Arlon MULTICLAD™ HF Halogen-Free Low-Loss Laminate and Prepreg System

Category : Polymer , Thermoset

Material Notes:

MULTICLAD™ HF represents the next generation low-loss thermoset and prepreg system for high-speed and high-frequency printed circuit boards. This technology combines a low-loss, high reliability thermoset resin system with non-brominated flame retardant system to create a material that is great in terms of electrical performance, durability and cost.First generation environmentally friendly laminate system with competitive Insertion Loss and Loss Tangent (Df < 0.005) for High Frequency applicationsNon-PTFE Formulation meets standard lead-free process requirements, while maintaining low-halogen content per current industry standardsImproved thermal robustness cover competing low-loss thermoset materials for better device reliability and performance consistency over timeLow Thermal Expansion and High Glass Transition Temperature minimizes potential for PTH failures and improves operating reliabilityLow moisture absorption for improved processing and consistent performanceDecomposition temperature > 350°C is ideally suited for lead-free solder processingLow TCEr (temperature coefficient of the dielectric) minimizes electrical phase variation with temperatureCertified to UL flammability requirements of UL-94 V0Typical Applications:High-Speed Digital backplanes and server boardsRF Power Amplifier motherboardsSatellite receivers, LNB converters, and other Wireless devicesSemiconductor burn-in-boards and other high speed, high reliability applicationsThis data represents typical values for the production material and should not be used as material specifications.Information provided by ARLON Silicone Technologies Division.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Arlon-MULTICLAD-HF-Halogen-Free-Low-Loss-Laminate-and-Prepreg-System.php

Physical Properties	Metric	English	Comments
Density	1.70 g/cc	0.0614 lb/in³	ASTM D792 Method A
Water Absorption	0.10 %	0.10 %	IPC TM-650 2.6.2.1

Mechanical Properties	Metric	English	Comments
Tensile Strength	68.9 MPa	10000 psi	Cross; IPC TM-650 2.4.18.3
	101 MPa	14700 psi	Machine; IPC TM-650 2.4.18.3
Modulus of Elasticity	20.7 GPa	3000 ksi	IPC TM-650 2.4.4
Flexural Strength	223 MPa	32300 psi	Cross; IPC TM-650 2.4.18.3
	273 MPa	39600 psi	Machine; IPC TM-650 2.4.18.3
Compressive Modulus	2.92 GPa	424 ksi	ASTM D3410
Poissons Ratio	0.28	0.28	x,y; ASTM D3039
Peel Strength	1.40 kN/m	8.00 pli	To Copper (1 oz/35 micron); After Process Solutions; IPC TM-650 2.4.8
	1.49 kN/m	8.50 pli	To Copper (1 oz/35 micron); At Elevated Temperatures; IPC TM-650 2.4.8.2

Mechanical Properties	Metric	English	Comments
	1.58 kN/m	9.02 pli	1 oz (1 oz/35 micron); After Thermal Stress; IPC TM-650 2.4.8

Thermal Properties	Metric	English	Comments
CTE, linear	14.0 - 16.0 µm/m-°C	7.78 - 8.89 µin/in-°F	x,y direction; IPC TM-650 2.4.41
CTE, linear, Transverse to Flow	20.0 µm/m-°C @Temperature <=190 °C	11.1 µin/in-°F @Temperature <=374 °F	z (< Tg); IPC TM-650 2.4.24
	150 µm/m-°C @Temperature >=190 °C	83.3 µin/in-°F @Temperature >=374 °F	z (> Tg); IPC TM-650 2.4.24
Thermal Conductivity	0.640 W/m-K	4.44 BTU-in/hr-ft²-°F	ASTM E1461
Glass Transition Temp, Tg	190 °C	374 °F	TMA; IPC TM-650 2.4.24
	205 °C	401 °F	DSC; IPC TM-650 2.4.25
Decomposition Temperature	390 °C	734 °F	Initial; IPC TM-650 2.3.41
	432 °C	810 °F	5 percent; IPC TM-650 2.3.41
Flammability, UL94	V-0	V-0	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.40e+14 ohm-cm	1.40e+14 ohm-cm	C96/35/90; IPC TM-650 2.5.17.1
	5.00e+14 ohm-cm	5.00e+14 ohm-cm	E24/125; IPC TM-650 2.5.17.1
Surface Resistance	3.00e+13 ohm	3.00e+13 ohm	C96/35/90; IPC TM-650 2.5.17.1
	6.00e+13 ohm	6.00e+13 ohm	E24/125; IPC TM-650 2.5.17.1
Dielectric Constant	3.7 @Frequency 1.00e+9 Hz	3.7 @Frequency 1.00e+9 Hz	IPC TM-650 2.5.5.5
	3.75 @Frequency 1.00e+6 Hz	3.75 @Frequency 1.00e+6 Hz	IPC TM-650 2.5.5.3
Dielectric Strength	39.4 kV/mm	1000 kV/in	IPC TM-650 2.5.6.2
Dielectric Breakdown	36500 V	36500 V	IPC TM-650 2.5.6
Dissipation Factor	0.0040 @Frequency 1.00e+6 Hz	0.0040 @Frequency 1.00e+6 Hz	IPC TM-650 2.5.5.3

Electrical Properties	Metric	English	Comments
	0.0045	0.0045	
	@Frequency 1.00e+9 Hz	@Frequency 1.00e+9 Hz	IPC TM-650 2.5.5.5
Arc Resistance	190 sec	190 sec	IPC TM-650 2.5.1

Descriptive Properties	Value	Comments
IPC Delamination - T260 (minutes)	> 60	IPC TM-650 2.4.24.1
IPC Delamination - T288 (minutes)	> 60	IPC TM-650 2.4.24.1
IPC Delamination - T300 (minutes)	> 60	IPC TM-650 2.4.24.1
Temperature Coefficient of Dielectric (ppm/°C)	75	IPC TM-650 2.5.5.5; at 10 GHz, 0-140°C
Z-Axis Expansion (%)	1.2	IPC TM-650 2.4.24 (50-260°C)

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China