



P95/P25

Polyimide-based Prepreg and Laminate

Isola offers a product line of polyimide-based prepreg (P25) and core material (P95) for high temperature printed circuit applications.

These products consist of an HB flammability rated polyimide resin system suitable for military, commercial or industrial electronic applications requiring superior performance and the utmost in thermal properties. These products utilize a polyimide and thermoplastic blend resin, fully cured without the use of MDA (Methylenedianiline). This results in a polymer with a high Tg without the characteristic difficulties of brittleness and low initial bond strength associated with traditional thermoset polyimides.

Product Attributes

High Thermal Reliability , Polyimide

Typical Market Applications

Aerospace & Defense , Automotive & Transportation

ORDERING INFORMATION:

Contact your local sales representative or visit www.isola-group.com for further information.

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High Thermal Reliability

Data Sheet

Tg 260°C

Td 416°C

Dk 3.76

Df 0.017

IPC-4101 - /40 /41

UL - File Number E41625

Last Updated September 7, 2017
Revision No: 5

Product Features

- Industry Recognition
 - UL File Number: E41625
 - RoHS Compliant
- Performance Attributes
 - Lead-free assembly compatible
 - 6x 260°C reflow capable
- Processing Advantages
 - Via filling capability
 - Multiple reflow capable
 - Multiple lamination cycles

Product Availability

- Standard Material Offering: Laminate
 - 2 to 125 mil (0.05 to 3.2 mm)
 - Available in full size sheet or panel form
- Copper Foil Type
 - HTE Grade 3
 - RTF (Reverse Treat Foil)
- Copper Weight
 - ½ to 3 oz (18 to 105 µm) available
 - Heavier copper available
 - Thinner copper foil available
- Standard Material Offering: Prepreg
 - Roll or panel form
 - Tooling of prepreg panels
- Glass Fabric Availability
 - E-glass

P95/P25 Typical Values

Last Updated Sep 7, 2017

Property	Typical Value	Units	Test Method	
		Metric (English)	IPC-TM-650 (or as noted)	
Glass Transition Temperature (Tg) by DSC	260	°C	2.4.25C	
Decomposition Temperature (Td) by TGA @ 5% weight loss	416	°C	2.4.24.6	
Time to Delaminate by TMA (Copper removed)	A. T260 B. T288	60	Minutes	2.4.24.1
Z-Axis CTE	A. Pre-Tg B. 50 to 260°C, (Total Expansion)	55 1.5	ppm/°C %	2.4.24C
X/Y-Axis CTE	Pre-Tg	13/14	ppm/°C	2.4.24C
Thermal Conductivity	0.4	W/mK	ASTM E1952	
Thermal Stress 10 sec @ 288°C (550.4°F)	A. Unetched B. Etched	Pass	Pass Visual	2.4.13.1
Dk, Permittivity	A. @ 100 MHz	3.83	-	2.5.5.9
	B. @ 500 MHz	3.80		2.5.5.9
	C. @ 1 GHz	3.78		2.5.5.9
	D. @ 2 GHz	3.76		Bereskin Stripline
	E. @ 5 GHz	3.73		Bereskin Stripline
	F. @ 10 GHz	3.73		Bereskin Stripline
Df, Loss Tangent	A. @ 100 MHz	0.0135	-	2.5.5.9
	B. @ 500 MHz	0.0151		2.5.5.9
	C. @ 1 GHz	0.0172		2.5.5.9
	D. @ 2 GHz	0.0179		Bereskin Stripline
	E. @ 5 GHz	0.0188		Bereskin Stripline
	F. @ 10 GHz	0.021		Bereskin Stripline
Volume Resistivity	A. After moisture resistance	3.0 x 10 ⁸	MΩ-cm	2.5.17.1
	B. At elevated temperature	7.0 x 10 ⁸		
Surface Resistivity	A. After moisture resistance	3.0 x 10 ⁶	MΩ	2.5.17.1
	B. At elevated temperature	2.0 x 10 ⁸		
Dielectric Breakdown	>55	kV	2.5.6B	
Arc Resistance	130	Seconds	2.5.1B	
Electric Strength (Laminate & laminated prepreg)	44 (1100)	kV/mm (V/mil)	2.5.6.2A	
Comparative Tracking Index (CTI)	2 (250-399)	Class (Volts)	UL 746A ASTM D3638	
Peel Strength	A. Low profile copper foil and very low profile copper foil all copper foil >17 μm [0.669 mil]	1.14 (6.5)	N/mm (lb/inch)	2.4.8C
	B. Standard profile copper	1.25 (7.0)		2.4.8.2A
	1. After thermal stress	1.25 (7.0)		2.4.8.3
	2. At 125°C (257°F)	1.14 (6.5)		2.4.8.3
	3. After process solutions			
Flexural Strength	A. Length direction	58,700	ksi	2.4.4B
	B. Cross direction	66,200		
Tensile Strength	A. Length direction	54,540	ksi	ASTM D3039
	B. Cross direction	36,111		
Young's Modulus	A. Length direction	3892	ksi	ASTM D790-15e2
	B. Cross direction	3490		
Poisson's Ratio	A. Length direction	0.187	-	ASTM D3039
	B. Cross direction	0.164		
Moisture Absorption	0.5	%	2.6.2.1A	
Flammability (Laminate & laminated prepreg)	HB	Rating	UL 94	
Max Operating Temperature	130	°C	UL 796	

The data, while believed to be accurate and based on analytical methods considered to be reliable, is for information purposes only. Any sales of these products will be governed by the terms and conditions of the agreement under which they are sold.

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