Park Electrochemical Nelco® N7000-2 HT/N7000-3 Toughened Polyimide Laminate and Prepreg

Category : Polymer , Thermoset , Polyimide, TS

Material Notes:

The Nelco N7000-2 HT laminate and N7000-3 prepreg are a series of toughened polyimide materials 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.Key Features and Benefits:Polyimide resin chemistryLead-free assembly compatibilitySupports current and previous military and industrial standardsReliable plated-through holesReliable processingApplications/Qualifications:Fine-Line MultilayersBackplanesSurface-Mount MultilayersBGA MultilayersDirect Chip AttachUnderhood AutomotiveBurn-in BoardsInformation provided by Park Electrochemical Corp.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Park-Electrochemical-Nelco-N7000-2-HTN7000-3-Toughened-Polyimide-Laminate-and-Prepreg.php

Physical Properties	Metric	English	Comments
Density	1.70 g/cc	0.0614 lb/in³	50% Resin Content; Internal Method
Water Absorption	0.35 %	0.35 %	IPC-TM-650.2.6.2.1

Mechanical Properties	Metric	English	Comments
Modulus of Elasticity	21.4 GPa	3100 ksi	X; ASTM D3039
	22.8 GPa	3300 ksi	Y; ASTM D3039
Poissons Ratio	0.146	0.146	X; ASTM D3039
	0.153	0.153	Y; ASTM D3039
Peel Strength	1.23 kN/m	7.00 pli	at elevated temperature; IPC-TM-650.2.4.8.2a
	1.23 kN/m	7.00 pli	after exposure to process solutions; IPC-TM-650.2.4.8
	1.31 kN/m	7.50 pli	after solder float; IPC-TM-650.2.4.8

Thermal Properties	Metric	English	Comments
CTE, linear	9.00 - 12.0 µm/m-°C @Temperature -40.0 - 125 °C	5.00 - 6.67 µin/in-°F @Temperature -40.0 - 257 °F	IPC-TM-650.2.4.41
Specific Heat Capacity	1.05 J/g-°C	0.250 BTU/lb-°F	ASTM E1461
Thermal Conductivity	0.450 W/m-K	3.12 BTU-in/hr-ft²-°F	ASTM E1461
Glass Transition Temp, Tg			TMA; IPC-TM-650.2.4.24c

Thermal Properties	Metric	English	Comments
	250 °C 260 °C	482 °F 500 °F	DSC; IPC-TM-650.2.4.25c
Decomposition Temperature	376 °C	709 °F	5% weight loss; TGA; IPC-TM-650.2.4.24.6
Flammability, UL94	V-0	V-0	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+13 ohm-cm	1.00e+13 ohm-cm	C - 96/35/90; IPC-TM-650.2.5.17.1
	1.00e+13 ohm-cm	1.00e+13 ohm-cm	E - 24/125; IPC-TM-650.2.5.17.1
Surface Resistance	1.00e+13 ohm	1.00e+13 ohm	C - 96/35/90; IPC-TM-650.2.5.17.1
	1.00e+13 ohm	1.00e+13 ohm	E - 24/125; IPC-TM-650.2.5.17.1
Dielectric Constant	3.5 @Frequency 2.50e+9 Hz	3.5 @Frequency 2.50e+9 Hz	Stripline; IPC-TM-650.2.5.5.5
	3.5 @Frequency 1.00e+10 Hz	3.5 @Frequency 1.00e+10 Hz	Stripline; IPC-TM-650.2.5.5.5
	3.5 @Frequency 1.00e+10 Hz	3.5 @Frequency 1.00e+10 Hz	Split Post Cavity
	3.8 @Frequency 1.00e+9 Hz	3.8 @Frequency 1.00e+9 Hz	RF Impedance; IPC-TM-650.2.5.5.9
Dielectric Strength	47.2 kV/mm	1200 kV/in	IPC-TM-650.2.5.6.2
Dielectric Breakdown	>= 50000 V	>= 50000 V	IPC-TM-650.2.5.6
Dissipation Factor	0.0090 @Frequency 1.00e+10 Hz	0.0090 @Frequency 1.00e+10 Hz	Split Post Cavity
	0.015 @Frequency 2.50e+9 Hz	0.015 @Frequency 2.50e+9 Hz	Stripline; IPC-TM-650.2.5.5.5
	0.015 @Frequency 1.00e+10 Hz	0.015 @Frequency 1.00e+10 Hz	Stripline; IPC-TM-650.2.5.5.5
Arc Resistance	100 sec	100 sec	IPC-TM-650.2.5.1

Descriptive Properties	Value	Comments
Methylene Chloride Resistance (% Weight Change)	<0.50	IPC-TM-650.2.3.4.3
Pressure Cooker	Pass	60 min then solder dip @288°C until failure (max 10 min.); IPC-TM-650.2.6.16 (modified)
T260 (minutes)	12+	IPC-TM-650.2.4.24.1
Z Axis Expansion (%)	<2.5	50°C to 260°C; IPC-TM-650.2.4.41

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