



## Polyimide No Flow Prepreg UL 94- V-0 Rated

Isola Group offers a product line of polyimide-based no flow prepreg materials for high temperature printed circuit applications. These products consist of a flame resistance, polyimide resin system suitable for military, commercial or industrial electronic applications requiring superior performance and the utmost in thermal properties. They utilize a polyimide and thermoplastic blend resin, fully cured without the use of MDA (Methylene Dianiline). 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.

### • Industry Approvals

IPC-4101B /42  
UL Recognized – GPY, File Number  
E41625

### • High Tg - 250 °C (TMA)

Greater thermal performance over competitive products with very high epoxy content.

### • Maintains Bond Strength at High Temperature

### • Tough Resin System

Improved processing due to less brittleness  
Less delamination from machining

### • Non-brominated Chemistry, Thermally Stable Laminate System

Full benefits of 100% polyimide performance

### • Non-MDA (Methylene Dianiline) Chemistry

Meets all OSHA 1910.1050 requirements

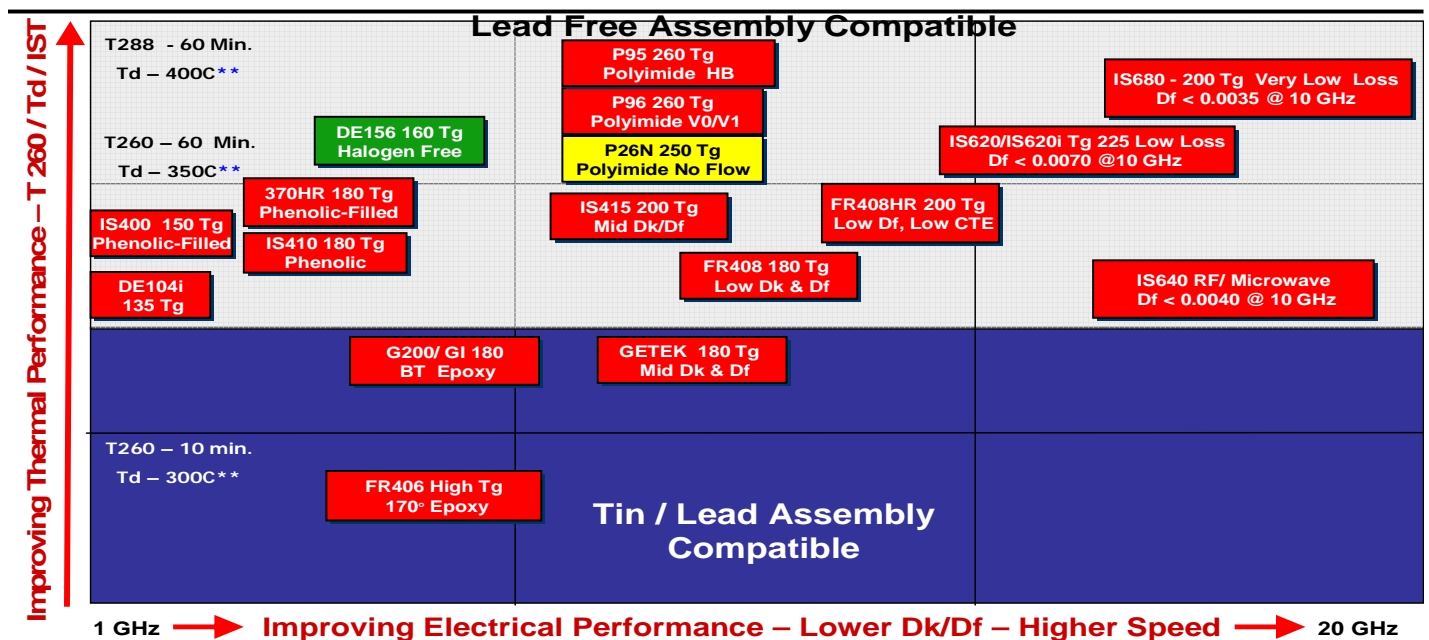
### • Standard Availability

Prepregs: Available in roll or panel form

Glass Styles: 106 & 1080 fabrics



## Isola - Product Position Thermal Performance vs Signal Integrity



Speed is a function of design such as line length etc.

\*\* Laminate Data - IST performance is a function of Hole diameter, board thickness, plating parameters and laminate attributes.

P26N				
Property	Typical Values			
	Typical Value	Specification	Units	Test Method
			Metric (English)	IPC-TM-650 (or as noted)
Glass Transition Temperature (Tg) by DSC, spec minimum	250 (Full Cure)	250 min	°C	2.4.25
Decomposition Temperature (Td) @ 5% wt loss	383	—	°C	ASTM D3850
CTE, Z-axis	A. Pre-Tg	AABUS	ppm/°C	2.4.24
	B. Post-Tg	—		
CTE, X-, Y-axis	A. Pre-Tg	AABUS	ppm/°C	2.4.24
	B. Post-Tg	—		
% Z-Axis Expansion (50-260C)			%	2.4.24
Thermal Conductivity	0.4	—	W/mK	ASTM D5930
Thermal Stress 10 Sec @ 288°C (550.4°F), spec min	A. Unetched	pass	Rating	2.4.13.1
	B. Etched	pass		
Permittivity, spec maximum (Laminate & prepreg as laminated)	A. @ 100 MHz HP4285A	3.90	—	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
Loss Tangent, spec maximum (Laminate & prepreg as laminated)	A. @ 100 MHz HP4285A	0.0180	—	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, spec minimum	A. 96/35/90		MΩ -cm	2.5.17.1
	B. After moisture resistance	3x10 <sup>8</sup>		
	C. At elevated temperature	7x10 <sup>8</sup>		
Surface Resistivity, spec minimum	A. 96/35/90		MΩ	2.5.17.1
	B. After moisture resistance	3x10 <sup>6</sup>		
	C. At elevated temperature	2x10 <sup>8</sup>		
Dielectric Breakdown, spec minimum	>55	—	kV	2.5.6
Arc Resistance, spec minimum	130	60	Seconds	2.5.1
Electric Strength, spec minimum (Laminate & prepreg as laminated)		44	kV/mm (V/mil)	2.5.6.2
		1100		
Comparative Tracking Index (CTI)	4 (100-174)	-	Class (volts)	UL-746A ASTM D3638
Peel Strength, Spec Minimum	A. Low profile copper foil and very low profile – all copper weights >17 microns	6.5(1.14)	4.0(0.70)	lb/inch(N/mm)
	B. Standard profile copper			
	1. After thermal stress	7.0(1.25)	4.5(0.8)	2.4.8.3
	2. At 125°C (257°F)	7.0(1.25)	4.0(0.70)	lb/inch(N/mm)
	3. After process solutions	6.5(1.14)	3.0(0.55)	
Flexural Strength, minimum	A. Lengthwise direction	90,000	—	lb/inch <sup>2</sup>
	B. Crosswise direction	72,000		
Moisture Absorption, spec maximum	0.5	—	%	2.6.2.1
Flammability (Laminate & prepreg as laminated), spec min	V0		Rating	UL-94
HWI	0			
Max Operating Temperature	140 (210)	UL Cert (tested)	Deg C	
DSR	yes			

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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