Toshiba Utilizes Applied Materials Low k Films for 90nm Volume Production

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Black Diamond and BLOk Low k Dielectric Films Support
Wireless Devices, Networking and Server Chips

Applied Materials Inc. (Nasdaq:AMAT) today announced its Black Diamond(R) and BLOk(TM) low k dielectric films are being used by Toshiba Corporation for volume production of its advanced 90nm CMOS4 process in the Oita, Japan facility, further validating the manufacturability of Applied Materials' low k films. Toshiba is using Black Diamond and BLOk to deliver higher performance and lower power consumption required for its TC300 family of ASICs, now being incorporated in the latest wireless devices, networking and server products.

Low k films are key to increasing the speed and power-efficiency of next-generation devices but have presented significant integration issues in the transition from research and development to production. Working together, Toshiba and Applied Materials have resolved these challenges to achieve a production-worthy low k process that will enable faster, more powerful chips.

Dr. Masakazu Kakumu, technology executive of Toshiba Corporation Semiconductor Company said, "Our TC300 family is targeted at next-generation, high-end applications ranging from portable wireless devices to high-speed networking and server products. Through a combination of design and manufacturing technologies, including 11 layers of copper wiring and Applied Materials' low k films, we are able to meet the most advanced performance and low power requirements for these applications. For example, integrating Black Diamond and BLOk has enabled us to reduce power consumption by almost 50 percent and capacitance by 16 percent. These results open the door to supporting a wider array of devices suitable for consumer and enterprise products."

Applied Materials' Black Diamond bulk dielectric film and BLOk process for barrier and etch stop applications work together to achieve an optimized combined effective-k value for the entire dielectric stack structure. Both films are deposited using the company's proven Producer(R) CVD platform. With more than 600 systems installed worldwide, Producer provides proven productivity, reliability and versatility for a broad range of generations and applications. Toshiba has multiple Producer systems in production to deposit these low k and other Applied Materials CVD processes, with additional 300mm Producer systems on order.

"We are very excited that Toshiba is using our CVD low k dielectric films to manufacture their latest copper chip designs," said Dr. Farhad Moghadam, group vice president and general manager of Applied Materials' Dielectric Systems and Modules Product Business Group. "This development signifies a new, long-awaited era in chipmaking, which has the potential to revolutionize electronic products and applications. In addition to providing Toshiba with the best low k technology, our goal is to now offer process extendibility and support that can speed time to market for their future products to 65nm and beyond."

Applied Materials, the largest supplier of products and services to the global semiconductor industry, is one of the world's leading information infrastructure providers. Applied Materials enables Information for Everyone(TM) by helping semiconductor manufacturers produce more powerful, portable and affordable chips. Applied Materials' web site is www.appliedmaterials.com.

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