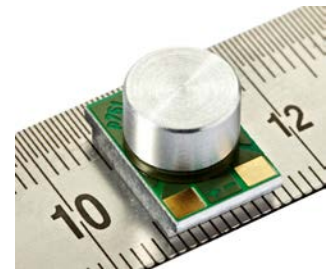


Surface-Mount Micro Thermogenerators Challenge Batteries

Simplified energy harvesting device to power wireless sensors and actuators from waste heat

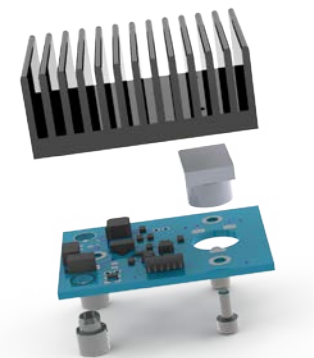
Freiburg, 23 November 2011 – Micropelt announces its new Thermogenerator Package (TGP), which makes thermal energy harvesting ready for mass production. The new device allows for automatic assembly of autonomous DC power supplies for ultra low power wireless sensors and actuators. Battery maintenance, so far preventing wireless monitoring sensor networks from really taking off, can be eliminated by TGP-enabled autonomous DC power modules whenever a temperature difference of 5 °C or more is available. Output power ranges from 100 Microwatts to over 10 Milliwatts, sufficient to offset most batteries.



Micropelt's standardized TGP package comes in two flavors, TGP-651 and TGP-751, both types being fully interchangeable. Output power and cost can thus be matched to target applications and markets without any changes to the PCB design.

"At lower gradients, between 10 and 40 °C, both devices produce very similar power levels, so the TGP-651 with a 6 sqmm TEG is preferable for cost reasons", explains Dr. Joachim Nurnus, Micropelt's CTO. "However, for very low gradient operation or high power demand a TGP-751 with its 12 sqmm TEG is the best choice."

The TGP's circular Aluminum heat source interface feeds through a 10 mm hole of the hosting PCB. The rectangular cold face carries the electrical contacts for reflow soldering and connects to the heat sink on its outer side. The device's vertical dimensions ensure sufficient clearance for electronic components mounted next to it, underneath the heat sink.



SMT packaged
Thermogenerator in a
typical application

"Low cost energy harvesting opens many attractive growth markets for autonomous micro systems" said Fritz Volkert, Micropelt's CEO. "The TGP takes cost out of the bill of materials, and automatic SMT assembly reduces production cost. Batteryless applications in building automation, process and condition monitoring, and many other areas will benefit from faster time-to-market and greatly reduced development risk," Volkert added.

The products are available at Micropelt distributors for sampling and evaluation. The TGP-751 is available for 60 EUR/81 USD sample price, while TGP-651 sells for 40 EUR/54 USD. Volume prices, according to Micropelt, can go below 5 EUR, depending on committed volumes. System integration and series products are supported by the company's application and engineering teams.

About Micropelt

Micropelt GmbH, Freiburg, Germany, develops, produces and markets the world's smallest and most effective thermoelectric elements for clean-tech, thermal [energy harvesting](#), thermal sensing, cycling and cooling. The company employs 23 staff and recently opened their first million-unit production facility, also located in Germany.

Micropelt's thermoelectric chips are based on a patented scalable thin film [micro-structuring platform technology](#), which minimizes component size while maximizing power density for energy harvesting, cooling or thermal cycling applications. Process-inherent economies-of-scale break previous cost and price barriers of conventional thermoelectrics. Batteries become obsolete as cost-free electricity from waste heat powers wireless sensor networks for their entire life. Chip-thermogenerators also boast unprecedented sensitivity, resolution and dynamics in sensing heat flux and temperature change. For more information contact Micropelt or visit the website <http://www.micropelt.com>

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