AZIMUT SPACE

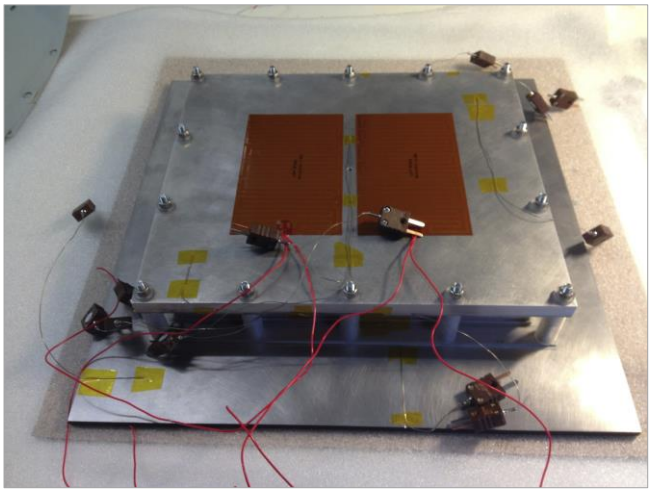
Datasheet

Heat Capacitors

Heat Capacitors for Space Applications are heat absorbing devices based on Phase Change Materials (PCM). They absorb heat from a payload, limiting the temperature increase, to release it at a later point in the mission.

Ideal for both on-orbit (cyclic) operations, to limit the thermal system loads for high-power/short duty cycle payloads (such as transponders and observing payloads), and for launcher (single-shot) applications.

PCM-HSD Prototypes



PCM-HSD during testing (up to TRL 6)

Key features and benefits

- Highly reliable and safe
- Fully passive
- Savings vs. Aluminium Spreaders:
  - Up to 80% on mass
  - Up to 30% on volume
- Higher temperature stability
- Rugged Design (Al or Mg casing)

<u>The heat capacitors are tuneable to:</u>

- Interfaces and sizes
- Heat flux
- Operational Temperatures
- Cyclic/one-shot operations

CRM GROUP

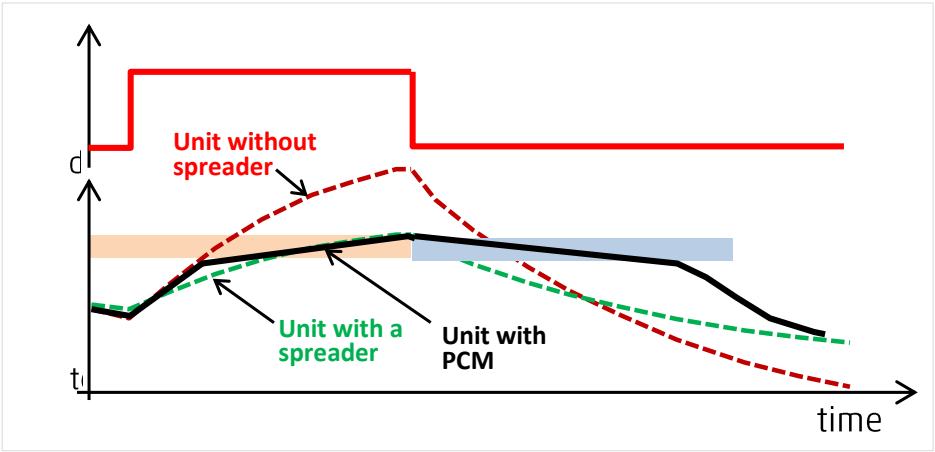
WALOPT

Specifications:

This completely passive and reliable device allows for a critical simplification of the thermal control system of a satellite or launcher, reducing heater and radiator sizes
PCM-based heat capacitors substitute typically used Aluminium spreaders, with considerable advantages.

Example Models:

Model	Power (W)	Power Density (W/cm^2)	Mass/ T gain (Kg/K)	Duration (s)	Operations
C01	27.0	1.93	2Kg/15K	2700	Cyclic
C02	40.0	2.86	2Kg/15K	3420	Cyclic
S03	90.0	0.14	15Kg/30K	13500	One-shot
S04	170.0	1.19	>1Kg/30K	200	One-shot



Unit behavior with and without PCM capacitor

CUSTOMERS AND PARTNERS
ESA, DLR, Thales Alenia Space, AIRBUS D&S, OHB, TNO, Sonaca

DESIGN SOFTWARE
Solidedge, Solidworks, Nastran, Hyperworks, ESATAN

TEST FACILITIES
Thermal Lab with Medium thermal vacuum chamber;
Thermal cycling chamber for life cycling

CONTACT:
Sales & Business Development
T: +49 30 63926071
info@azimutspace.com
www.azimutspace.com

Azimut Space GmbH
Carl-Scheele-Strasse 14
12489 Berlin – Adlershof
Germany