Park Electrochemical Nelco® N8000Q Cyanate Ester Epoxy Laminate and Prepreg

Category : Polymer , Thermoset , Epoxy

Material Notes:

The Nelco 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.Key Features and Benefits:High thermal performanceSelf adhesive bond to foam coresSuperior electrical propertiesTypical Cyanate Ester processingS-glass and Quartz optionsApplications:Fine-Line MultilayersBackplanesSurface-Mount MultilayersBGA MultilayersMCM-L'sDirect Chip AttachAutomotiveUnderhood AutomotiveWireless CommuncationsHigh Speed ComputingRadomes and Secondary Aerospace StructureInformation provided by Park Electrochemical Corp.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Park-Electrochemical-Nelco-N8000Q-Cyanate-Ester-Epoxy-Laminate-and-Prepreg.php

Physical Properties	Metric	English	Comments
Density	1.73 g/cc	0.0625 lb/in³	50% resin content

Mechanical Properties	Metric	English	Comments
Modulus of Elasticity	15.9 GPa	2300 ksi	Y; ASTM D3039
	17.9 GPa	2600 ksi	X; ASTM D3039
Poissons Ratio	0.16	0.16	X; ASTM D3039
	0.16	0.16	Y; ASTM D3039
Peel Strength	1.75 kN/m	10.0 pli	1 oz. Cu, after solder float; IPC-TM-650.2.4.8
	1.75 kN/m	10.0 pli	1 oz. Cu, after exposure to process solutions; IPC-TM-650.2.4.8

Thermal Properties	Metric	English	Comments
CTE, linear	70.0 µm/m-°C @Temperature 50.0 - 250 °C	38.9 µin/in-°F @Temperature 122 - 482 °F	Z-Axis, Alpha 1; IPC-TM-650.2.4.41
	374 µm/m-°C @Temperature 250 - 260 °C	208 µin/in-°F @Temperature 482 - 500 °F	Z-Axis, Alpha 2; IPC-TM-650.2.4.41
Specific Heat Capacity	0.9991 J/g-°C	0.2388 BTU/lb-°F	ASTM E1461
Thermal Conductivity	0.340 W/m-K	2.36 BTU-in/hr-ft²-°F	Z; ASTM E1461
	0.540 W/m-K	3.75 BTU-in/hr-ft²-°F	X-Y; ASTM E1461

Thermal Properties	Metric	English	Comments
Glass Transition Temp, Tg	240 °C	464 °F	TMA; IPC-TM-650.2.4.24c
	250 °C	482 °F	DSC; IPC-TM-650.2.4.25c
	300 °C	572 °F	DMA (Tan d Peak); IPC-TM-650.2.4.24.3

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	3.2 @Frequency 1.00e+10 Hz	3.2 @Frequency 1.00e+10 Hz	50% Resin Content; Stripline; IPC-TM-650.2.5.5.5
	3.3 @Frequency 1.00e+9 Hz	3.3 @Frequency 1.00e+9 Hz	50% Resin Content; RF Impedance; IPC-TM-650.2.5.5.9
Dielectric Strength	59.1 kV/mm	1500 kV/in	IPC-TM-650.2.5.6.2
Dielectric Breakdown	>= 50000 V	>= 50000 V	IPC-TM-650.2.5.6
Dissipation Factor	0.0060 @Frequency 1.00e+10 Hz	0.0060 @Frequency 1.00e+10 Hz	50% Resin Content; Stripline; IPC-TM-650.2.5.5.5
Arc Resistance	125 sec	125 sec	IPC-TM-650.2.5.1

Descriptive Properties	Value	Comments
Pressure Cooker	Pass	60 min then solder dip @288°C until failure (max 10 min.); IPC-TM-650.2.6.16 (modified)
T260 (minutes)	60+	IPC-TM-650.2.4.24.1
T288 (minutes)	30+	IPC-TM-650.2.4.24.1
Z Axis Expansion (%)	2.5	50-260°C; IPC-TM-650.2.4.41

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