Park Electrochemical Nelco® N5000 BT Epoxy Laminate and Prepreg

Category : Polymer , Thermoset , Epoxy

Material Notes:

The Nelco N5000 BT epoxy laminate and prepreg system provides superior electrical properties. The N5000 resin system wasoriginally developed for application specific use in high densitymilitary and commercial boards requiring not only close thicknesstolerance, but also the ability to withstand the stress of multiple soldering excursions and repeated chemical exposure.Key Features and Benefits:BT resin chemistryExcellent Reliability and PerformanceCAF ResistantWide processing latitudeApplications/Qualifications:Fine-Line MultilayersBackplanesSurface-Mount MultilayersBGA MultilayersMCM-LsDirect Chip AttachWireless CommunicationsHigh Density InterconnectsRoHS CompliantMeets IPC-4101/30 SpecificationsInformation provided by Park Electrochemical Corp.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Park-Electrochemical-Nelco-N5000-BT-Epoxy-Laminate-and-Prepreg.php

Physical Properties	Metric	English	Comments
Density	1.77 g/cc	0.0639 lb/in³	50% Resin Content; Internal Method
Water Absorption	<= 0.050 %	<= 0.050 %	IPC-TM-650.2.6.2.1

Mechanical Properties	Metric	English	Comments
Modulus of Elasticity	28.3 GPa	4100 ksi	Y; ASTM D3039
	32.4 GPa	4700 ksi	X; ASTM D3039
Poissons Ratio	0.14	0.14	Y; ASTM D3039
	0.16	0.16	X; ASTM D3039
Peel Strength	1.45 kN/m	8.30 pli	at elevated temperature; IPC-TM-650.2.4.8.2a
	1.56 kN/m	8.90 pli	after solder float; IPC-TM-650.2.4.8
	1.65 kN/m	9.40 pli	after exposure to process solutions; IPC-TM-650.2.4.8

Thermal Properties	Metric	English	Comments
CTE, linear	10.0 - 14.0 µm/m-°C @Temperature -40.0 - 125 °C	5.56 - 7.78 µin/in-°F @Temperature -40.0 - 257 °F	X/Y; IPC-TM-650.2.4.41
Glass Transition Temp, Tg	175 °C	347 °F	TMA; IPC-TM-650.2.4.24c
	185 °C	365 °F	DSC; IPC-TM-650.2.4.25c
	220 °C	428 °F	DMA (Tan d Peak); IPC-TM-650.2.4.24.3

Thermal Properties	Metric	English	Comments
Decomposition Temperature	334 °C	633 °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+12 ohm	1.00e+12 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	3.6 @Frequency 2.50e+9 Hz	3.6 @Frequency 2.50e+9 Hz	Stripline; IPC-TM-650.2.5.5.5
	3.6 @Frequency 1.00e+10 Hz	3.6 @Frequency 1.00e+10 Hz	Stripline; IPC-TM-650.2.5.5.5
	3.6 @Frequency 1.00e+10 Hz	3.6 @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	0.010 @Frequency 1.00e+10 Hz	0.010 @Frequency 1.00e+10 Hz	Split Post Cavity; IPC-TM-650.2.5.5.5
	0.014 @Frequency 2.50e+9 Hz	0.014 @Frequency 2.50e+9 Hz	Stripline
	0.014 @Frequency 1.00e+10 Hz	0.014 @Frequency 1.00e+10 Hz	Stripline; IPC-TM-650.2.5.5.5
Arc Resistance	118 sec	118 sec	IPC-TM-650.2.5.1

Descriptive Properties	Value	Comments
Methylene Chloride Resistance (% Weight	0.7	

Descriptive Properties	Value	Comments
Change)		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 (%)	3.8	50°C to 260°C; IPC-TM-650.2.4.41

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