Thermal Interface Material

W.L. Gore & Associates introduces POLARCHIP&#153 thermal interface material. This highly compressible, thermally conductive material is ideally suited for filling the undesireable air gaps between heat generating devices on printed circuit boards (PCBs) and the heat sinks, heat spreaders, and metal chassis that are used to dissipate the heat. It provides an improvement over existing thermal gap pads because of its level of compressibility and ease of handling.
POLARCHIP thermal interface material is a fluropolymer composite that consists of an expanded polytetraflouroethylene (ePTFE) matrix filled with boron nitride (BN) particles. The low elastic modulus of the ePTFE matrix imparts softness, conformability, and compressibility to the composite, while the high thermal conductivity of the BN particles gives the composite its thermal transport characteristics. The reinforcing nature of the ePTFE matrix results in a composite that is physically robust, easy to handle, and does not require additional reinforcements. The highly compressive behavior, physical robustness, and good thermal transport characteristics yields a thermal interface material that is ideal for gap filling applications.
The material is ideal for gap-filling applications where the thickness of the gap is large or variable due to irregular surfaces (roughness, flatness, planarity, etc.), large tolerance stack-ups, or when contacting multiple devices. By using this soft, conformable, highly compressible material, contact is ensured between the heat sinks and the hot devices, while minimizing the stress placed on the components of the PCB. Common applications for this material are laptop computers, high speed telecommunications equipment, and wireless infrastructure equipment.
POLARCHIP CP7003 thermal interface material is recommended for applications that require between 10 to 40% compression, and POLARCHIP CP8000 thermal interface material is recommended for applications that require greater that 40% compression. Both materials can be supplied in sheet form or precision die-cuts. A variety of pressure sensitive adhesives (PSAs) are available and can be laminated to one side of the thermal interface to facilitate attachment. The selection of the most appropriate PSA will depend on the performance requirements of the intended application. The precision die-cuts are suitable for high volume automated assembly, and Gore offers automated assembly solutions for its thermal interface products.

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