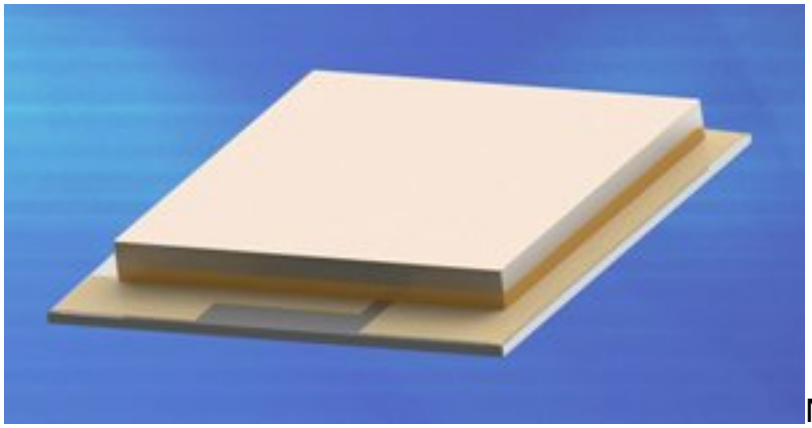
Thin-Film Thermoelectric Modules Offer Higher Cooling Capacity



Nextreme Thermal Solutions, the leader in micro-scale thermal management and power generation solutions, today announced a new series of thin-film thermoelectric modules that offer higher cooling capacity, robust mechanical design and source-matched heat flux density for easier integration into existing electronic systems. At only 1.1mm high, the new eTEC MA8000 Series is designed to provide low-profile thermal management solutions for medium heat flux applications in markets including photonics, electronics, test and measurement, and aerospace.

The MA8000 Series includes five new modules that can pump from 10 to over 80 watts of heat at an ambient temperature of 25°C with footprints ranging from 63 to 375 mm². With heat flux densities ranging from 16 W/cm2 to 22 W/cm2, the MA series offers the ability to match thermoelectric cooling designs more easily to heat sources and existing convection-based heat rejection systems. The new modules fill the gap between traditional thermoelectrics that offer 6-8 W/cm2 and Nextreme's HV series that pumps heat in excess of 100 W/cm2.

The MA8000 series features a high-strength seal ring made from Cirlex® polyimide film that provides mechanical isolation across the thermoelectric device, virtually eliminating vertical force and sheer issues. The seal ring also serves as a barrier to moisture and other contaminants that could affect the performance of the module.

"The introduction of the MA series significantly expands our thin-film product line," said Dave Koester, vice president of engineering for Nextreme. "The greater cooling capacity, lower heat flux density, and robust design will open up new applications for our thermoelectric products."

Commercial shipments of the eTEC MA8000 series will begin in the first quarter of 2013. Pricing is available upon request.

Nextreme recommends the use of its thermal modeling, design and engineering services to deliver fully-optimized thermal management solutions when using the MA series. Nextreme routinely conducts analytical and numerical thermal modeling

at all design levels from component to module to subsystem.

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