



Corporate Overview

Welcome to The Bergquist Company

Introduction

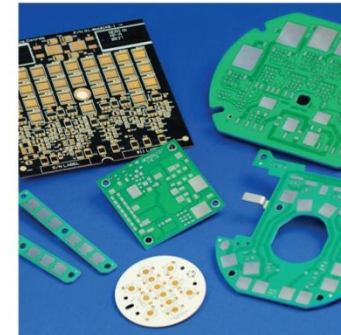
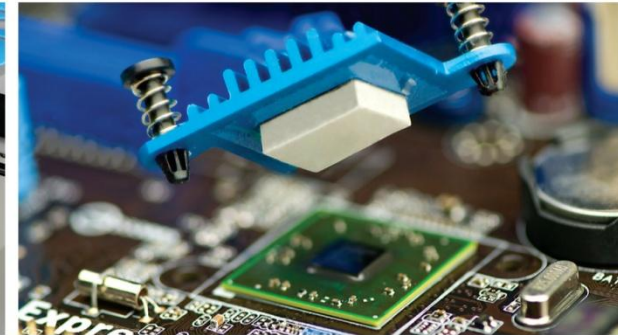
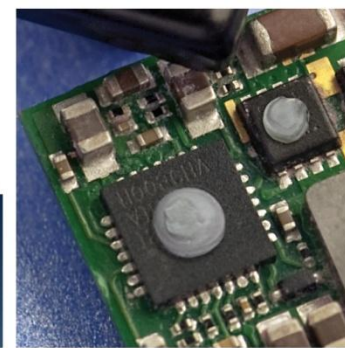
- The Bergquist Company is the market leader in designing and manufacturing thermal solutions that quickly and efficiently transfer heat from hot components to the surrounding environment. Products integrated with Bergquist solutions last longer, are more reliable and operate at optimal performance.



Bergquist Products

Operating Divisions

- Thermal Interface Materials
- Insulated Metal Substrates
- Custom Fans & Blowers
- Membrane Switch



Global Presence

● Design Centers and Manufacturing Sites

- Bigfork, MN
- Brandon, SD
- Cannon Falls, MN
- Chanhassen, MN
- Pinneberg, Germany
- Prescott, WI
- Seoul, Korea
- Shenzhen, China
- Torrington, CT

★ Headquarters

- Chanhassen, MN
- Eemnes, The Netherlands
- Hong Kong, China

● Sales Locations

- Worldwide Locations



Research and Development Focus

- Our Engineers and Scientists maintain direct engagement with industry leaders and academic consortia to insure innovative, lean, flexible and fast paced development
- Development Tools
 - ✓ Lab coater(s), Presses, Ovens, Mixers, Laminators
- Analytical/Measurement
 - ✓ Thermal, Chemical and Material Characterization
 - ✓ Custom application development and support
- Reliability/Validation
 - ✓ High temperature ovens, Humidity Chambers, Thermal shock chambers, UV Weathering, High Altitude Test Chamber, HAST chambers, Vibration testing



Quality & Environmental Policy

- To operate our business around documented and defined processes to ensure compliance to customer requirements. Our policy includes continuous improvement of the effectiveness of our quality management system in order to meet or exceed the quality objectives established by each division.
- To maintain an effective environmental management system that, through environmental aspect identification, evaluation, control and continual improvement maintains compliance with all applicable regulatory and legal requirements and actively strives towards its internal objectives and target for pollution prevention while effectively communicating EMS activities internally and to the public.



Quality Management System

- ISO 9001:2008
- TS16949:2009

Environmental Management System

- ISO 14001:2004

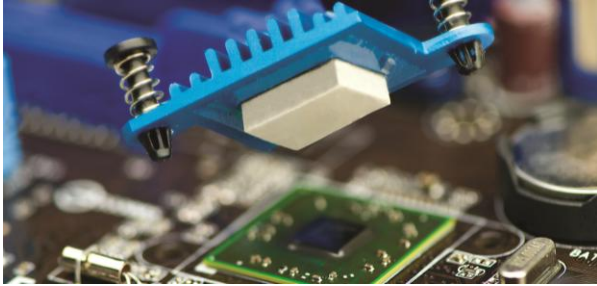
UL Certified

RoHS and REACH Compliant

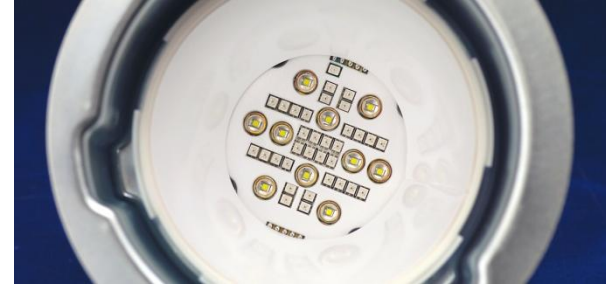
Note: 1: ISO/TS Registrar is SAI Global

Note 2: Specific certificate numbers, locations and date can be found on our website

