P96/P26

Polyimide UL V-0 Laminate and Prepreg

Tg 260°C Td 396°C Dk 3.76 Df 0.017

IPC-4101 /40 /41 UL - File Number E41625

Isola offers a product line of polyimide-based prepreg (P26) and core material (P96) for high temperature printed circuit applications.

PRODUCT FEATURES

Industry Recognition

- UL File Number: E41625
- RoHS Compliant

Performance Attributes

- Lead-free assembly compatible

Processing Advantages

- Good flow and fill
- Multiple reflow capable

PRODUCT AVAILABILITY

Standard Material Offering: Laminate

- 2 to 125 mil (0.05 to 3.2 mm)

Copper Foil Type

- HTE Grade 3

Copper Weight

- ½, 1 and 2 oz (18, 35 and 70 µm) available
- Heavier copper foil available
- Thinner copper foil available

Standard Material Offering: Prepreg

- Tooling of prepreg panels
- Moisture barrier packaging

Glass Fabric Availability

- E-glass

ORDERING INFORMATION:

Contact your local sales representative or contact info@isola-group.com for further information.

These products consist of a flame resistant, 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

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TYPICAL MARKET APPLICATIONS

AEROSPACE & DEFENSE

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Typical Values Table

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		396	°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/m·K	ASTM E1952
Thermal Stress 10 sec @ 288ºC (550.4ºF)	A. Unetched B. Etched	Pass	Pass Visual	2.4.13.1
Dk, Permittivity	A. @ 100 MHz B. @ 500 MHz C. @ 1 GHz D. @ 2 GHz E. @ 5 GHz F. @ 10 GHz	3.83 3.80 3.78 3.76 3.73 3.73	—	2.5.5.9 2.5.5.9 2.5.5.9 Bereskin Stripline Bereskin Stripline Bereskin Stripline
Df, Loss Tangent	A. @ 100 MHz B. @ 500 MHz C. @ 1 GHz D. @ 2 GHz E. @ 5 GHz F. @ 10 GHz	0.0135 0.0151 0.0172 0.0179 0.0188 0.021	—	2.5.5.9 2.5.5.9 2.5.5.9 Bereskin Stripline Bereskin Stripline Bereskin Stripline
Volume Resistivity	A. After moisture resistance B. At elevated temperature	3.0×10^8 7.0×10^8	MΩ-cm	2.5.17.1
Surface Resistivity	A. After moisture resistance B. At elevated temperature	3×10^6 2×10^8	MΩ	2.5.17.1
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)		4 (100-174)	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] B. Standard profile copper 1. After thermal stress 2. At 125ºC (257ºF) 3. After process solutions	1.14 (6.5) 1.25 (7.0) 1.25 (7.0) 1.14 (6.5)	N/mm (lb/inch)	2.4.8C 2.4.8.2A 2.4.8.3 2.4.8.3
Flexural Strength	A. Length direction B. Cross direction	576 (83.6) 383 (55.5)	MPa (kpsi)	2.4.4B
Tensile Strength	A. Length direction B. Cross direction	383 (55.5) 238 (35.4)	MPa (kpsi)	ASTM D3039
Young's Modulus	A. Length direction B. Cross direction	3958 3530	ksi	ASTM D790-15e2
Poisson's Ratio	A. Length direction B. Cross direction	0.189 0.154	—	ASTM D3039
Moisture Absorption		0.5	%	2.6.2.1A
Flammability (Laminate & laminated prepreg)		V-0	Rating	UL 94
Relative Thermal Index (RTI)		170	°C	UL 746

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NOTES

Visit our site http://www.isola-group.com for more details.
Revisions:
A: Initial release - 4/17
B: Corrected units for Flexural and Tensile Strength - 8/18
C: Corrected MOT value to match UL file - 11/18 F: Updated RTI from 140 to 170 per UL rating - 3/24

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