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Core Body Temperature Measurement

greenTEG

gSKIN®: (Core) Body Temperature - Intro

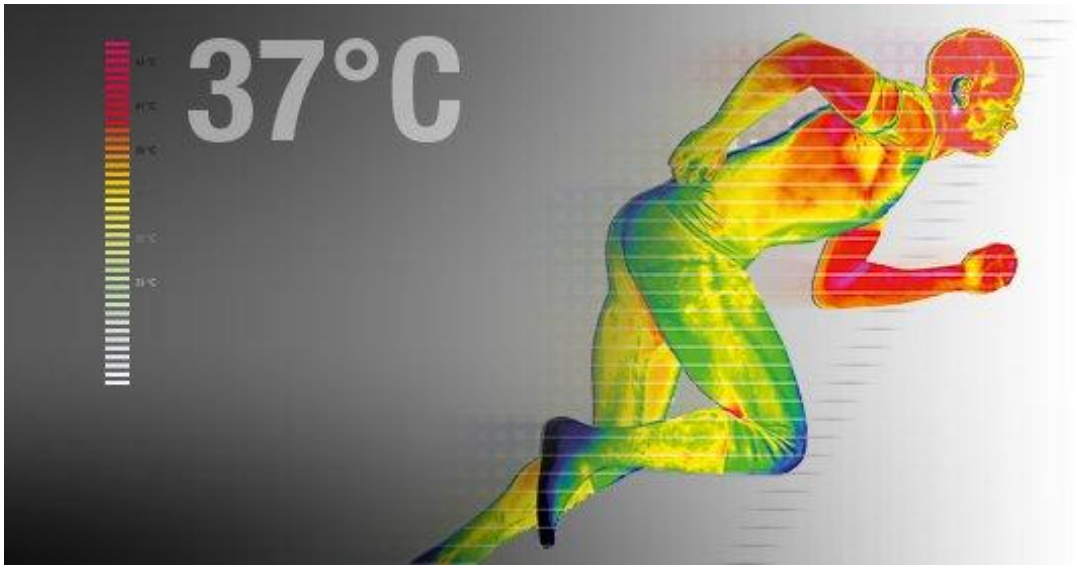
Our CBT measurement prototype aims to enable continuous visualization of the body core temperature in those for whom it can be life saving / performance enhancing.

At greenTEG we are focusing our R&D to provide YOU (soon) with a wireless, accurate and convenient CBT wearable device.

With the gSKIN® technology developed by greenTEG, Heat Flux is measured with a very sensitive thermoelectric sensor. Calculation of informative core body temperature is done by an algorithmus developed by our team of engineers and scientists.

As of now, we are selling Heat Flux Sensors for R&D purposes in small quantities, we aim for lower pricing and higher quantities attracting OEM customers in the near future.

