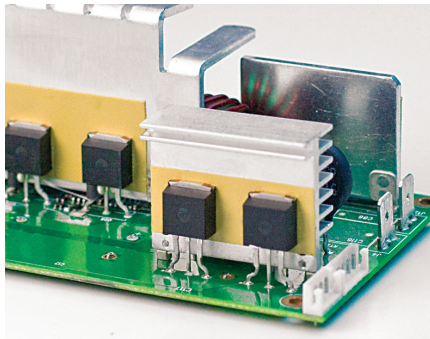


Bond-Ply[®] LMS-HD

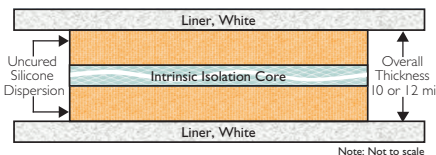
Laminate Material — Silicone, High Durability, Optional Lamination Methods

Features and Benefits

- TO-220 Thermal performance: 2.3°C/W at Initial Pressure Only lamination
- Exceptional dielectric strength because of the cured intrinsic isolation core
- Very low interfacial resistance
- 200 psi adhesion strength
- Continuous use of -60 to 180°C
- Eliminates mechanical fasteners



Bond-Ply LMS-HD is a thermally conductive heat curable laminating adhesive. The product consists of a high performance thermally conductive low modulus silicone compound coated on a fiberglass weave, and double lined with protective films. The low modulus silicone design effectively absorbs mechanical stresses induced by assembly-level CTE mismatch, shock and vibration while providing exceptional thermal performance (vs PSA technologies) and long-term integrity. Bond-Ply LMS-HD will typically be used for structurally adhering power components and PCBs to a heatsink.



Application Cleanliness

Industry standard cleaning practices should be followed to ensure repeatable bonding from component to component. Utilizing standard practices, Bergquist has demonstrated exceptional metal to metal bonding characteristics on untreated and anodized aluminum as well as metal to FR-4 for PC board attachment.

TYPICAL PROPERTIES OF BOND-PLY LMS-HD

PROPERTY	IMPERIAL VALUE	METRIC VALUE	TEST METHOD
Color	Yellow	Yellow	Visual
Reinforcement Carrier	Fiberglass	Fiberglass	—
Thickness (inch) / (mm)	0.010	0.254	ASTM D374
Continuous Use Temp (°C) / (°F)	-60 to 180	-76 to 356	—
ADHESION			
Lap Shear @ RT (psi) / (MPa)	200	1.4	ASTM D1002
ELECTRICAL		VALUE	TEST METHOD
Post-Cured Breakdown Voltage (kVac) (1)		5.0	ASTM D149
Breakdown Voltage (kVAC) (2)		4.0	ASTM D149
Flame Rating		V-O	U.L. 94
THERMAL			
Post-Cured Thermal Conductivity (W/m-K) (3)		1.4	ASTM D5470
THERMAL IMPEDANCE vs LAMINATION METHOD			
Lamination Pressure (75 psi) (4)		Constant	IPO
TO-220 Thermal Performance (°C/W)		2.1	2.3

1) The ASTM D149 test method on cured LMS-HD material. No pressure was applied to the LMS-HD during the cure cycle.
 2) The ASTM D149 test method on a TO-220 laminated at 75 psi for 30 seconds (IPO) with LMS-HD. Actual application dielectric performance will vary with primary dependence on consistent material handling of LMS-HD in the pre-cured or "green" state and applied pressure and time during the lamination process.
 3) The ASTM D5470 (Bergquist Modified) test procedure was used on post-cured LMS-HD material. The recorded value includes interfacial thermal resistance. These values are given for customer reference only.
 4) TO-220 Thermal Performance testing, per The Bergquist RD2010 specification for Laminates, was completed on laminated TO-220 assemblies. Lamination was completed at 75 psi for 30 seconds for "IPO" (Initial Pressure Only) and at a constant 75 psi during the lamination and curing process for "Constant". No additional pressure was applied during TO-220 thermal performance testing.

Typical Applications Include:

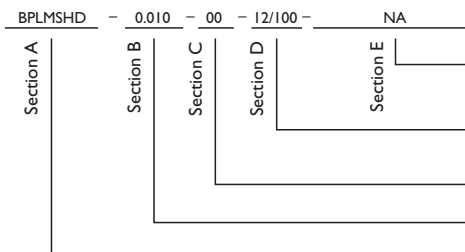
- Discrete semi-conductor packages bonded to heat spreader or heat sink

Configurations Available:

- Roll form
- Sheet form
- Die-cut parts

Shelf Life: Bond-Ply LMS-HD is a heat-cured material and should be stored in temperature controlled conditions. The recommended storage temperature range of 5-25°C should be used to maintain optimum characteristics for a 5-month shelf life.

Building a Part Number



Note: To build a part number, visit our website at www.bergquistcompany.com.

Standard Options

◀ example

NA = Selected standard option. If not selecting a standard option, insert company name, drawing number, and revision level.

1212 = 12" x 12" Sheets, 12/100 = 12" x 100' rolls

00 = No adhesive

Standard thicknesses available: 0.010", 0.012"

BPLMSHD = Bond-Ply LMS-HD Material



Henkel Bergquist Preferred Converter
 10135 Gottschalk Parkway
 Chagrin Falls, Ohio 44023
sales@rico-inc.com
 +1 440-543-9209

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