

## **ADDING and REPLACING 3M Introduces Thinner Embedded Capacitance Material for High-Performance Circuit Boards**

Add before first sentence of the fifth graph of release: Thin dielectrics require the use of very smooth copper foils.

The corrected release reads:

### **3M INTRODUCES THINNER EMBEDDED CAPACITANCE MATERIAL FOR HIGH-PERFORMANCE CIRCUIT BOARDS**

3M announced today that it has developed an improved embedded capacitance material that has a dielectric thickness of 8 microns and a capacitance density over 11 nanofarads per square inch, which makes it among the thinnest and highest capacitance density materials available for embedding planar capacitance in circuit boards. Fabricators and OEMs worldwide can use this material without a license from 3M.

3M will be exhibiting at the IPC Printed Circuits Expo, Feb. 22-24, 2005, at the Anaheim Convention Center in Anaheim, Calif., in Booth 1549.

"Using embedded capacitance for decoupling high-speed electronics offers many benefits, such as improved noise margins, faster signaling, less-radiated emissions and reduced capacitor counts," said Bill Balliette, new business development manager, 3M Electronic Solutions Division. "This thinner laminate gives design engineers more space to work with."

The 3M laminate material allows designers and manufacturers of high-speed digital printed circuit boards to achieve higher speeds while simplifying design tradeoffs. When used as a power-ground core in a multilayer printed circuit board, 3M embedded capacitor material effectively becomes a decoupling capacitor inside the board. The material allows designers to eliminate large numbers of decoupling capacitors, increases useable board area, enables faster signaling, lowers radiated emissions (EMI), and saves engineering time associated with power distribution design and board layout. Printed circuit board fabricators can use the material in military, automated test equipment, computer and telecommunications applications.

Thin dielectrics require the use of very smooth copper foils. 3M's new product offers good adhesion between the dielectric and the very smooth copper foils. 3M's improved embedded capacitance material is covered by U.S. Patent No. 6,274,224.

3M is supplying samples in limited quantities to select OEMs and fabricators for initial testing. To learn more, go to <http://www.3m.com/thin>.

#### **About 3M Electronics**

3M offers a wide range of products for the electronics market: component handling and protection products; flexible and multilayer microinterconnect packaging solutions; embedded capacitance laminate materials, copper and fiber interconnect systems; cables and cable assemblies; static control products, Textool brand test and burn-in sockets; tapes, abrasives, chemicals and materials, and ceramic textiles and composites.

#### **About 3M -- A Global, Diversified Technology Company**

Every day, 3M people find new ways to make amazing things happen. Wherever they are, whatever they do, the

company's customers know they can rely on 3M to help make their lives better. 3M's brands include Scotch, Post-it, Scotchgard, Thinsulate, Scotch-Brite, Filtrete, Command and Vikuiti. Serving customers in more than 200 countries around the world, the company's 67,000 people use their expertise, technologies and global strength to lead in major markets including consumer and office; display and graphics; electronics and telecommunications; safety, security and protection services; health care; industrial and transportation. For more information, including the latest product and technology news, visit [www.3M.com](http://www.3M.com).

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3M Electronic Solutions Division, AustinMatthew Fagan, 512-984-3277

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