Markets



- Thermal Interface Materials
 - ✓ Sil-Pad[®], Gap Pad[®], Gap Fillers, Liqui-Form[®], Liqui-Bond[®] and Bond-Ply[®]
 - ✓ Typical applications include:
 - Computing
 - Automotive
 - Power Supply
 - Motor Controls



- Insulated Metal Substrates
 - ✓ Thermal Clad[®]
 - ✓ Typical applications include:
 - Power LED Lighting
 - Automotive
 - Power Conversion
 - Motor Drives

Markets



- Fans & Blowers
 - ✓ Bergquist Torrington
 - ✓ Typical applications include:
 - Servers
 - Routers
 - Telecom
 - Power Supply



- Membrane Switch
 - ✓ HeatSeal®
 - ✓ Typical applications include:
 - Medical & Dental
 - Commercial
 - Pool & Spa
 - Military & Aerospace

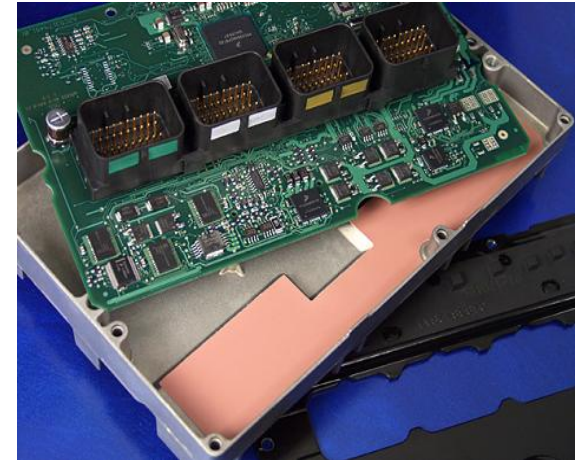
Bergquist Products

Globally Trusted Brand Names

- Sil-Pad[®] Thin Interface Pad Products
- Hi-Flow[®] Phase Change Pad Materials
- Gap Filler Curable Liquid Gap Filling Materials
- Liqui-Form[™] Non-Curing Liquid Gap Filling Materials
- Gap Pad[®] Conformable Gap Filling Pads
- Liqui-Bond[®] Thermally Conductive Liquid Adhesives
- Bond-Ply[®] Double-sided Adhesive Tapes & Laminates
- TIC[™] High Performance Grease
- Thermal Clad[®] Insulated Metal Substrates
- HeatSeal[®] Advanced Sealing Adhesive for Membrane Switches

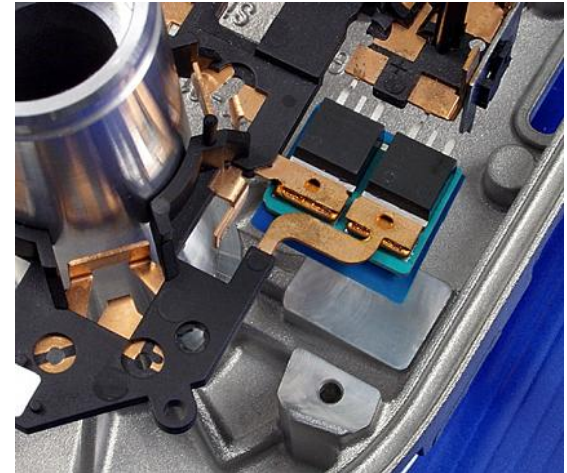
Sil-Pad = Thermal Interface Materials

- Standard Product Offerings
 - ✓ 0.8 - 3.0 W/m-K Performance Levels
 - ✓ Electrically Isolating & Non-Isolating
 - ✓ Silicone & Non-Silicone Solutions
- Typical Applications
 - ✓ Under Board with Thermal Vias
 - ✓ Interface Components & Heat-sink
- Design Considerations
 - ✓ Requires Firm Pressure
- Future Trends
 - ✓ Lower Cost Film Based Products
 - ✓ Higher Tear Resistance



