



P25N Polyimide-based No Flow Prepreg

Isola offers a **P25N** product line of polyimide-based no flow prepreg materials for high temperature printed circuit applications. These products consist of a 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 Methylenedianiline (MDA). 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.

www.isola-group.com/products/P25N

ORDERING INFORMATION:

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

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High Performance

P25N

Data Sheet

Tg 250, Td 383
Dk 3.76, Df 0.017
/40 /41 /42

Features

- High Thermal Performance
 - ▶ Tg: 250°C (TMA)
 - ▶ Greater thermal performance over competitive products with very high epoxy content
- T260: 60 minutes
- T288: 60 minutes
- RoHS Compliant
- Maintains Bond Strength at High Temperature
- Tough Resin System
 - ▶ Improved processing due to less brittleness
 - ▶ Less delamination from machining
- Non-MDA (Methylenedianiline) Chemistry
 - ▶ Meets all OSHA 1910.1050 requirements
- Halogen free
- Prepreg Standard Availability
 - ▶ Roll or panel form
 - ▶ Tooling of prepreg panels available
- Glass Fabric Availability
 - ▶ Standard E-glass
- Industry Approvals
 - ▶ IPC-4101C: /40 /41 /42
 - ▶ UL – File Number E41625

P25N Specifications

Property		Typical Values			
		Typical Value	Specification	Units	Test Method
				Metric (English)	IPC-TM-650 (or as noted)
Glass Transition Temperature (Tg) by DSC		250 (Full Cure)	170-200	°C	2.4.25
Decomposition Temperature (Td) by TGA @ 5% weight loss		383	–	°C	ASTM D3850
T260		60	–	Minutes	ASTM D3850
T288		60	–	Minutes	ASTM D3850
CTE, Z-axis	A. Pre-Tg	55	AABUS	ppm/°C	2.4.24
	B. Post-Tg	TBD	–		
CTE, X-, Y-axes	A. Pre-Tg	13/14	AABUS	ppm/°C	2.4.24
	B. Post-Tg	14/17	–		
Z-axis Expansion (50-260°C)		–	–	%	2.4.24
Thermal Conductivity		0.4	–	W/mK	ASTM D5930
Thermal Stress 10 sec @ 288°C (550.4°F)	A. Unetched	Pass	Pass Visual	Rating	2.4.13.1
	B. Etched				
Dk, Permittivity (Laminate & prepreg as laminated)	A. @ 100 MHz (HP4285A)	3.90	5.4	–	2.5.5.3
	B. @ 1 GHz (HP4291A)	3.95	–		2.5.5.9
	C. @ 2 GHz (Bereskin Stripline)	3.76	–		2.5.5.5
	D. @ 5 GHz (Bereskin Stripline)	3.74	–		2.5.5.5
	E. @ 10 GHz (Bereskin Stripline)	3.74	–		2.5.5.5
Df, Loss Tangent (Laminate & prepreg as laminated)	A. @ 100 MHz (HP4285A)	0.0180	0.035	–	2.5.5.3
	B. @ 1 GHz (HP4291A)	0.0180	–		2.5.5.9
	C. @ 2 GHz (Bereskin Stripline)	0.0170	–		2.5.5.5
	D. @ 5 GHz (Bereskin Stripline)	0.0190	–		2.5.5.5
	E. @ 8 GHz (Bereskin Stripline)	0.0210	–		2.5.5.5
Volume Resistivity	A. 96/35/90	–	1.0x10 ⁶	MΩ-cm	2.5.17.1
	B. After moisture resistance	3.0x10 ⁸	–		
	C. At elevated temperature	7.0x10 ⁸	1.0x10 ³		
Surface Resistivity	A. 96/35/90	–	1.0x10 ⁴	MΩ	2.5.17.1
	B. After moisture resistance	3.0x10 ⁶	–		
	C. At elevated temperature	2.0x10 ⁸	1.0x10 ³		
Dielectric Breakdown		>55	–	kV	2.5.6
Arc Resistance		130	60	Seconds	2.5.1
Electric Strength (Laminate & prepreg as laminated)		44 (1100)	30 (750)	kV/mm (V/mil)	2.5.6.2
Comparative Tracking Index (CTI)		4 (100-174)	–	Class (Volts)	UL-746A ASTM D3638
Peel Strength	A. Low profile copper foil and very low profile – all copper weights >17 microns	1.14 (6.5)	0.70 (4.0)	N/mm (lb/inch)	2.4.8
	B. Standard profile copper	–	–		2.4.8.2
	1. After thermal stress	1.25 (7.0)	0.80 (4.5)		2.4.8.3
	2. At 125°C (257°F)	1.25 (7.0)	0.70 (4.0)		–
	3. After process solutions	1.14 (6.5)	0.55 (3.0)	–	–
Flexural Strength	A. Lengthwise direction	83,600	–	lb/inch ²	2.4.4
	B. Crosswise direction	55,500			
Tensile Strength	A. Lengthwise direction	55,030	–	lb/inch ²	–
	B. Crosswise direction	35,370			
Moisture Absorption		0.5	–	%	2.6.2.1
Flammability (Laminate & prepreg as laminated)		HB	–	Rating	UL 94
Max Operating Temperature		140	UL Cert	°C	–

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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