4. “The Latest Technology Trends of the High Density Electronic Circuits”, Dominique Numakura, Denshi Zairyo, the Special Edition of Jisso Guidebook, July, 2005.

5. “Global Market and Technical Trends of the Flexible Circuit Industry” Robert Turunen and Dominique Numakura, TPCA Journal, No. 32, 2006.

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2. “After the Fire, Catastrophic loss and the value of good contingency planning: One EMS provider’s story”, Art Rutlecge and Kim Boykin, Circuits Assembly, June, 2006.

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4. “Virtual RF PCB Prototypes”, David Morris, Printed Circuit Design & Manufacturing, June, 2006.

5. “Packaging for Improved Thermal Management”, Daxi Xiong, “Opto-WLP Technology (Wafer Level Solutions for Optical and Sensor Applications)”, Juergen Leib and Vlker Seidemann, “IC and Package Co-design”, Darren Maxwell, JohnSovinsky and Curtis Escobar, “Gold Ball Bumping”, Mark Greenwell “Pulsed-laser heating for Flip Chip Assembly- A Stress-free Alternative”, Thorsten Teutsch, Elke Zakel and Ghassem Azdasht, Advanced Packaging, May/June, 2006.

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