



## 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](http://www.isola-group.com/products/P25N)

### ORDERING INFORMATION:

Contact your local sales representative or visit [www.isola-group.com](http://www.isola-group.com) for further information.

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High Performance

## P25N Data Sheet

Tg 250, Td 383  
Dk 3.67, Df 0.0187  
/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)
<b>Glass Transition Temperature (Tg) by DSC</b>	250 (Full Cure)	170-200	°C	2.4.25
<b>Decomposition Temperature (Td) by TGA @ 5% weight loss</b>	383	–	°C	ASTM D3850
<b>T260</b>	60	–	Minutes	ASTM D3850
<b>T288</b>	60	–	Minutes	ASTM D3850
<b>CTE, Z-axis</b>	A. Pre-Tg B. Post-Tg	AABUS –	ppm/°C	2.4.24
<b>CTE, X-, Y-axes</b>	A. Pre-Tg B. Post-Tg	AABUS –	ppm/°C	2.4.24
<b>Z-axis Expansion (50-260°C)</b>	–	–	%	2.4.24
<b>Thermal Conductivity</b>	0.4	–	W/mK	ASTM D5930
<b>Thermal Stress 10 sec @ 288°C (550.4°F)</b>	A. Unetched B. Etched	Pass Pass Visual	Rating	2.4.13.1
<b>Dk, Permittivity @ 60% resin (Prepreg as laminated)</b>	A. @ 100 MHz B. @ 500 MHz C. @ 1 GHz D. @ 2 GHz	3.75 3.72 3.70 3.67	5.4 – – –	2.5.5.9 2.5.5.9 2.5.5.9 Bereskin Stripline
<b>Df, Loss Tangent @ 60% resin (Prepreg as laminated)</b>	A. @ 100 MHz B. @ 500 MHz C. @ 1 GHz D. @ 2 GHz	0.0140 0.0157 0.0180 0.0187	0.035 – – –	2.5.5.9 2.5.5.9 2.5.5.9 Bereskin Stripline
<b>Dk, Permittivity (65% resin) (Prepreg as laminated)</b>	A. @ 100 MHz B. @ 500 MHz C. @ 1 GHz D. @ 2 GHz	3.66 3.62 3.60 3.57	5.4 – – –	2.5.5.9 2.5.5.9 2.5.5.9 Bereskin Stripline
<b>Df, Loss Tangent (65% resin) (Prepreg as laminated)</b>	A. @ 100 MHz B. @ 500 MHz C. @ 1 GHz D. @ 2 GHz	0.0146 0.0165 0.0189 0.0198	0.035 – – –	2.5.5.9 2.5.5.9 2.5.5.9 Bereskin Stripline
<b>Volume Resistivity</b>	A. 96/35/90 B. After moisture resistance C. At elevated temperature	– 3.0x10 <sup>8</sup> 7.0x10 <sup>8</sup>	1.0x10 <sup>6</sup> – 1.0x10 <sup>3</sup>	MΩ-cm 2.5.17.1
<b>Surface Resistivity</b>	A. 96/35/90 B. After moisture resistance C. At elevated temperature	– 3.0x10 <sup>6</sup> 2.0x10 <sup>8</sup>	1.0x10 <sup>4</sup> – 1.0x10 <sup>3</sup>	MΩ 2.5.17.1
<b>Dielectric Breakdown</b>	>55	–	kV	2.5.6
<b>Arc Resistance</b>	130	60	Seconds	2.5.1
<b>Electric Strength (Laminate &amp; prepreg as laminated)</b>	44 (1100)	30 (750)	kV/mm (V/mil)	2.5.6.2
<b>Comparative Tracking Index (CTI)</b>	4 (100-174)	–	Class (Volts)	UL-746A ASTM D3638
<b>Flexural Strength</b>	A. Lengthwise direction B. Crosswise direction	83,600 55,500	–	lb/inch <sup>2</sup> 2.4.4
<b>Tensile Strength</b>	A. Lengthwise direction B. Crosswise direction	55,030 35,370	–	lb/inch <sup>2</sup> –
<b>Moisture Absorption</b>		0.5	–	% 2.6.2.1
<b>Flammability (Laminate &amp; prepreg as laminated)</b>		HB	–	Rating UL 94
<b>Max Operating Temperature</b>		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.

[www.isola-group.com/products/P25N](http://www.isola-group.com/products/P25N)

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08/13 DSP25NA

