

N5000

BT Epoxy

Laminate & Prepreg

Benefits

- BT Resin Chemistry, Low Dk/Df
- Suitable for Lead-Free Processing
- BT / Epoxy Blend for Improved Processing
- CAF Resistant and Low Z-CTE

Applications

- Fine-Line and High Density PCBs
- Backplanes
- Surface-Mount and BGA Multilayers
- MCM-Ls / Direct Chip Attach
- Wireless Communications



N5000 BT epoxy laminate and prepreg provides superior electrical properties for high density aviation, aerospace and commercial boards which require close thickness tolerance and the ability to withstand the stress of multiple soldering excursions and repeated chemical exposure.

BT Resin Chemistry

- BT (bismaleimide triazine) provides low Dk and Df values and overall superior electrical properties

Excellent Reliability and Performance

- Suitable for lead-free assembly applications and designs
- Tg 185°C by DSC
- Low Dk and Df
- Reduced X/Y and Z-Axis expansion

CAF Resistant

- Low Z-CTE and proven CAF resistance provide long-term reliability

Wide Processing Latitude

- Unique BT / epoxy blend results in a wide processing latitude
- 90 min press at 190°C and 200-350 psi

Meets UL 94V-0 and IPC-4101/30 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	3.6		
Dissipation Factor	@ 2.5 GHz	0.014		
	@ 10 GHz	0.010		
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 ⁶	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)	DMA(°C) (Tan δ Peak)	220	°C	IPC-TM-650.2.4.24.3
Degradation Temperature (TGA)	Degradation Temp (TGA) (5% wt. loss)	334	°C	IPC-TM-650.2.3.40
T-260	Time to delamination @ 260°C	12+	minutes	IPC-TM-650.2.4.24.1
Thermal Conductivity		4 - 5	W/mK	ASTM E1461
Mechanical Properties				
Peel Strength	1 oz (35μ) Cu After Solder Float	1.56 (8.9)	N/mm (lbf/inch)	IPC-TM-650.2.4.8
X / Y CTE	-40°C to + 125°C	10 / 14	ppm/°C	IPC-TM-650.2.4.41
Z Axis Expansion (43% RC)	50°C to 260°C	3.8	%	IPC-TM-650.2.4.24
Young's Modulus (X / Y)		31.9 / 27.8 (4.7 / 4.1)	GN/m ² (psi x 10 ⁶)	ASTM D3039
Poisson's Ratios (X / Y)		0.16 / 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
- N5000 can be manufactured in laminate thickness from 2 mil (0.05 mm) and up.
- N5000 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®

