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TECHNICAL DATA SHEET

Thermal Capacitor

July 2022

ABOUT KULR TECHNOLOGY

KULR'S disruptive thermal management technologies strive to fulfill an addressable \$24 billion thermal management systems market. KULR's integrated design approach offers comprehensive solutions in thermal interface materials, lightweight heat exchangers, and protection against lithium-ion battery thermal propagation. Our high-performance solutions can be designed to fit almost any power or electronic configuration, including extremely demanding spaces or for applications where size and weight restrictions are a concern.

PRODUCT DESCRIPTION

KULR Technology's patented Thermal Capacitor is designed to absorb and redistribute thermal energy to dampen thermal spikes in a system and delay temperature rise. Thermal Capacitor is a fully customizable solution in both form factor and core thermal properties.

Using KULR's patented VerTherm technology, Thermal Capacitor can evenly and efficiently move heat into a PCM providing a lightweight and sustainable solution that can last for decades in the harshest environments. Thermal Capacitor has been used in high-reliability applications such as on the: Mercury Messenger, ISS NICER, and the Perseverance Mars Rover.

FEATURES AND BENEFITS

- Any size/shape/form factor
- Fully customizable thermal properties
- Dampens thermal spikes and delays temperature rise
- Sustainable and light weight

TYPICAL APPLICATIONS

Typical applications include hypersonic, optic, PCB, and solar cooling.

AVAILABILITY

Please contact KULR Technology Group for additional information.

DISCLAIMER

Data on this Technical Data Sheet (TDS) are typical values and for reference only. The information provided in this TDS, including but not limited to the recommendations for use and application of the product, are based on our knowledge and experience of the product. The product can have a variety of different applications, as well as differing working conditions and environments that are beyond our control. Factors or events that could cause actual results to differ may emerge from time to time, and it is not possible for us to predict all of them. We cannot guarantee future results, performance or achievements. Furthermore, no representations or warranties are made as to the accuracy or reasonableness of any assumptions on which the data or information is based.

This product is not intended for use with any products containing lithium metal. KULR Technology Group, Inc. is, therefore, not responsible or liable for the suitability of our products for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you conduct your own prior trials to confirm such suitability of our product for your use and application and within your working conditions and environments.



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Property	Value
Charge Mass	300MG to 14.5kg
Latent Heat Capacity	75 Joules to 3.6MJ
Melting Point Range	-50°C to 76°C
Core Conductivity	As high as 230 W/m-K
Temperature Capability	-130°C to +130°C
PCM Mass Fraction	<70%
PCM Volume Fraction	<84%
Environmental Pressure Range	1 atm to hard vacuum
Lifetime in Space	11 years demonstrated
Cycle Life	10,000 tested without failure
Toxicity	Our primary PCMs of choice are non-toxic and non-corrosive

