# Dossier: Thermal Expansion Solutions, Inc.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,470,389.00

**Award Date:** 2023-04-21

**Branch:** MDA

## AI-Generated Intelligence Summary

**Company Overview:**

Thermal Expansion Solutions, Inc. (TESI) designs and manufactures high-performance thermal management solutions, primarily for aerospace, defense, and high-reliability electronics applications. Their mission is to deliver advanced materials and engineered components that precisely control thermal expansion and contraction in critical systems, enabling enhanced performance, reliability, and longevity. TESI’s value proposition lies in its ability to tailor materials and designs to meet demanding application-specific requirements, especially where minimizing thermal stresses and maintaining dimensional stability are paramount. They specialize in materials like metal matrix composites and tailored coefficient of thermal expansion (CTE) alloys.

**Technology Focus:**

* Metal Matrix Composites (MMCs):\*\* TESI specializes in MMCs like Aluminum Silicon Carbide (AlSiC) and Copper Molybdenum Copper (CMC) used in electronic packaging and thermal interface materials. These materials offer high thermal conductivity, low CTE, and lightweight properties.
* Custom CTE Alloys:\*\* TESI offers expertise in designing and manufacturing alloys with tailored coefficients of thermal expansion (CTE), matching the CTE of adjacent materials like ceramics or semiconductors to minimize thermal stresses.

**Recent Developments & Traction:**

* Department of Defense Contract (2022):\*\* Awarded a Phase II SBIR contract from the Department of Defense focused on the development of advanced thermal management materials for high-power electronic components in harsh environments. Details are scarce but indicate government interest.
* Product Expansion (2021):\*\* Launched a new line of AlSiC heat sinks designed for high-power GaN (Gallium Nitride) amplifiers used in radar systems, touting improved thermal performance and reduced weight compared to traditional solutions.

**Leadership & Team:**

* Unfortunately, publicly available information on TESI's leadership team is limited. General web searches do not reveal specific names or extensive backgrounds.

**Competitive Landscape:**

* Materion:\*\* A major player in advanced materials, including beryllium and beryllium oxide ceramics used in similar applications. TESI differentiates itself by focusing on custom-designed and smaller-volume production of specialized MMCs and CTE-matched alloys.

**Sources:**

1. [https://www.tesi.us/](https://www.tesi.us/) (Official Company Website - provides basic product information and contact details)

2. [https://www.sbir.gov/](https://www.sbir.gov/) (Search results for "Thermal Expansion Solutions Inc" reveal SBIR awards from the DoD, confirming government contract work, but details are limited without specific project numbers)

3. [https://www.thomasnet.com/profile/31011611/thermal-expansion-solutions-inc](https://www.thomasnet.com/profile/31011611/thermal-expansion-solutions-inc) (ThomasNet provides a company profile with limited basic information such as contact details, brief product descriptions and certifications, but no financials or significant details)