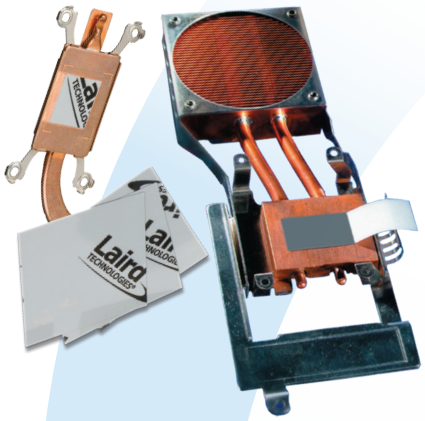
Laird TECHNOLOGIES

Innovative **Technology** for a **Connected** World

# Tmate™ 2900 Series
## Phase Change Material




### FOR EXCEPTIONALLY LOW THERMAL RESISTANCE

The Tmate™ 2900 Series is a reusable phase change material (PCM) designed for ease of testing and rework ability. It has a composite construction of a special malleable metal alloy and a high-performance PCM.

At 50°C, the Tmate 2900 Series begins to soften and flow, filling the microscopic irregularities of the thermal solution, thus reducing thermal resistance.

It shows no thermal performance degradation after 1,000 hours @130°C, or after 500 cycles from -25°C to 125°C. The PCM softens and does not fully change state, resulting in minimal migration (pump-out) at operating temperatures (see viscosity curve). It is available in three thicknesses: 0.005" (0.125 mm), 0.010" (0.25 mm), and 0.020" (0.5 mm).

### FEATURES AND BENEFITS

- Low thermal resistance at low pressures
- Reusable: make and break thermal interface connection many times
- Naturally tacky at room temperature, no adhesive required
- No heat sink preheating required

### APPLICATIONS

- High frequency microprocessors
- Notebook and desktop PCs
- Computer servers
- Thermal test stands

**global solutions: local support**™

Americas: +1.888.246.9050
Europe: +46.31.704.67.57
Asia: +86.755.2714.1166

CLV-customerservice@lairdtech.com
**www.lairdtech.com/thermal**

Laird TECHNOLOGIES

Innovative **Technology** for a **Connected** World

# Tmate™ 2900 Series
## Phase Change Material

## SPECIFICATIONS

| PROPERTIES | Tmate™ 2905c | Tmate™ 2910c | Tmate™ 2920 | TEST METHOD |
|---|---|---|---|---|
| Construction & composition | | Foil reinforced boron nitride filled film | | |
| Color | | Yellow/Silver | | Visual |
| Thickness | 0.005" (0.13 mm) | 0.010" (0.25 mm) | 0.020" (0.51 mm) | |
| Thickness tolerance | ± 0.001" (±0.03 mm) | ± 0.001" (±0.03 mm) | ± 0.002" (±0.05 mm) | |
| Density | 1.86 g/cc | 1.64 g/cc | 1.52 g/cc | Helium Pycnometer |
| Shelf life | | 1 Year | | |
| Temperature range | | -25°C to 125°C | | |
| Phase change softening temperature | | 50°C to 70°C | | |
| "Burn-In" temperature | | 70°C for 5 min | | |
| Thermal impedance | | | | |
| @20 psi | 0.07°C-in²/W | 0.09°C-in²/W | 0.27°C-in²/W | ASTM D5470 (modified) |
| @130 KPai | 0.45°C-cm²/W | 0.61°C-cm²/W | 1.74°C-cm²/W | |
| Volume resistivity | | $5 \times 10^{12}$ ohm-cm | | ASTM D257 |
| Dielectric constant @ 1 MHz | | 4.2 | | ASTM D150 |

**Standard Thicknesses:** 0.005" (0.13 mm) 0.010" (0.25 mm) 0.020" (0.51 mm)
Consult the factory for alternate thicknesses

**Standard Sheet Sizes:** 9" x 9" (229 mm x 229 mm)

Tmate™ 2900 sheets are supplied with a clear polyester top liner to protect phase change material.

Tmate™ 2900 is available in individual die cut shapes.

**Adhesive:** Pressure sensitive adhesive is not applicable for Tmate™ products.


**global solutions: local support™**

Americas: +1.888.246.9050
Europe: +46.31.704.67.57
Asia: +86.755.2714.1166

CLV-customerservice@lairdtech.com
**www.lairdtech.com/thermal**


THR-DS-TMATE2900 1110

Any information furnished by Laird Technologies, Inc. and its agents is believed to be accurate and reliable. All specifications are subject to change without notice. Responsibility for the use and application of Laird Technologies materials rests with the end user, since Laird Technologies and its agents cannot be aware of all potential uses. Laird Technologies makes no warranties as to the fitness, merchantability or suitability of any Laird Technologies materials or products for any specific or general uses. Laird Technologies shall not be liable for incidental or consequential damages of any kind. All Laird Technologies products are sold pursuant to the Laird Technologies' Terms and Conditions of sale in effect from time to time, a copy of which will be furnished upon request. © Copyright 2010 Laird Technologies, Inc. All Rights Reserved. Laird, Laird Technologies, the Laird Technologies Logo, and other marks are trade marks or registered trade marks of Laird Technologies, Inc. or an affiliate company thereof. Other product or service names may be the property of third parties. Nothing herein provides a license under any Laird Technologies or any third party intellectual property rights.