Product Bulletin

Thermountâ

THERMOUNTâ RT™ Laminate and Prepreg

Containing Type 2.0N710, 3.0N710, 4.0N710 Nonwoven Aramid Reinforcement

For Printed Wiring Boards, Multichip Modules, and Electronic Interconnect Devices

THERMOUNTâ RT™ is the name applied to laminate and prepreg, manufactured by Licensed Laminators using DuPont Type N710 reinforcement, for printed wiring board and chip carrier applications. Three thicknesses of nonwoven 100% aramid reinforcement are available, Type 2.0N710, 3.0N710, and 4.0N710, enabling you to specify a wide range of dielectric thicknesses between 2 mil (50 micron) and 125 mil (3.13 mm) on 1 mil (25 micron) increments.

Printed wiring boards manufactured with THERMOUNTâ RT™ brand laminate and prepreg are well suited for high volume, commercial electronic applications which utilize high density interconnect technologies. THERMOUNTâ RT™ laminate and prepreg also support high performance interconnect methods in multichip modules and chip carrier packages. In response to customer requests, DuPont Advanced Fibers Systems has refined our traditional DuPont Type E-200 reinforcement, creating THERMOUNTâ RT™ for high Tg epoxy resins. The N710 nonwoven 100% aramid reinforcement provides significant improvements in peel strength, moisture absorption, and Z-axis expansion. Enhancements also were made in tensile strength and dimensional consistency.

Laminate and prepreg reinforced with THERMOUNTâ RT™ offers the processability of FR-4 with the other unique advantages of nonwoven aramid reinforcement including: low in-plane CTE; excellent dimensional stability; low dielectric constant; high-speed laser and plasma processability; thin, uniform light-weight reinforcement; and smooth laminate surfaces for fine-line imaging. These properties make THERMOUNTâ RT™ laminate and prepreg an excellent choice for applications which utilize laser and plasma formed microvia technology.

Printed Wiring Boards reinforced with THERMOUNTâ RT™ offer the following characteristics and benefits compared to Printed Wiring Boards reinforced with THERMOUNTâ (DuPont Type E-200)

- Composed of the same 100% aramid fiber and binder as E210, E220 and E230 reinforcement
- Lower moisture absorption
- Improved solder resistance during IC component assembly
- Higher peel strength with high Tg epoxy resins
- Improved dimensional consistency
- Lower Z-axis CTE
- Higher tensile strength
- THERMOUNTâ RT™ reinforced printed wiring boards maintain the valuable performance benefits of the original THERMOUNTâ :
    - High speed laser and plasma processable
    - Uniform dielectric thickness for controlled impedance applications
    - Available in 2, 3, 4 mil laminate pressed thickness

Available as both a laminate and prepreg from multiple Laminators worldwide

Typical Properties (not for Purchasing Specifications)

The following data are based on DuPont testing of limited production of this product and therefore may not represent the normal variations seen in continual and repetitive production. These numbers are typical average values with a high Tg epoxy resin at 53% resin content obtained from data developed in a DuPont laboratory. Consult with specific Licensed Laminators for detailed product specifications.

Typical Property Data

		2.0N710	3.0N710	4.0N710
Reinforcement				
Thickness	mils (microns)	1.90 (48)	2.85 (72)	3.80 (97)
Basis Weight	oz/yd2 (g/m^2)	0.91 (31)	1.46 (49)	2.00 (68)
Tensile Strength	lbs/in (kg/cm)	11.1 (2.0)	17.4 (3.1)	26.5 (4.7)
Equilibrium moisture	percent @ 55%RH	1.6	1.6	1.6
In a Laminate or Printed Wiring Board				
Thickness	mils (microns)	2.1 (53)	3.1 (79)	4.1 (104)
Peel Strength	lbs/in (kg/cm)	5.5 (1.0)	6.2 (1.1)	6.5 (1.2)
Dielectric Constant	@ 1MHz	3.9	3.9	3.9
Dimensional Stability	percent	0.02	0.02	0.02
In-plane CTE	ppm/°C	11.0	10.5	10.5
Z-axis CTE	ppm/°C	97	100	100

How to Order Printed Wiring Boards reinforced with THERMOUNTâ RT™ Laminate and Prepreg:

To gain the performance benefits associated with this new, improved DuPont nonwoven 100% aramid reinforcement, specify THERMOUNTâ RT™ laminate and prepreg as the base materials for your printed wiring board, multichip module, or chip carrier packages. The dielectric thickness between layers of copper circuitry should be specified in one mil (25 micron) increments. Contact specific laminate and prepreg suppliers for standard constructions, product designations and processing recommendations.

For further information and a list of current Licensed Laminators and Fabricators, contact:

DuPont Advanced Fibers Systems
THERMOUNTâ Laminate and Prepreg
Customer Inquiry Center
5401 Jefferson Davis Highway
Richmond, VA 23234, USA

Tel: (800) 453-8527 or (804) 383-4400
Fax: (800) 787-7086 or (804) 383-3963

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THERMOUNTâ Laminate and Prepreg
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CH1218 Le Grand Saconnex
Geneva, Switzerland

Tel: ++ 41-22-717-5508
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