



IS300MD

Halogen-free, Ultra-low Loss Material

IS300MD is a proprietary high performance, low-Dk, low-loss, halogen-free material specifically designed for the high-end mobile applications.

IS300MD laminate and prepreg products are manufactured with Isola's patentable high performance resin systems. IS300MD has the best-in-class Dk for HDI applications, enabling the use of ultrathin dielectric, while maintaining manufacturable line widths. IS300MD laminate and prepreg can be tailored to any thickness to meet the needs of the latest multilayer HDI build-up technologies. IS300MD is fully compatible with the standard chemical desmear process.

Product Attributes

High Thermal Reliability , Halogen Free , High Density Interconnect

Typical Market Applications

Consumer Electronics , Networking & Communication Systems

ORDERING INFORMATION:

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

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High Thermal Reliability

Data Sheet

Tg 190°C

Td 390°C

Dk 3.20

Df 0.0033

IPC-4103 - / 17

UL - File Number E41625

Last Updated April 25, 2018
Revision No: B

Product Features

- Industry Recognition
 - UL File Number: E41625
 - RoHS Compliant
- Performance Attributes
 - Halogen free
 - 6x 260°C reflow capable
 - 6x 288°C solder float capable
- Processing Advantages
 - Multiple lamination cycles
 - Any layer technology compatible

Product Availability

- Standard Material Offering: Laminate
 - 2 to 6 mil (0.05 to 0.15 mm)
- Copper Foil Type
 - VLP-2 (2 micron), 1 oz and below
 - RTF (Reverse Treat Foil)
- Copper Weight
 - ½, 1 oz (18 and 35 µm) available
 - Thinner copper foil available
- Standard Material Offering: Prepreg
 - Tooling of prepreg panels
- Glass Fabric Availability
 - Square weave glass
 - Mechanically spread glass

Property	Typical Value	Units		Test Method
		Metric (English)		IPC-TM-650 (or as noted)
Glass Transition Temperature (Tg) by DSC	190		°C	2.4.25C
Decomposition Temperature (Td) by TGA @ 5% weight loss	390		°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	50 to 260°C, (Total Expansion)	2.9	%	2.4.24C
X/Y-Axis CTE	Pre-Tg	12	ppm/°C	2.4.24C
Thermal Conductivity		0.31	W/mK	ASTM E1952
Thermal Stress 10 sec @ 288°C (550.4°F)	A. Unetched B. Etched	Pass	Pass Visual	2.4.13.1
Dk, Permittivity	A. @ 1 GHz B. @ 2 GHz C. @ 5 GHz D. @ 10 GHz	3.20	—	Bereskin Stripline
Df, Loss Tangent	A. @ 1 GHz B. @ 2 GHz C. @ 5 GHz D. @ 10 GHz	0.0032 0.0033 0.0033 0.0033	—	Bereskin Stripline
Volume Resistivity	C-96/35/90	1.33 x 10 ⁷	MΩ-cm	2.5.17.1
Surface Resistivity	C-96/35/90	1.33 x 10 ⁵	MΩ	2.5.17.1
Dielectric Breakdown		45.4	kV	2.5.6B
Arc Resistance		139	Seconds	2.5.1B
Electric Strength (Laminate & laminated prepreg)		45 (1133)	kV/mm (V/mil)	2.5.6.2A
Comparative Tracking Index (CTI)		3/175-249	Class (Volts)	UL 746A ASTM D3638
Peel Strength	A. 1 oz. EDC foil B. 0.5 oz. EDC foil	0.88 (5.0) 0.75 (4.3)	N/mm (lb/inch)	2.4.8.2A
Flexural Strength	A. Length direction B. Cross direction	43.6 35.6	ksi	2.4.4B
Tensile Strength	A. Length direction B. Cross direction	31.0 22.2	ksi	ASTM D3039
Moisture Absorption		0.05	%	2.6.2.1A
Flammability (Laminate & laminated prepreg)		V-0	Rating	UL 94
Max Operating Temperature		130	°C	UL 796

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/all-printed-circuit-materials/is300md/

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NOTE

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Revision B: Corrected typos moisture uptake from 0.5 to 0.05 & tensile strength lengthwise from 31,00 to 31,000. Corrected units for Flexural and Tensile Strength, corrected mis-matched Dk values