

TIMbber™ ALT-304-90

High Performance TIM

Preliminary Technical Data Sheet

Description:

Arieica's ALT series of Liquid Metal Encapsulated Elastomer (LMEE) Thermal Interface Material (TIM) is specifically designed to combine the thermal benefits of liquid metal with the manufacturing ease of polymer and Gel TIM (PTIM). The ALT family establishes a low thermal resistance connection between an integrated circuit die and package lid or integrated heatsink without the need of sophisticated manufacturing processes required to contain liquid metal migration.

Through Arieica's patented LMEE technology, high thermally conductive liquid metal is encapsulated in a protective polymer matrix. This enables extremely high reliability, as the liquid metal is inherently protected from oxidation, even with thin bond line thicknesses of less than 30µm.

Key Features:

- Extremely low thermal resistance
- Electrical isolation
- Low BLT capabilities
- High reliability
- Single component
- Low viscosity

Nominal Properties¹:

Thermal Resistance ² (mm ² K/W) @ BLT < 30µm	< 7
Complex Viscosity ³ (cP) @ 10 rad/sec	193,000 ± 12,000
Adhesion ⁴ (N/m)	> 35
Elongation ⁵ (% Strain at Break)	> 200
Color	Gray

¹ The ALT family is currently in pre-production and sampled on an NDA basis. All specifications are nominal and have not been statistically validated.

² Measured on ASTM D5470 TIMA test apparatus <https://nanotest.eu/tima>

³ Measured with TA HR10 Rheometer, 5 measurements from different batches <https://www.tainstruments.com/hr-10/>

⁴ Measured 180-Peel test with Mark-10 with TIMbber™ applied to nickel plate <https://mark-10.com/>

⁵ Measured with Mark-10 with TIMbber™ sample cured in dog-bone shape <https://mark-10.com/>

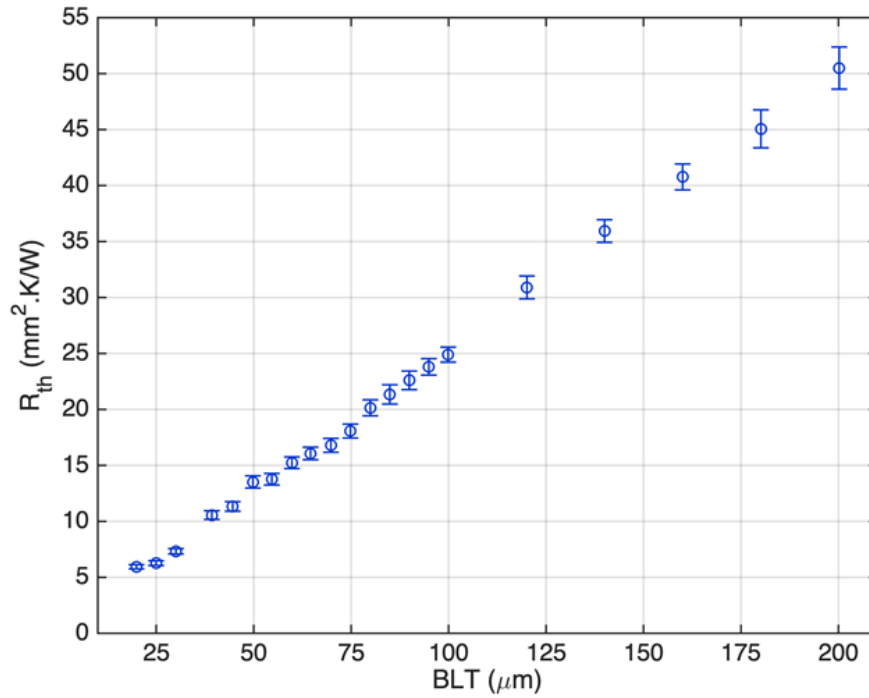


Figure 1: D5470 Thermal Resistance vs. BLT

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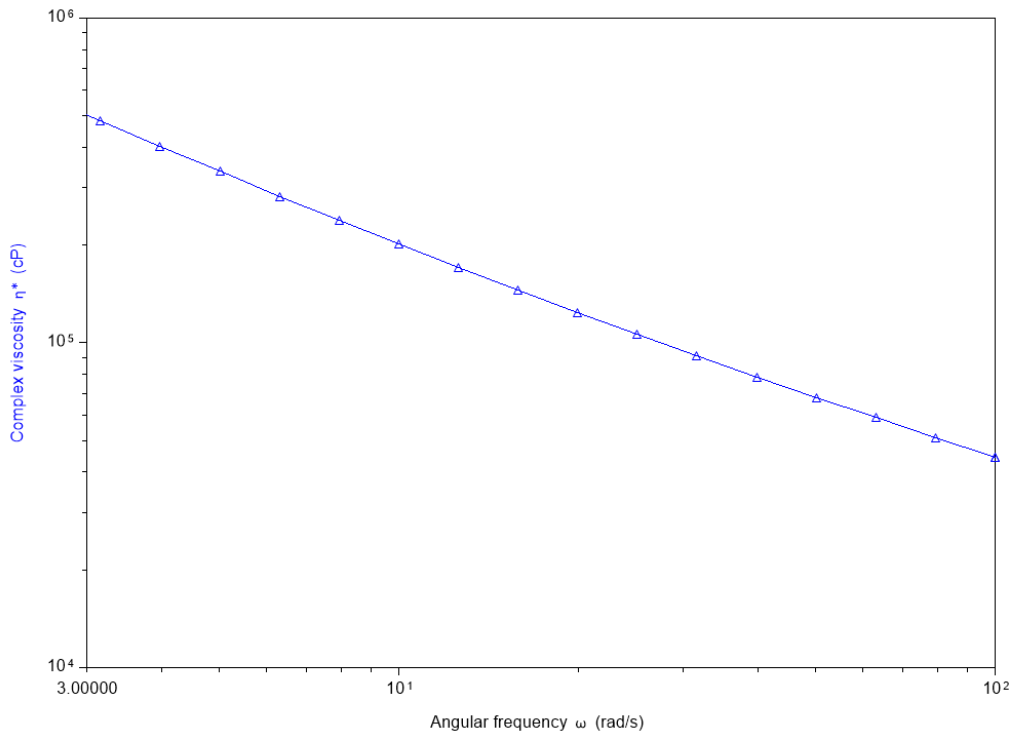


Figure 2: Complex Viscosity vs. Frequency



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Warranty:

The information and data contained herein are believed to be accurate and reliable; however, this product is still under engineering validation. Quantities may be limited, and design specifications may change while we ready the product for release to production. This product is currently provided for proof of concept (PoC) evaluation, and Ariecca makes no warranties concerning the fitness or suitability of its products for a particular use or purpose.