370HR Ultra

Industry Leading, Very Low CTE, Epoxy Laminate and Prepreg

Tg 180°C Td 360°C Dk 4.2 Df 0.0125

UL Approval Pending and IPC-4101 /126

370HR Ultra is the industry's "best in class" very low CTE, lead-free compatible product for high-reliability applications across a wide range of markets.

PRODUCT FEATURES

Industry Recognition
- UL Approval Pending

Performance Attributes
- CAF resistant

Processing Advantages
- FR-4 process compatible
- UV blocking and AOI fluorescence
- Multiple reflow capable
- HDI technology compatible

PRODUCT AVAILABILITY

Standard Material Offering: Laminate
- 2 to 5 mil (0.05 to 1.3 mm)

Copper Foil Type
- HTE Grade 3
- RTF (Reverse Treat Foil)

Copper Weight
- ½, 1 and 2 oz (18, 35 and 70 µm) available

Standard Material Offering: Prepreg
- Tooling of prepreg panels

Glass Fabric Availability
- E-glass
- Square weave glass
- Mechanically spread glass

370HR Ultra laminates and prepregs are engineered using a patented high-performance 180°C Tg FR-4 multifunctional epoxy resin system. Building on the proven foundation of the original 370HR material, 370HR Ultra features targeted modifications to provide a lower Coefficient of Thermal Expansion (CTE) and enhanced thermal performance specifically for HDI and Ultra HDI (UHDI) applications.These advancements build on the proven manufacturability and global availability of the original 370HR material.
We manufacture 370HR Ultra with high-quality E-glass fabric to ensure superior Conductive Anodic Filament (CAF) resistance. This material delivers industry-leading thermal reliability and mechanical, chemical, and moisture resistance properties that meet or exceed traditional FR-4 standards. Proven in thousands of complex designs, 370HR Ultra remains best-in-class for ease of processing and reliability in sequential lamination environments.

PRODUCT ATTRIBUTES



TYPICAL MARKET APPLICATIONS



ORDERING INFORMATION:

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

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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	Resin Content	180	°C	2.4.25C
Decomposition Temperature (Td) by TGA @ 5% weight loss	Resin Content	360	°C	2.4.24.6
Time to Delaminate by TMA (Copper removed)	A. T260 B. T288	60 50	Minutes	2.4.24.1
Z-Axis CTE	A. Pre-Tg B. Post-Tg C. 50 to 260°C, (Total Expansion)	27 155 1.8	ppm/°C ppm/°C %	2.4.24C
X/Y-Axis CTE	Pre-Tg	11/13	ppm/°C	2.4.24C
Thermal Conductivity		0.5	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	@ 10 GHz	4.20	—	Bereskin Stripline
Df, Loss Tangent	@ 10 GHz	0.0125	—	Bereskin Stripline
Volume Resistivity	A. After moisture resistance B. At elevated temperature	—	MΩ-cm	2.5.17.1
Surface Resistivity	A. After moisture resistance B. At elevated temperature	—	MΩ	2.5.17.1
Dielectric Breakdown	Resin Content	66	kV	2.5.6B
Arc Resistance	Resin Content	120	Seconds	2.5.1B
Electric Strength (Laminate & laminated prepreg)	Resin Content	88	kV/mm (V/mil)	2.5.6.2A
Comparative Tracking Index (CTI)		3 (175-249)	Class (Volts)	—
Peel Strength	A. Low Profile copper foil and very low profile copper foil >17 um B. Standard profile copper 1. After thermal stress 2. At 125ºC (257ºF) 3. After process solutions	1.016 (5.8) 1.016 (5.8) — —	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	574 (83.2) 460 (66.8)	MPa (kpsi)	2.4.4B
Tensile Strength	A. Length direction B. Cross direction	45 40	MPa (kpsi)	ASTM D3039
Young's Modulus	A. Length direction B. Cross direction	—	ksi	ASTM D790-15e2
Poisson's Ratio	A. Length direction B. Cross direction	—	—	ASTM D3039
Moisture Absorption		0.1	%	2.6.2.1A
Flammability (Laminate & laminated prepreg)		V-0	Rating	UL 94
Relative Thermal Index (RTI)		—	°C	—

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NOTES

Visit our site http://www.isola-group.com for more details.
Revisions:
A. Initial Release 10/21/2026

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