Technical Data Sheet

# BERGQUIST BOND PLY TBP 850

Known as BERGQUIST BOND-PLY 100
August 2021

## PRODUCT DESCRIPTION

Thermally Conductive, Fiberglass Reinforced Pressure Sensitive Adhesive Tape.

| | |
|---|---|
| **Technology** | Acrylic |
| Appearance | White |
| Reinforcement Carrier | Fiberglass |
| Total Thickness , ASTM D374 | 0.127, 0.203, 0.279 mm |
| **Application** | Thermal management, Thermally conductive adhesive |
| Operating Temperature Range | -40 to 120ºC |

## FEATURES AND BENEFITS

- Thermal impedance: 0.52°C.in² /W @ 50 psi
- High bond strength to a variety of surfaces
- Double-sided, pressure sensitive adhesive tape
- High performance, thermally conductive acrylic adhesive
- Can be used as an alternate of heat-cure adhesive, screw mounting or clip mounting

## TYPICAL APPLICATIONS

- Mount heat sink onto BGA graphic processor or drive processor
- Mount heat spreader onto power converter PCB or onto motor control PCB

## SHELF LIFE

The double-sided, pressure sensitive adhesive used in LOCTITE BERGQUIST BOND PLY® products requires the use of dual liners to protect the surfaces from contaminants.

The recommended shelf life for BERGQUIST BOND PLY TBP 850 is 6 months at a maximum continuous storage temperature of 35°C or 3-months at a maximum continuous storage temperature of 45°C, for maintenance of controlled adhesion to the liner.

The shelf life of the Bond Ply material, without consideration of liner adhesion (which is often not critical for manual assembly processing), is recommended at 12 months from date of manufacture at a maximum continuous storage temperature of 60°C.

## TYPICAL PROPERTIES

### Physical Properties

| | | |
|---|---|---|
| Temperature Coefficient of Resistance, ºC | | 200 |
| Elongation , 45º to warp and fill, ASTM D412,% | | 70 |
| Coefficient of Thermal Expansion, ASTM D 3386 , ppm | | 325 |
| Glass Transition Temperature, ASTM D1356, °C | | -30 |
| Flammability Rating, UL 94 | | V-0 |
| Tensile Strength, ASTM D412 | MPa | 6 |
| | (psi) | (900) |

### Adhesion Properties

Lap Shear Strength, ASTM D1002:

| | | |
|---|---|---|
| @ 25°C | MPa | 0.7 |
| | (psi) | (100) |
| After 5 hours @ 100ºC | MPa | 1.4 |
| | (psi) | (200) |
| After 2 minutes @ 200ºC | MPa | 1.4 |
| | (psi) | (200) |

| | |
|---|---|
| Static Dead Weight Shear Strength, PSTC#7, ºC | 150 |

### Electrical Properties

Dielectric Breakdown Voltage, ASTM D149:

| | |
|---|---|
| @ 0.005" (Vac) | 3,000 |
| @ 0.008" (Vac) | 6,000 |
| @ 0.011" (Vac) | 8,500 |

### Thermal Properties

| | |
|---|---|
| Thermal Conductivity , ASTM D5470, W/(m-K) | 0.8 |

### Thermal Impedance vs. Pressure

TO-220 Thermal Performance, ºC/W:

| | |
|---|---|
| @ 0.005": | |
| @ 10 psi | 5.17 |
| @ 25 psi | 4.87 |
| @ 50 psi | 4.49 |
| @ 100 psi | 4.18 |
| @ 200 psi | 4.1 |

| | |
|---|---|
| @ 0.008": | |
| @ 10 psi | 5.4 |
| @ 25 psi | 5.35 |
| @ 50 psi | 5.28 |
| @ 100 psi | 5.22 |
| @ 200 psi | 5.2 |
| @ 0.011": | |
| @ 10 psi | 6.59 |
| @ 25 psi | 6.51 |
| @ 50 psi | 6.51 |
| @ 100 psi | 6.5 |
| @ 200 psi | 6.4 |

Thermal Impedance, ASTM D5470, ºC-in²/W (1):

| | |
|---|---|
| @ 0.005": | |
| @ 10 psi | 0.56 |
| @ 25 psi | 0.54 |
| @ 50 psi | 0.52 |
| @ 100 psi | 0.5 |
| @ 200 psi | 0.5 |
| @ 0.008": | |
| @ 10 psi | 0.82 |
| @ 25 psi | 0.8 |
| @ 50 psi | 0.78 |
| @ 100 psi | 0.77 |
| @ 200 psi | 0.75 |
| @ 0.011": | |
| @ 10 psi | 1.03 |
| @ 25 psi | 1.02 |
| @ 50 psi | 1.01 |
| @ 100 psi | 1.0 |
| @ 200 psi | 0.99 |

I) 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.

## GENERAL INFORMATION

**For safe handling information on this product, consult the Safety Data Sheet, (SDS).**

### Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

## CONFIGURATIONS AVAILABLE

BERGQUIST BOND PLY TBP 850 are supplied in:

- Sheet form
- Roll form
- Die-Cut parts

### Conversions

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb/F
N/mm x 5.71 = lb/in
psi x 145 = N/mm²
MPa = N/mm²
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

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