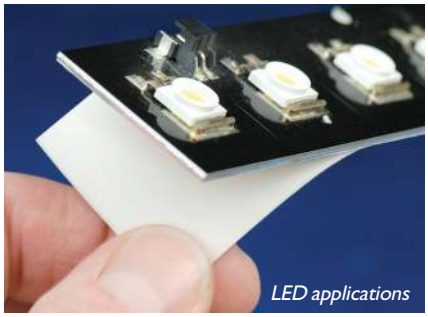
Bond-Ply® 450 PA

Thermally Conductive, Un-Reinforced, Pressure Sensitive Adhesive Tape

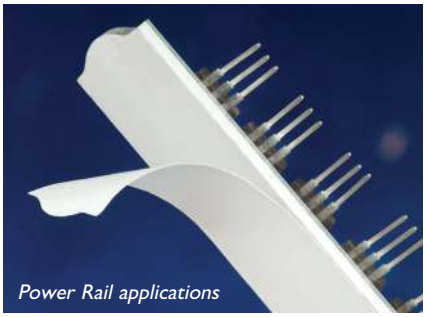
Features and Benefits

- Thermal impedance: 0.87°C-in²/W (@50 psi)
- Pre-applied and exclusively available on Bergquist T-Clad® circuits
- Eliminates future adhesive assembly requirements
- Withstands reflow processing



LED applications

Bond-Ply 450 PA is an un-reinforced, thermally conductive, pressure sensitive adhesive tape. The tape is exclusively available pre-applied to Bergquist T-Clad circuits and features a back side release liner. Bond-Ply 450 PA is designed to withstand the high temperatures associated with solder reflow without degradation of adhesion or liner release characteristics. The material is designed to attain high bond strength to a variety of "low energy" surfaces, including aluminum heat sinks and many plastics, while maintaining high bond strength with long term exposure to heat and high humidity.



Power Rail applications

TYPICAL PROPERTIES OF BOND-PLY 450 PA

PROPERTY	IMPERIAL VALUE	METRIC VALUE	TEST METHOD
Color	White	White	Visual
Thickness (inch) / (mm)	0.005	0.127	ASTM D374
Glass Transition (°F) / (°C)	-22	-30	ASTM E1356
Continuous Use Temp (°F) / (°C)	-22 to 248	-30 to 120	—
ADHESION			
Lap Shear @ RT (psi) / (MPa)	100	0.7	ASTM D1002
Lap Shear after 5 hr @ 100°C	200	1.4	ASTM D1002
Lap Shear after 2 min @ 200°C	200	1.4	ASTM D1002
ELECTRICAL		**VALUE**	**TEST METHOD**
Dielectric Breakdown Voltage (Vac)		3000	ASTM D149
Flame Rating		V-O	U.L.94
THERMAL			
Thermal Conductivity (W/m-K)		0.4	ASTM D5470

THERMAL PERFORMANCE vs PRESSURE					
Initial Assembly Pressure (psi for 5 seconds)	**10**	**25**	**50**	**100**	**200**
TO-220 Thermal Performance (°C/W) 0.005"	5.4	5.4	5.4	5.4	5.4
Thermal Impedance (°C-in²/W) (1)			0.87		

1) The ASTM D5470 test fixture was used. The recorded value includes interfacial thermal resistance. These values are provided for reference only. Actual application performance is directly related to the surface roughness, flatness and pressure applied (if any).

Typical Applications:

- Bergquist manufactured LED T-Clad circuits for architectural, automotive, medical, military, signage, signal, transportation, security, aircraft, portable and theatrical lighting
- Bergquist manufactured IMS "Power Rails" to heat sink
- Bergquist manufactured IMS custom circuits mounted to heat sinks and enclosures

Configurations Available:

- Pre-applied to Bergquist T-Clad circuits

Shelf Life: One year at room temperature or six months after exposure to solder reflow. Increasing the storage temperature may increase the adhesion of the protective liner to the Bond-Ply 450 PA material, reducing handling characteristics.

Temperature Exposure During Reflow: Bond-Ply 450 PA is designed to withstand one standard lead-free reflow profile typically utilized in the LED industry. For additional information, please contact Bergquist Product Management.

Bond-Ply®: U.S. Patent 5,090,484 and others.

THE BERGQUIST COMPANY www.bergquistcompany.com

The Bergquist Company - North American Headquarters
18930 West 78th Street
Chanhassen, MN 55317
Phone: 800-347-4572
Fax: 952-835-0430

The Bergquist Company - European Headquarters
Netherlands
Phone: 31-35-5380684
Fax: 31-35-5380295

The Bergquist Company - Asia Headquarters
Hong Kong
Ph: 852-2690-9296
Fax: 852-2690-3408