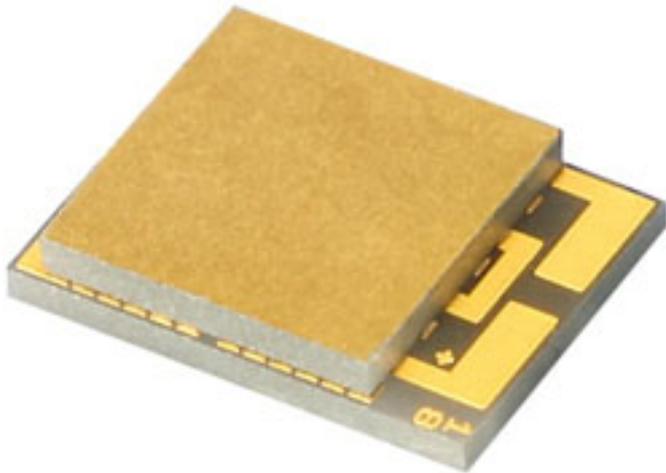


Power Generator Serves Self-powered Distributed Sensors and Sensor Networks



Nextreme Thermal Solutions announced the availability of the new eTEG(TM) HV37 thermoelectric power generator, the next entry in the high-voltage (HV) series of clean energy generators based on thin-film thermoelectrics. The eTEG HV37 converts waste heat into electrical energy for a variety of self-powered applications in the wireless sensor, automotive, aerospace, industrial and medical device markets. The eTEG HV37 joins Nextreme's other power generators, the eTEG HV56 and HV14, to offer a complete line of thermoelectrics that address a range of power and voltage requirements.

The eTEG HV37 is capable of producing 1.0mW of output power and an open circuit voltage of 170mV at a 10K ΔT in a footprint of only 6mm². At 50K ΔT , the HV37 produces 24mW of power and an open circuit voltage of 850mV.

The module is extremely thin: only 0.6mm high, and can be configured electrically in series to produce higher voltage and power outputs.

Nextreme's eTEG devices generate electricity via the Seebeck Effect where a voltage is produced from the temperature differential produced by heat flow through the device.

"Deployment of distributed sensors and sensor networks have led to an increased interest in renewable and autonomous power sources," said Dave Koester, vice president of engineering at Nextreme. "The use of waste heat is an attractive source of energy for many applications where power on the order of μ W-mW is required."

The high voltage output of the HV37 is enabled by Nextreme's proprietary micro-

scale thermoelectric technology. Certain applications (e.g., generating power off the heat of the human body, or generating power for wireless sensors) require a high density of thermoelectric elements in order to generate power at low temperature differentials. Nextreme's patented thermal bump fabrication process can achieve thousands of elements per square centimeter.

The eTEG HV37 is a replacement module for the eTEG UPF40, Nextreme's first thin-film power generator. The HV37 has similar power characteristics to the UPF40, but with much higher output voltage in a smaller footprint. The new module is RoHS-compliant and manufactured using eutectic gold-tin (AuSn) solder, which enables assembly temperatures as high as 320°C.

The eTEG HV37 module is available with an 8 to 10 week delivery lead time. Pricing is available upon request.

Nextreme engineers are currently working with customers in a variety of industries and applications. These include clean energy harvesting and storage solutions for wireless sensor networks and remote power management.

Nextreme recommends the use of its thermal modeling, design and engineering services to deliver fully-optimized energy harvesting solutions. Nextreme routinely conducts analytical and numerical thermal modeling at all design levels from component to module to subsystem. Advanced analysis of complex systems, components or packages often require more detailed modeling to understand heat flow and thermal gradients.

More information on the eTEG power generation family can be found at www.nextreme.com/power [1]. Contact Nextreme at 3908 Patriot Drive, Suite 140, Durham, NC 27703-8031; call (919)-597-7300; e-mail info@nextreme.com [2]; or go to www.nextreme.com [3].

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[1] <http://www.nextreme.com/power>

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