gSKIN® CBT focus area

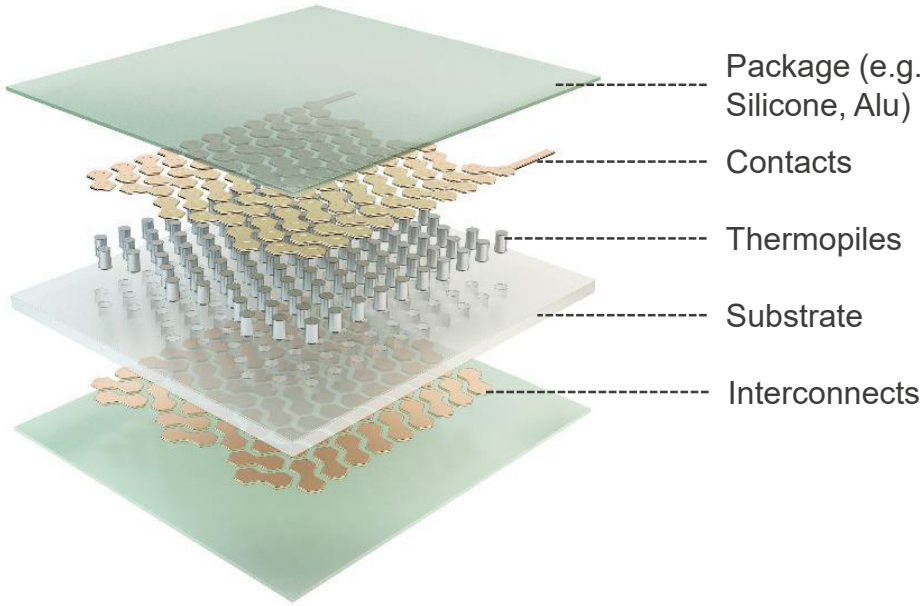


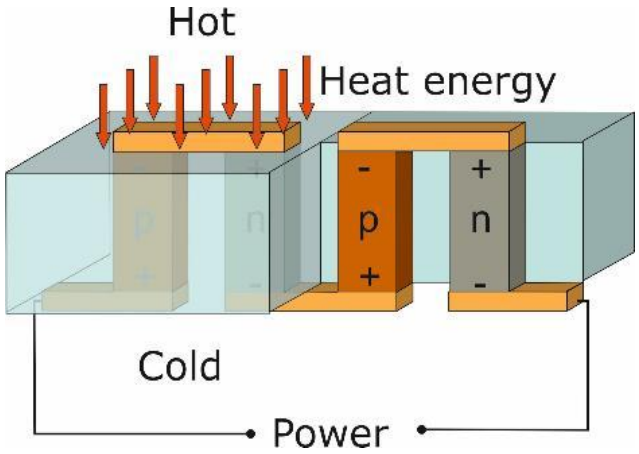
greenTEG's focus area:

- Athletes
- Firefighters
- Soldiers
- Sleep tracking
- Factory/mining workers
- Animal breeding

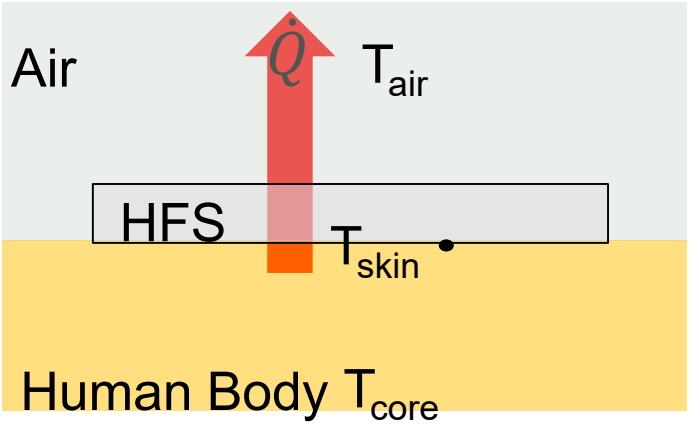
gSKIN®: device design

Thermoelectric generators (TEG)





Working principle:



Formula: $T_{core} = T_{skin} + K_{body}/\dot{Q}$

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gSKIN®: want to find out more?

Visit our e-shop: http://shop.greenteg.com/shop/heat-flux-measurement/gskin-xm/

gSKIN®-XM

Heat Flux Sensor
Size: 4.4mm x 4.4mm
Resolves 0.4 W/m^2 - 9 µW - 140 µK

Features

- Ultra-high resolution of thermal energies and temperature differences
- Low invasiveness and thickness
- Models with connector compatible with all gSKIN® DLOG Data Loggers
- All sensors with conductive heat flux calibration cohering to ISO 8301
- Applications: R&D, thermal optimization, energy efficiency, industrial monitoring of thermal properties

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Downloads

gSKIN® Heat Flux Sensors Datasheet

gSKIN® Heat Flux Sensors Instruction Manual

gSKIN® XM	
Article Number	A-044335
Detector Type	Thermoelectric
Surface Material (Sensing Area)	Aluminum
Sensing Dimensions (a x b x d) [mm x mm x mm]	4.4 x 4.4 x 0.5
Heat Flux Range Min / Max [kW/m²]	-150 / 150
Noise Equivalent Heat Flux [a] per area [W/m²] / absolute [µW]	0.340 / 6.6
Heat Flux Resolution per area [W/m^2] with gSKIN® DLOG [b] / absolute [µW]	0.41 / 7.9
Temperature Difference Resolution [µK]	~140
Min. Sensitivity (S) [µV/(W/m²)]	1.5
Temperature Dependence of S [%/°C]	0.25
Response Time (0-95%) [s]	0.7
Electrical Resistance [Ohm]	< 20
Absolut Thermal Resistance [K/W]	~18.0
Max. Compressive Force when clamped [kgf]	< 2
Operating Temperature Range Min/Max [°C]	-50 / 150
Calibration Temperature Range Min/Max [c] [°C]	-30 / 70
Calibration Accuracy [±%]	3
Homogeneity [d] [±%]	1
Linearity with Power [±%]	1
Flexprint Length [cm]	5

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