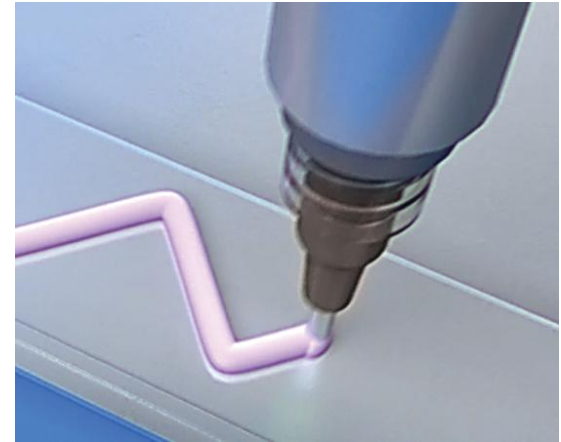
Hi-Flow = Phase Change Materials

- Standard Product Offerings
 - ✓ 1.0 – 3.0 W/m-K Performance Levels
 - ✓ Electrically Isolating & Non-Isolating
 - ✓ Supported and Unsupported Formats
 - ✓ Silicone, Non-Silicone & Tabulated Solutions
- Typical Applications
 - ✓ High Performance
- Design Considerations
 - ✓ Predictable Pressure
- Future Trends
 - ✓ High Reliability
 - ✓ Better Thermal Performance



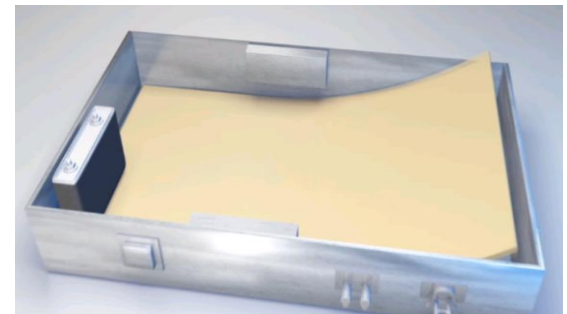
Gap Filler = Cure in Place Compounds

- Standard Product Offerings
 - ✓ 1.0 – 3.5 W/m-K Performance Levels
 - ✓ Two-Part Systems
 - ✓ Cure in Place or Remain Compliant
 - ✓ Silicone & Non-Silicone Solutions
- Typical Applications
 - ✓ High Volume
- Design Considerations
 - ✓ Dispensing Equipment
- Future Trends
 - ✓ Low Volatility
 - ✓ Higher Performance Levels



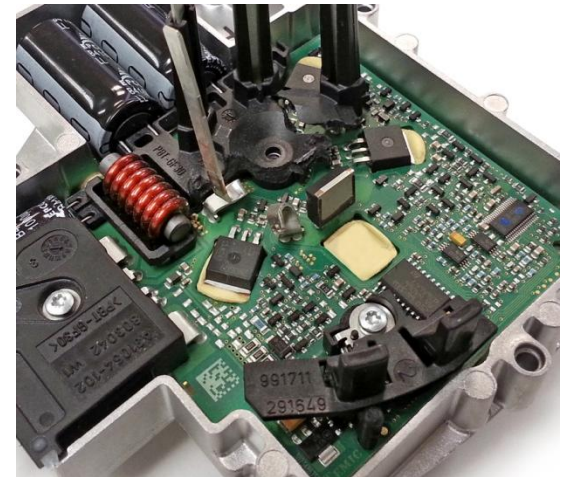
Gap Pad = Thick Compliant Gap Filling Sheets

- Standard Product Offerings
 - ✓ 0.8 – 5.0 W/m-K Performance Levels
 - ✓ Thickness up to 6.5 mm
 - ✓ Silicone & Non-Silicone Solutions
- Typical Applications
 - ✓ Mixed Topography
 - ✓ Power Storage
- Design Considerations
 - ✓ Pick & Place Equipment
- Future Trends
 - ✓ Robust Versions
 - ✓ Method of Placement



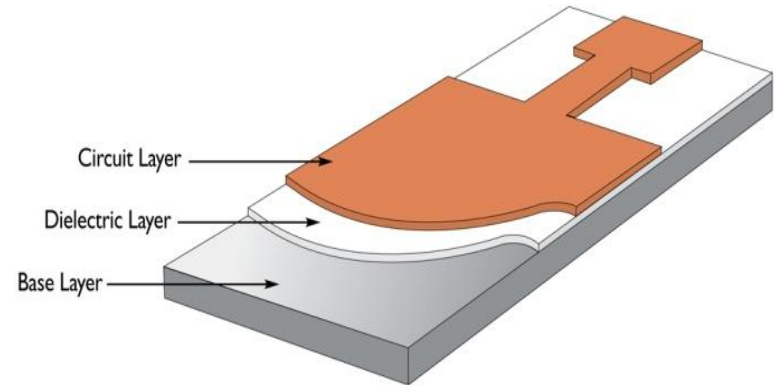
Liqui-Bond = Conductive Liquid Adhesives

