

High Performance Thermal Interface Material (TIM)



About KULR

KULR Technology has over 20 years of experience in the high-performance aerospace industry having won over 500 contracts with NASA, Raytheon, Boeing and JPL. KULR's carbon fiber based thermal management solutions have been utilized in the International Space Station, Mars Rover, and Mercury Messenger.

Product Highlight

KULR's proprietary carbon Fiber Thermal Interface material ("FTI") offers a unique combination of features and benefits for a wide range of high performance applications.

Key Features

- High performance, flexible, thermally conductive carbon fiber-based Density < 0.7 g/cm³
- Very low contact pressure to achieve low thermal impedence.
- Full compression recovery, reusable; closely matches mating surfaces.
- Halogen Free, RoHS & REACH Compliant

Benefits

- Increases power densities of the board layout
- Relieves mechanical stress
- Increases thermal stability and reliability
- High temperature tolerance in harsh working conditions
- Increases overall product performance and reliability
- Low contact pressure and high bond line thickness reduces manufacturing costs

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Applications

High performance and high temperature FTI can be utilized in a wide range of applications:

- Aerospace: satellite, aircraft, and drone
- Automotive: EV, power transmission, “under-the-hood” high-temperature applications, etc.
- Industrial: extreme temperature applications, oil & gas, down-hole, ships, solar, energy storage, etc.
- Electronics: surface mount assembly, automated heatsink attachment, etc.



Characteristics

More Info

Please call or email us with details about your thermal management needs and we can start the process of customizing the best solution according to your product specifications.

FTI Characteristic	Value
Product	FTI-SP-2000
Color ¹	Black
Thickness (mm)	2.00 +-10%
Bulk Thermal Conductivity: Z (W/m-K) ²	>1.5
Thermal Impedance ((cm ² -°C)/W), Typical ³	>5
Operating Temperature Range (C) ⁴	-40 to 120
Dielectric Breakdown Voltage (V/mil) ⁵	conducting
CTE (ppm/C) ⁶	5 to 15
Maximum Compression (%)	<15

1. The color as shipped is generally dark Grey / Black. Other choices are available, subject to customization.

2. Z-axis thermal conductivity is dependent on the fiber density. Custom fiber densities are available for higher performance.

3. Thermal impedances shown are typical..

4. Operating temperature range is set by intermediate layers in the stack. Please contact KULR Marketing if your application requires extended (up to 120degC) and extreme >120degC operating temperatures.

5. Values shown are typical. Dielectric breakdown voltage for thermally conductive FTI is dependent on the composition of the stack.

6. Values shown are composite based on fiber distribution in the core and material layers in the stack. Our core material has negligible CTE.

Thermal Mechanical data	Pressure (PSI)		
	5	15	30
R ((cm ² -°C)/W)	12	6	4.7
Compression (%)	9	28	40

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