

## 3M Multilayer Substrate Qualified For Staktek High-Density Memory Product

A multilayer flexible substrate manufactured by 3M Electronics has been qualified for use in Staktek's new ArctiCore memory module and is now in production. The 3M brand, four-layer substrate helps double the memory density of a DIMM (Dual In-Line Memory Module). A high-density packaging solution is provided by the utilization of a flexible circuit that allows dense circuit routing and three-dimensional packaging.

In this server and workstation application, the multilayer flexible substrate from 3M is folded 180 degrees around ArctiCore's aluminum core, which cools the DIMM to provide superior thermal, mechanical and electrical performance than current rigid printed circuit board (PCB) technology. Wrapping the 3M substrate around the heat sink core enables assembly of memory devices to both sides of the circuit, resulting in higher data rates and better thermal conductivity than current PCB technology. Staktek uses the module in enterprise and consumer electronics applications.

The circuit's high wiring density is accomplished through fabrication of 30 micron trace and space widths, and 50 micron diameter blind, buried and through microvias. 3M maintains precision tolerances to achieve tightly controlled impedances and electrical timing, thus optimizing device performance.

The 3M substrates, ranging from two to six metal layers, are made using a variety of adhesiveless substrate materials and conventional or modified polyimide adhesives. Although the Staktek qualification is for an IC packaging application, 3M brand multilayer substrates also are used in medical, military/aerospace and other applications.

To learn more about 3M brand multilayer flexible substrates, please visit [www.3M.com/multimetal](http://www.3M.com/multimetal).

### About Staktek Holdings

Staktek is a world-leading provider of intellectual property and services for next-generation, chip-stacking and module technologies used in high-speed, high-capacity systems. Staktek's Performance, Value and High Performance Stakpak memory solutions increase operational performance by doubling, tripling or quadrupling the amount of memory in the same physical footprint as required by standard packaging technology. Staktek's ArctiCore is a revolutionary new module technology using a double-sided, multilayer flexible circuit folded around an aluminum core designed for superior thermal, mechanical and electrical performance. With an IP portfolio of more than 175 patents and patent applications pending, the company offers flexibility for customers, including outsourced manufacturing, technology licensing and custom engineering. Headquartered in Austin, Texas, Staktek operates two world-class manufacturing locations in Austin and Reynosa, Mexico.

### About 3M Electronics

3M Electronics, co-located in Austin, Texas, and St. Paul, Minn., has numerous technologies and provides a wide range of products for the electronics market. The business provides products and solutions to meet the electronic industry's challenges of protecting sensitive components and precisely delivering them to the assembly point, such as carrier and cover tapes and trays, as well as flexible and multilayer microinterconnect packaging solutions; embedded capacitor 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 69,000 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 <http://www.3M.com>.

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