

N7000-2HT LAMINATE

N7000-3 PREPREG

Toughened Polyimide Laminate & Prepreg

AGC

Your Dreams, Our Challenge

Benefits

- Polyimide Resin Chemistry
- Robust Thermal Stability and Reliability
- High Temp Tolerance and Chemical Resistance
- Designed for Use in Severe Conditions

Applications

- Backplanes
- Fine-Line, Surface-Mount and BGA Multilayers
- Direct Chip Attach
- Underhood Automotive
- Burn-in Boards



N7000-2 HT laminate and N7000-3 prepreg are a series of toughened polyimide material for use in high-reliability multilayers. This combined resin system provides excellent thermal performance, improved processing characteristics and is exceptional for use in a wide variety of applications that include fine geometry multilayer constructions and extreme reliability requirements.

Polyimide Resin Chemistry

- Robust thermal stability and reliability
- Toughened resin system
- High temperature tolerance

Excellent Reliability and Performance

- Withstands multiple thermal excursions
- T_g 260°C by DSC
- T-260 >120 minutes
- Low Z-Axis CTE
- Designed for use in severe conditions

Reliable Plated-through Holes

- Low Z-Axis CTE and toughened polyimide chemistry providing good dimensional stability

Reliable Processing

- Improved fracture resistance compared with traditional polyimide systems
- Reduced cure time compared to other traditional polyimide systems

Meets IPC-4101/40, /41 and /42 Specifications

N7000-2HT laminate has a UL 94 V-0 flame rating and N7000-3 prepreg has a UL 94 V-1 flame rating.

Complies with the old GIJ and GIL specifications

UL file number: E36295

| Properties | Conditions | Typical Value | Unit | Test Method |
|---------------------------------------|---|----------------------------|---|---------------------|
| Electrical Properties | | | | |
| Dielectric Constant | @ 2.5 GHz | 3.5 | | IPC-TM-650.2.5.5.5 |
| | @ 10 GHz | 3.5 | | |
| Dissipation Factor | @ 2.5 GHz | 0.009 | | |
| | @ 10 GHz | 0.009 | | |
| Volume Resistivity | C - 96 / 35 / 90 | 10 ⁷ | MΩ - cm | IPC-TM-650.2.5.17.1 |
| | E - 24 / 125 | 10 ⁷ | | |
| Surface Resistivity | C - 96 / 35 / 90 | 10 ⁷ | MΩ | IPC-TM-650.2.5.17.1 |
| | E - 24 / 125 | 10 ⁷ | | |
| Electric Strength | | 4.7x10 ⁴ (1200) | V/mm (V/mil) | IPC-TM-650.2.5.6.2 |
| Thermal Properties | | | | |
| *Glass Transition Temperature (Tg) | DSC(°C) | 260 | °C | IPC-TM-650.2.4.25c |
| Degradation Temperature (TGA) | Degradation Temp (TGA) (5% wt. loss) | 376 | °C | IPC-TM-650.2.4.24.6 |
| T-260 | Time to delamination @ 260°C | 120+ | minutes | IPC-TM-650.2.4.24.1 |
| Thermal Conductivity | | 0.45 | W/mK | ASTM E1461 |
| Mechanical Properties | | | | |
| Peel Strength | 1 oz (35μ) Cu After Solder Float | 1.31 (7.5) | N/mm (lbf/inch) | IPC-TM-650.2.4.8 |
| X / Y CTE | -40°C to + 125°C | 9 / 12 | ppm/°C | IPC-TM-650.2.4.41 |
| Z Axis Expansion (43% RC) | 50°C to 260°C | < 2.5 | % | IPC-TM-650.2.4.24 |
| Young's Modulus (X / Y) | | 21.1 / 22.2 (3.1 / 3.3) | GN/m ² (psi x 10 ⁶) | ASTM D3039 |
| Poisson's Ratios (X / Y) | | 0.146 / 0.153 | | |
| Chemical / Physical Properties | | | | |
| Moisture Absorption | | 0.35 | wt. % | IPC-TM-650.2.6.2.1 |

* DMA is the preferred method for measuring Tg - other methods may be less accurate.

- All test data provided are typical values and not intended to be specification values. For review of critical specification tolerances, please contact a company representative directly
- N7000-2HT can be manufactured in laminate thickness from 2 mil (0.05 mm) and up.
- N7000-2HT and N7000-3 are available in most common panel sizes.
- Please contact AGC for availability of any other constructions, copper weights and glass styles including very low profile copper and RTFOIL®

