



## ***BERGQUIST* microTIM mTIM 1000 SERIES**

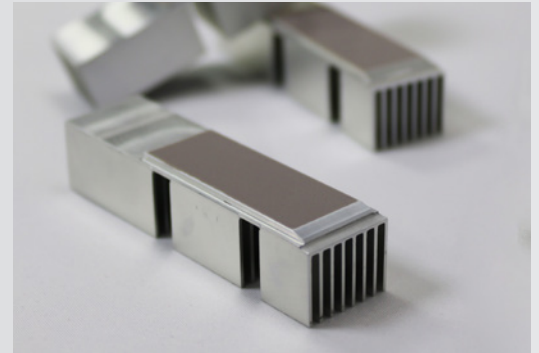
### **MICRO-THERMAL INTERFACE COATINGS FOR PLUGGABLE OPTICAL MODULES**

Effective thermal management is critical in today's hyper-scale and cloud-scale datacenters, where the transition to the 400 GbE standard requires managing greater data bandwidth. Henkel's *BERGQUIST* microTIM mTIM 1000 series are novel micro-thermal interface coatings designed to accelerate heat dissipation between pluggable optical modules (POMs) and their riding heat sinks. Applied on the heat sink, the materials are durable micro-TIM coatings that reduce heat per 16-watt POM by as much as 5°C. With as many as 32 POMs per networking line card, this is significant across the server ecosystem. In customer testing, *BERGQUIST* microTIM mTIM 1000 series materials were able to withstand upwards of 500 pulls and insertions with no degradation in performance.



## Key Benefits

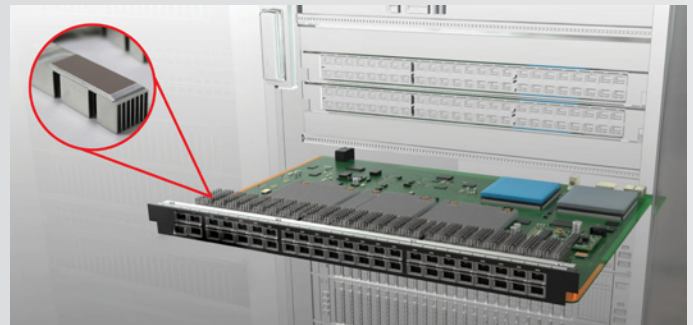
- Easily applied in high volume to aluminum and copper line card heat sinks
- More robust alternative to pads and taped-on phase change materials
- Highly durable, withstanding more than 500 plugs and pulls
- Reduces heat per pluggable optical module by 0.33°C/Watt; 5°C per 16-watt module
- Compatible with in operation temperatures of -40°C to + 200°C



Properties	BERGQUIST microTIM mTIM 1013	BERGQUIST microTIM mTIM 1029
Thermal Performance over metal to metal (°C/W)	0.33 $\Delta T$ 5°C at 15 W	0.33 $\Delta T$ 5°C at 15 W
Appearance	Tan	Gray
Heat Sink Type	Aluminum heat sinks with Alodine Type 2, Class 1 A, ROHS certified surface finish	Copper heat sinks with either tin plating, class A to ASTM B545 or zinc plating type 3 to ASTM B633 surface finish
Thickness	24 $\mu m$	24 $\mu m$
Operating Temperature	Up to 175°C	Up to 175°C
Volume Resistivity, ASTM D257 (G $\Omega$ -m)	> 1	> 1

## Typical applications

- Heat sinks used in riding cage assemblies used in switches, servers, and routers
- Flatness coating interface requirements: ISO Flatness < 75  $\mu m$  and Surface Roughness < 3  $\mu m$



**microTIM by Henkel**  
cool technology for hyperscale performance

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Around the Globe.   
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**Henkel Corporation**  
18930 West 78th Street  
Chanhassen, MN 55317  
United States  
+1.800.347.4572

