

Park Electrochemical Nelco® N4000-13 EP™ BC® Buried Capacitance™, High-Speed Multifunctional Epoxy Laminate and Prepreg

Category : Polymer , Thermoset , Epoxy

Material Notes:

Nelco N4000-13 EP™ is an enhanced epoxy resin system engineered for today's leadfree requirements where multiple solder reflow at temperatures approaching 260°C are required. N4000-13 EP provides enhanced thermal reliability without compromising the electrical and signal loss properties that have made the Nelco N4000-13 product family the industry standard for demanding high speed / low loss designs. The Nelco N4000-13 BC® is offered as a buried capacitance solution, offering a greater degree of design freedom for smaller, more reliable assemblies. Key Features and Benefits: Reliability through multiple lead-free excursions Tg >210°C, outstanding thermal, electrical and signal loss properties CAF Resistant Buried Capacitance Solution Proprietary advanced resin technology High-Tg FR-4 processing Available in a variety of constructions Applications/Qualifications: High Density Interconnects Fine-Line Multilayers Backplanes Surface-Mount Multilayers BGA Multilayers MCM-Ls CSP Attachment Wireless Communications Infrastructure High Speed Services High Speed Storage Networks Internet Switching / Routing Systems Information provided by Park Electrochemical Corp.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Park-Electrochemical-Nelco-N4000-13-EP-BC-Buried-Capacitance-High-Speed-Multifunctional-Epoxy-Laminate-and-Prepreg.php

Physical Properties	Metric	English	Comments
Density	1.77 g/cc	0.0639 lb/in ³	50% Resin Content; Internal Method
Water Absorption	0.10 %	0.10 %	IPC-TM-650.2.6.2.1

Mechanical Properties	Metric	English	Comments
Peel Strength	1.31 kN/m	7.50 pli	after solder float; IPC-TM-650.2.4.8
	1.42 kN/m	8.10 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

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	1.21 J/g-°C	0.290 BTU/lb-°F	ASTM E1461
Thermal Conductivity	0.350 W/m-K	2.43 BTU-in/hr-ft ² -°F	ASTM E1461
Glass Transition Temp, Tg	200 °C	392 °F	TMA; IPC-TM-650.2.4.24c
	210 °C	410 °F	DSC; IPC-TM-650.2.4.25c
	240 °C	464 °F	DMA (Tan δ Peak); IPC-TM-650.2.4.24.3
Decomposition Temperature	350 °C	662 °F	5% weight loss; TGA; IPC-TM-650.2.4.24.6

Thermal Properties	Metric	English	Comments
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Electrical Properties	Metric	English	Comments
Dielectric Constant	3.2	3.2	Stripline; IPC-TM-650.2.5.5.5
	@Frequency 1.00e+10 Hz	@Frequency 1.00e+10 Hz	
	3.3	3.3	RF Impedance; IPC-TM-650.2.5.5.9
	@Frequency 1.00e+9 Hz	@Frequency 1.00e+9 Hz	
	3.3	3.3	Split Post Cavity
	@Frequency 2.50e+9 Hz	@Frequency 2.50e+9 Hz	
Dielectric Strength	47.2 kV/mm	1200 kV/in	IPC-TM-650.2.5.6.2
Dissipation Factor	0.0080	0.0080	Split Post Cavity
	@Frequency 2.50e+9 Hz	@Frequency 2.50e+9 Hz	
	0.0090	0.0090	Stripline; IPC-TM-650.2.5.5.5
	@Frequency 1.00e+10 Hz	@Frequency 1.00e+10 Hz	

Descriptive Properties	Value	Comments
Methylene Chloride Resistance (% Weight Change)	0.7	IPC-TM-650.2.3.4.3
T260 (minutes)	>30	IPC-TM-650.2.4.24.1

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