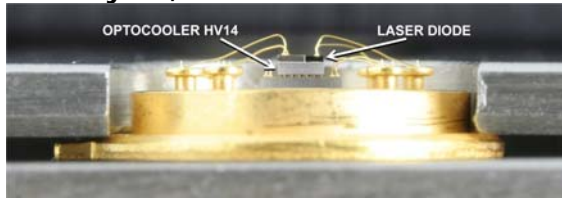


FOR IMMEDIATE RELEASE

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Side profile of a laser diode TO package (cap removed) with embedded OptoCooler HV14 thermoelectric cooler

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Company to demonstrate thermoelectric products at Photonics West 2010, Jan 26-28, Booth 5126...

NEXTREME DEMONSTRATES LASER COOLING FOR TO-CAN PACKAGES

DURHAM, N.C. (January 19, 2010) — Nextreme Thermal Solutions, the leader in microscale thermal and power management products for the electronics industry, today announced the cooling of a laser diode in a TO-8 package using an embedded thin-film thermoelectric OptoCooler HV14 module. Cooling the laser improves the output performance and reliability of the device.

Laser diodes are susceptible to heat, which can adversely affect their output power and wavelength. Manufacturers have traditionally used thermoelectric coolers for temperature control. However, as the photonics industry has moved to smaller, more integrated packaging in order to reduce costs, conventional TECs have not kept pace with these size and heat requirements. Because of this, in some instances designers have chosen to place the cooling device outside the package. Cooling the diode by cooling the entire package is an inefficient method of thermal management.

Thermoelectric coolers made from thin-films are smaller and thinner than conventional TECs and can be embedded in the smallest of packages. In addition, thin-film TECs have a low mass which enables a more rapid thermal response to changing temperatures.

To illustrate the benefits for cooling a laser with an embedded TEC, Nextreme mounted a laser diode on the active side of an OptoCooler HV14 thermoelectric cooler in a TO-8 package. At 85°C, the OptoCooler HV14 module can pump 1.7 watts of heat in a footprint of less than 3mm². The TEC can create a temperature differential (ΔT) of up to 50°C between its hot and cold sides. As a part of the demonstration, a test bed was assembled to measure the effects of cooling on laser output and wavelength. When the TEC was turned on, the temperature of the diode quickly dropped from 42°C to approximately 21°C in milliseconds and the output level of the laser nearly doubled from 0.38mW to 0.74mW at a drive current of 100mA. An optical spectrum analyzer measured a wavelength shift toward the blue spectrum of approximately 13.6nm.

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Nextreme Demonstrates Laser Cooling for TO-Can Packages, Page 2

A test report is available for downloading at www.nextreme.com/laser. To view a video of the test results, visit www.nextreme.com/videos.

"Embedded thermoelectric coolers from Nextreme enable smaller and more cost-effective packages," said Dr. Paul A. Magill, vice president of marketing and business development for Nextreme. "The small footprint, high heat pumping capabilities and super-fast response time of our eTEC coolers enable precise temperature control of lasers, which leads to higher output power and greater wavelength stability."

Nextreme will be demonstrating its cooling and thermal management product family, including the HV14 module, at the Photonics West 2010 conference, January 26-28 in booth #5126 at the Moscone Center in San Francisco, California.

The OptoCooler HV14 is RoHS compliant and is available for order now. Pricing is available upon request. More information on the OptoCooler family can be found at www.nextreme.com/optocooler. Contact Nextreme at 3908 Patriot Dr., Suite 140, Durham, NC 27703-8031; call (919)-597-7300; e-mail info@nextreme.com; or go to www.nextreme.com.

About Nextreme Thermal Solutions™, Inc.

Nextreme Thermal Solutions designs and manufactures microscale thermal and power management products for the electronics, telecommunications, semiconductor, consumer, and aerospace/government industries. The company uses breakthrough thin-film thermoelectric material to embed cooling, temperature control and power generation capabilities into the widely accepted copper pillar bumping process used in high-volume electronic packaging. Nextreme's headquarters and manufacturing facility are based near Research Triangle Park, North Carolina. Visit www.nextreme.com.

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For additional information or to request the electronic image, please email beth.gaddy@btbmarketing.com or call 919-872-8172.