Mitsui Mining and Smelting Co., Ltd. (Mitsui Kinzoku)
1-11-1, Osaki, Shinagawa-ku, Tokyo, 141-8584 Japan

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FOR IMMEDIATE RELEASE

Thinnest Embedded Capacitor, FaradFlex® Developed

～marketing FaradFlex® to Japan and US～

Oak Mitsui Technologies LLC. (OMT), a subsidiary of Mitsui Mining & Smelting Co., Ltd. (MMS), has released a thin embedded capacitor material (product name: FaradFlex®) which consists of an 8 ㎛ dielectric layer, targeting an emerging market in Japan as well as the US.

＜Thinnest Embedded Capacitor＞

The new version of FaradFlex® is a Copper Clad Laminate which has the thinnest dielectric layer in the world which allows our material to increase capacitance and to reduce inductance. This not only provides improved electrical performance, but can be compatible with various applications ranging from supercomputers to hand-held mobile devices.

FaradFlex® can be readily manufactured using standard PCB processing, therefore no additional business investment in equipment is required. In addition, FaradFlex® can be utilized to lower the overall cost of PCB processing, by reducing both mounting costs and the substrate area.

FaradFlex® is mainly based on Cu foil technology from MMS in Japan. It consists of a film-type resin (modified epoxy resin with the thickness of 8~24㎛) with Cu foil on both sides (with thickness of 35㎛). Since the first release of the product to the market in 2003, the usage of FaradFlex® to provide embedded capacitance has been driven by the need to improve the electrical performance of PCBs.

＜Embedded Capacitor＞

Embedded capacitors are constructed into multi-layer PCBs, acting as a condenser (※3）. Since they reduce the inductance between the chip and the power supply, they can suppress the signal noise, preventing a mal-function of the device. Furthermore, this allows the number of components to be reduced, leading to the high circuit density and high speed system design.

Highly improved electrical performance of PCBs, such as enhancing signal integrity and reducing impedance at high frequencies with dampening noises, is in demand. However, complexity of circuit design, thickness limitations, and coupling between the components on PCBs are still hurdles which cannot be overcome with the current PCB technology. FaradFlex® meets these needs.

＜Market & Business Forecast＞

FaradFlex® has been used in high-end telecom and networking applications such as supercomputers and high-performance servers. This trend is similar in Japan. The increasing demand on capacitors for improved electrical performance (increased capacitance & signal speed) will expedite the usage of FaradFlex® to meet market expectations. OMT will lead the emerging market for PCB applications in Japan as well as in US.

※ 1. Sandwich construction …please refer to the reference as below.

2. Typical application using embedded capacitor…OMT responds to customers' requirements with a the product line-up ranging from a dielectric constant which is similar to the standard PCB (FR4) used for mobile phones, to a higher dielectric constant resulting from filler inside the resin. The product line-up also includes core type material which has a dielectric layer in between both sides of Cu and build-up material which has a dielectric layer on one side of the Cu.

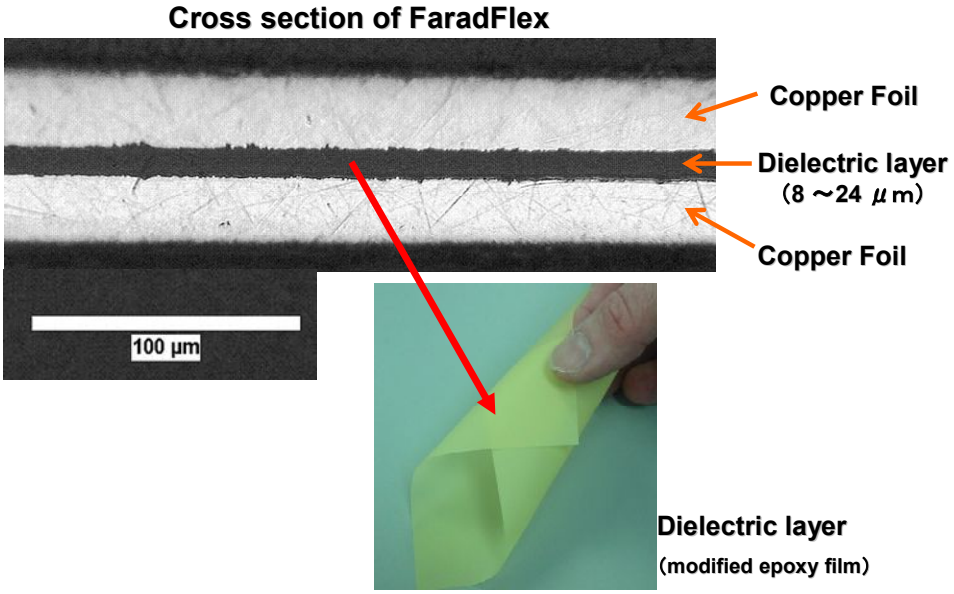
※ 3. Condenser…one of the components in the circuit, accumulating the electricity.

【Company information】

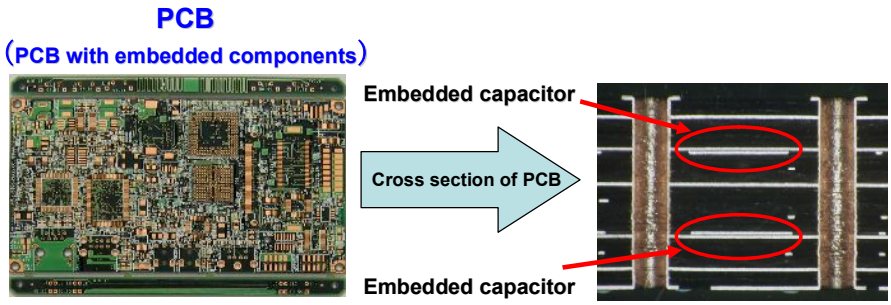
1．Name Oak-Mitsui Technologies LLC
2．Place Hoosick Falls, NY, USA
3．Capital US $1,000【Oak-Mitsui Inc. 100％ invest】
4．President Fujio Kuwako
5．Employee 35
6．Foundation Jan. 1st, 2003
7．Business R&D & marketing

【Reference】

1. Construction of the embedded capacitor material



2. Example using the embedded capacitor



※Embedded capacitor is constructed into PCB as a condenser.

【Contact】

Copper foil division, Ageo sales office, Mitsui Kinzoku

Phone:+81-048-777-2702　Facsimile:+81-048-777-2712

e-male: douhaku_hp@ys.mitsui-kinzoku.co.jp

Oak-Mitsui Technologies LLC

Phone:+1-518-686-4961　Facsimile:+1-518-686-8080