- Standard Product Offerings
 - ✓ 1.0 – 3.0 W/m-K Performance Levels
 - ✓ One & Two Part Systems
 - ✓ Heat Cure
 - ✓ Silicone & Non-Silicone Solutions
- Typical Applications
 - ✓ Module Management
- Design Considerations
 - ✓ Dispensing Equipment
- Future Trends
 - ✓ Higher Temp Stability
 - ✓ Higher Performance Levels



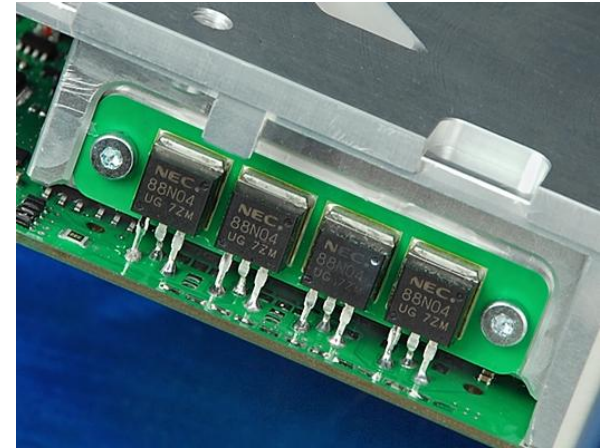
Thermal Clad = Insulated Metal Substrate

- Standard Product Offerings
 - ✓ 1.0 – 3.0 W/m-K Tc Performance
 - ✓ Dielectric types MP, HT, HPL & HRT30.20
 - ✓ Copper, Aluminum & Alternative Base Plates
 - ✓ Circuit foil weights 0.5oz to 10oz
- Typical Applications
 - ✓ LED Lighting
 - ✓ Automotive
 - ✓ Motor Control
 - ✓ Power Conversion



Thermal Clad = Insulated Metal Substrate

- ✓ Design Considerations
 - ✓ T-Clad Design Rules Differ from FR-4
- Future Trends
 - ✓ Improved Thermal & Electrical Performance Dielectrics
 - ✓ High Temp (MOT) Dielectrics
 - ✓ Highly Reflective Coating (>95%)



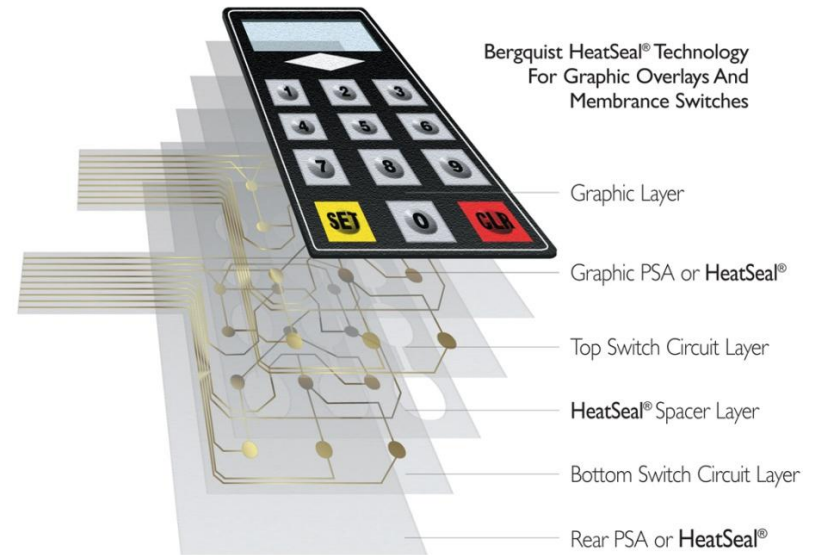
Bergquist Torrington = Cooling Systems

- Product Offerings
 - ✓ DWDI Blowers
 - ✓ Optimized system design
- Typical Applications
 - ✓ High density network equipment
- Design Considerations
 - ✓ Low acoustic noise
 - ✓ New architectures
- Future Trends
 - ✓ Scalable designs
 - ✓ Standard configurations



HeatSeal = Membrane Switches

- Standard Product Offerings
 - ✓ Membrane switch sealed against fluid ingress, ESD and pressure extremes
- Typical Applications
 - ✓ Medical & Dental
 - ✓ Pool & Spa
 - ✓ Military & Aerospace
 - ✓ Industrial
 - ✓ Food Equipment
- Design Considerations
 - ✓ Used in environments where maximum protection against cleaners, liquids, ESD and pressure extremes are critical



Summary

- We create highly engineered materials with the ability to tailor products to meet specific application requirements
- We use a creative and strategic process to understand and satisfy our customers' overall business requirements
- We are a global organization committed to quality service, open communication and technical expertise



Thank you!

For more information on The Bergquist Company,
please visit our website at:
www.bergquistcompany.com

