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TOUGHBOND SERIES: HIGH-RELIABILITY GOLD ALLOY BONDING WIRE FOR AUTOMOTIVE SEMICONDUCTOR DEVICES
— Also solution for fine pitch bonding and thinner wire bonding —

Tokyo, Japan — Sep. 25, 2006 — Mitsubishi Material Corporation is introducing its new development on High-Reliability Gold Alloy Bonding Wire for automotive semiconductor devices; TOUGHBOND series. TOUGHBOND series has dramatically higher gold/aluminum ball-bond reliability than conventional wires. (Patent Pending.)

In automotive semiconductor devices where strong reliability and durability at considerably high ambient temperatures is an absolute necessity, the increase of electrical resistance due to the deterioration at gold/aluminum ball bond has become a major concern among the industry. Hence, the demand for gold wire with higher ball-bond reliability is increasing.

In improving gold/aluminum ball-bond reliability, it is well known that gold alloy wires which contain palladium (Pd) are effective compared with conventional 4N wires, but users require further improvement especially due to the growing automotive semiconductor device demands in recent years. By applying its long-established precious metal refining and alloying technology, Mitsubishi Materials Corporation has successfully achieved a significant advancement of gold/aluminum ball-bond reliability by developing an unprecedented unique alloy composition.

Characteristics;
(1) By delaying the ball-bond deterioration, it can prevent the increase of electrical resistance.
(2) The softer ball is suitable bonding for fragile low-k devices (devices introduced low-dielectric insulating films)
(3) The softer ball also enables user to handle TOUGHBOND under the same bonding condition as conventional 4N (99.99% Au) gold wire.

The application of TOUGHBOND also extends to fine pitch bonding for the most advanced devices and thinner wire bonding for conventional semiconductor devices. The diameter of the wire ranges from 15um, and its gold purity is 3N (99.9% Au), 2N5 (99.5% Au), and 2N (99% Au).

Mitsubishi Materials already began supplying samples of TOUGHBOND to semiconductor device manufactures and IC packaging foundries. The expected sales increase is 17 million USD (2 billion JPY) in two years. If you would like more information about this topic, please visit www mmc co jp/adv/ele/english/index.html.

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