

N8000

Cyanate Ester Laminate & Prepreg

Benefits

- High Thermal Performance
- Low Z-Axis Expansion
- Excellent Electrical Properties
- Supports Very High Signal Speeds

Applications

- Backplanes
- Fine-Line, Surface-Mount and BGA Multilayers
- MCM-Ls / Direct Chip Attach
- Underhood and Other Automotive
- Radomes and Secondary Aerospace Structures



N8000 is a high-Tg cyanate ester laminate and prepreg system that provides superior performance and product integrity and is ideal for board designs with higher layer counts, finer lines and spaces and larger panel sizes.

High Thermal Performance

- Tg of 300°C
- Low Z-axis expansion
- Suitable for high-layer count, sophisticated PCB designs
- Superior properties for high speed, high reliability and controlled impedance board applications

Superior Electrical Properties

- Supports signal speed capabilities not achievable through a standard epoxy or polyimide
- Low Dk and Df to meet high speed, low loss design requirements

Typical Cyanate Ester Processing

- 240 min press at 182°C and 200-300 psi

Meets UL 94V-0 and IPC-4101/71 Specifications

UL file number: E36295

Properties	Conditions	Typical Value	Unit	Test Method
Electrical Properties				
Dielectric Constant	@ 2.5 GHz	3.6		IPC-TM-650.2.5.5.5
	@ 10 GHz	3.5		
Dissipation Factor	@ 2.5 GHz	0.011		IPC-TM-650.2.5.5.5
	@ 10 GHz	0.011		
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		6.5x10 ⁴ (1650)	V/mm (V/mil)	IPC-TM-650.2.5.6.2
Thermal Properties				
*Glass Transition Temperature (Tg)	DMA (°C) (Tan d Peak)	300	°C	IPC-TM-650.2.4.24.2
Degradation Temperature (Td)	Degradation Temp (TGA) (5% wt. loss)	376	°C	IPC-TM-650.2.4.24.6
T-260	Time to delamination @ 260°C	60+	minutes	IPC-TM-650.2.4.24.1
Mechanical Properties				
Peel Strength	1 oz (35μ) Cu After Solder Float	1.40 (8.0)	N/mm (lbf/inch)	IPC-TM-650.2.4.8
X / Y CTE	-40°C to + 125°C	11 / 13	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)		20.4 / 20.4 (3.0 / 3.0)	GN/m ² (psi x 10 ⁶)	ASTM D3039
Poisson's Ratios (X / Y)		0.14 / 0.14		
Chemical / Physical Properties				
Moisture Absorption		< 0.05	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
- N8000 can be manufactured in laminate thickness from 2 mil (0.05 mm) and up.
- N8000 is 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®

