

Nelco N7000-2 V0

Toughened Polyimide Laminate & Prepreg

The Nelco N7000-2 V0 series is a next-generation high-Tg polyimide using a toughened resin chemistry to achieve a UL 94-V0 designation. This advanced material is designed for use in a wide variety of applications that include fine geometry multilayer constructions and extreme reliability.

Key Features

Polyimide resin chemistry

- Robust Thermal Stability and Reliability
- Toughened resin system
- High temperature tolerances

Lead-free assembly compatibility

- Withstands multiple thermal excursions
- Tg 250°C by DSC
- T₂₆₀ >30 minutes
- Low Z-Axis CTE

Supports current and previous military and industrial standards

- Meets UL 94V-0 and IPC-4101/40, /41 and /42 specifications
- Complies with the old GIJ and GIL military specifications

Reliable plated-through holes

- Low Z-Axis CTE providing good dimensional stability

Reliable processing

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

And Much More

- Vacuum laminated
- Available in a wide variety of constructions, copper weights and glass styles.
- All Nelco materials are RoHS compliant.



Applications

- Fine-Line Multilayers
- Backplanes
- Surface-Mount Multilayers
- BGA Multilayers
- Avionics
- Down-well Petroleum
- Burn-in Boards

Global Availability

Contact us worldwide:

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Park's UL file number: E36295

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Mechanical Properties	U.S. Units		Metric Units		Test Method
Peel Strength - 1 oz. (35 micron) Cu					
After Solder Float	5.8	lb/inch	1.001	N/mm	IPC-TM-650.2.4.8
At Elevated Temperature	5.2	lb/inch	0.91	N/mm	IPC-TM-650.2.4.8.2a
After Exposure to Process Solutions	5.7	lb/inch	0.98	N/mm	IPC-TM-650.2.4.8
X/Y CTE [-40°C to +125°C]	10 - 12	ppm/°C	10 - 12	ppm/°C	IPC-TM-650.2.4.41
Z Axis Expansion [50°C to 260°C]	1.7	%	1.7	%	IPC-TM-650.2.4.41
Young's Modulus (X/Y)	4.5/3.8	psi x 10 ⁶	30.6/25.9	GN/m ²	ASTM D3039
Poisson's Ratios (X/Y)	0.183/0.160		0.183/0.160		ASTM D3039
Thermal Conductivity	TBD	W/mK	TBD	W/mK	ASTM E1461
Specific Heat	TBD	J/gK	TBD	J/gK	ASTM E1461
Electrical Properties					
Dielectric Constant (50% resin content)					
@ 1 MHz (TFC/LCR Meter)	4.0		4.0		IPC-TM-650.2.5.5.3
@ 1 GHz (RF Impedance)	3.8		3.8		IPC-TM-650.2.5.5.9
@ 10 GHz (Stripline)	3.8		3.8		IPC-TM-650.2.5.5.5
Dissipation Factor (50% resin content)					
@ 1 MHz (TFC/LCR Meter)	0.009		0.009		IPC-TM-650.2.5.5.3
@ 10 GHz (Split Post Cavity)	0.010		0.010		
Volume Resistivity					
C - 96/35/90	10 ⁶	MΩ - cm	10 ⁶	MΩ - cm	IPC-TM-650.2.5.17.1
E - 24/125	10 ⁸	MΩ - cm	10 ⁸	MΩ - cm	IPC-TM-650.2.5.17.1
Surface Resistivity					
C - 96/35/90	10 ⁶	MΩ	10 ⁶	MΩ	IPC-TM-650.2.5.17.1
E - 24/125	10 ⁶	MΩ	10 ⁸	MΩ	IPC-TM-650.2.5.17.1
Electric Strength	1200	V/mil	4.7x10 ⁴	V/mm	IPC-TM-650.2.5.6.2
Dielectric Breakdown	>50	kV	>50	kV	IPC-TM-650.2.5.6
Arc Resistance	124	seconds	124	seconds	IPC-TM-650.2.5.1
Thermal Properties					
Glass Transition Temperature (T _g)					
DSC (°C)	250	°C	250	°C	IPC-TM-650.2.4.25c
TMA (°C)	243	°C	243	°C	IPC-TM-650.2.4.24c
Degradation Temp (TGA) (5% wt. loss)	390	°C	390	°C	IPC-TM-650.2.3.40
Pressure Cooker-60 min then solder dip @288°C until failure (max 10 min.)	Pass		Pass		IPC-TM-650.2.6.16 (modified)
T ₂₆₀	30+	minutes	30+	minutes	IPC-TM-650.2.4.24.1
T ₃₀₀	3.5	minutes	3.5	minutes	
Chemical/Physical Properties					
Moisture Absorption	0.32	wt. %	0.32	wt. %	IPC-TM-650.2.6.2.1
Methylene Chloride Resistance	0.04	% wt. chg.	0.04	% wt. chg.	IPC-TM-650.2.3.4.3
Density [50% resin content]	1.93	g/cm ³	1.93	g/cm ³	Internal Method

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