

Park Electrochemical Nelco® N4000-11 BC® Buried Capacitance™ Epoxy Laminate and Prepreg

Category : Polymer , Thermoset , Epoxy

Material Notes:

The Nelco® N4000-11 is a CAF resistant, high Tg (175° C by DSC) multifunctional epoxy dielectric substrate. This material is formulated to provide the PWB manufacturer and OEM with vastly improved thermal, mechanical, and electrical performance in lead-free assembly and high layer count, sophisticated PWB designs. The Nelco N4000-11 BC® is offered as a buried capacitance solution, offering a greater degree of design freedom for smaller, more reliable assemblies. Key Features and Benefits: Tg >175°C, thermal stability and moisture resistance, CAF Resistant, Low Z-axis expansion, Dicyandiamide (DICY) free, proprietary resin chemistry, Superior electrical properties, Buried Capacitance Solution, Optimized FR-4 processing. Applications/Qualifications: High Density Interconnects, Lead-Free Assembly Substrate, Large Format Backplanes, Tight Tolerance Via to Via Applications, High I / O Count BGA Substrates, Extreme Layer count Multilayers, Lead-Free DCA Applications, High Temperature Underhood Automotive, Telecommunications Infrastructure, Sophisticated Data Storage Applications, RoHS Compliant, Meets IPC-4101/28, /83, /98, /99 Specifications. Information provided by Park Electrochemical Corp.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Park-Electrochemical-Nelco-N4000-11-BC-Buried-Capacitance-Epoxy-Laminate-and-Prepreg.php

Physical Properties	Metric	English	Comments
Density	1.96 g/cc	0.0708 lb/in ³	50% Resin Content; Internal Method
Water Absorption	0.15 %	0.15 %	IPC-TM-650.2.6.2.1

Mechanical Properties	Metric	English	Comments
Peel Strength	1.23 kN/m	7.00 pli	at elevated temperature; IPC-TM-650.2.4.8.2a
	1.58 kN/m	9.00 pli	after exposure to process solutions; IPC-TM-650.2.4.8
	1.58 kN/m	9.00 pli	after solder float; IPC-TM-650.2.4.8

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	1.21 - 1.38 J/g-°C	0.290 - 0.330 BTU/lb-°F	ASTM E1461-92
Thermal Conductivity	0.401 - 0.599 W/m-K	2.78 - 4.16 BTU-in/hr-ft ² -°F	ASTM E1461-92
Glass Transition Temp, Tg	170 °C	338 °F	TMA; IPC-TM-650.2.4.24c
	>= 175 °C	>= 347 °F	DSC; IPC-TM-650.2.4.25c
Decomposition Temperature	345 °C	653 °F	5% weight loss; TGA; IPC-TM-650.2.4.24.6
Flammability, UL94	V-0	V-0	

Electrical Properties	Metric	English	Comments
Dielectric Constant	3.5	3.5	RF Impedance; IPC-TM-650.2.5.5.9
	@Frequency 1.00e+9 Hz	@Frequency 1.00e+9 Hz	
	3.5	3.5	Stripline; IPC-TM-650.2.5.5.5
	@Frequency 2.50e+9 Hz	@Frequency 2.50e+9 Hz	
	3.7	3.7	TFC/LCR Meter; IPC-TM-650.2.5.5.3
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Strength	51.2 kV/mm	1300 kV/in	IPC-TM-650.2.5.6.2
Dissipation Factor	0.015	0.015	Stripline; IPC-TM-650.2.5.5.5
	@Frequency 2.50e+9 Hz	@Frequency 2.50e+9 Hz	
	0.018	0.018	TFC/LCR Meter; IPC-TM-650.2.5.5.3
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Descriptive Properties	Value	Comments
Methylene Chloride Resistance (% Weight Change)	0.8	IPC-TM-650.2.3.4.3
T260 (minutes)	30	IPC-TM-650.2.4.24.1

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