

Park Electrochemical Nelco® N5000-30/32 BT Epoxy Package

Category : Polymer , Thermoset , Epoxy

Material Notes:

The Nelco N5000-30 prepreg and N5000-32 laminate BT epoxy materials are designed specifically to meet or exceed new and emerging chip packaging requirements. The primary applications of these materials include high performance interconnects that form the circuitry inside plastic BGAs, PBGAs and LGAs. Key Features and Benefits: BT resin chemistry, Excellent Reliability and Performance, Chip Packaging Options, Meets JEDEC Standards, Wide processing latitude. Applications/Qualifications: BGA Multilayers, PBGA, LPGA, GPCMC, IAMCM, LsDirect Chip Attach, JEDEC Conforming Packages, RoHS Compliant, Meets IPC-4101/30 Specifications. Information provided by Park Electrochemical Corp.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Park-Electrochemical-Nelco-N5000-3032-BT-Epoxy-Package.php

Physical Properties	Metric	English	Comments
Water Absorption	<= 0.050 %	<= 0.050 %	IPC-TM-650.2.6.2.1

Mechanical Properties	Metric	English	Comments
Modulus of Elasticity	22.8 GPa	3300 ksi	Y; ASTM D3039
	23.4 GPa	3400 ksi	X; ASTM D3039
Poissons Ratio	0.21	0.21	X; ASTM D3039
	0.21	0.21	Y; ASTM D3039
Shear Modulus	9.42 - 9.67 GPa	1370 - 1400 ksi	Calculated
Peel Strength	1.53 kN/m	8.70 pli	at elevated temperature; IPC-TM-650.2.4.8.2a
	1.61 kN/m	9.20 pli	after solder float; IPC-TM-650.2.4.8

Thermal Properties	Metric	English	Comments
CTE, linear	14.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	7.78 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	IPC-TM-650.2.4.41
	@Temperature -40.0 - 125 $^\circ\text{C}$	@Temperature -40.0 - 257 $^\circ\text{F}$	
Glass Transition Temp, Tg	205 $^\circ\text{C}$	401 $^\circ\text{F}$	DMA (Tan d Peak); IPC-TM-650.2.4.24.3
Decomposition Temperature	344 $^\circ\text{C}$	651 $^\circ\text{F}$	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+15 ohm-cm	1.00e+15 ohm-cm	C - 96/35/90; IPC-TM-650.2.5.17.1

Electrical Properties	Metric	English	Comments
Surface Resistance	1.00e+14 ohm	1.00e+14 ohm	IPC-TM-650.2.5.17.1
Dielectric Constant	4.1	4.1	RF Impedance; IPC-TM-650.2.5.5.9
	@Frequency 1.00e+9 Hz	@Frequency 1.00e+9 Hz	
	4.4	4.4	TFC/LCR Meter; IPC-TM-650.2.5.5.3
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Strength	68.9 kV/mm	1750 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	0.0090	TFC/LCR Meter; IPC-TM-650.2.5.5.3
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Arc Resistance	145 sec	145 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)	12+	IPC-TM-650.2.4.24.1
Z Axis Expansion (%)	3.6	50°C to 260°C; IPC-TM-650.2.4.41

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