



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

High Thermal Reliability

Data Sheet

Tg 190°C

Td 390°C

Dk 3.06

Df 0.0033

UL - File Number E41625

Last Updated December 7, 2017

Revision No: 12

Product Features

Product Availability

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	Minutes	2.4.24.1
Z-Axis CTE	50 to 260°C, (Total Expansion)	%	2.4.24C
X/Y-Axis CTE	Pre-Tg	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
Dk, Permittivity	A. @ 1 GHz B. @ 2 GHz C. @ 5 GHz D. @ 10 GHz	—	Bereskin Stripline
Df, Loss Tangent	A. @ 1 GHz B. @ 2 GHz C. @ 5 GHz D. @ 10 GHz	—	Bereskin Stripline
Volume Resistivity	C-96/35/90	1.33 x 10 ⁷	MΩ-cm
Surface Resistivity	C-96/35/90	1.33 x 10 ⁵	MΩ
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)
Flexural Strength	A. Length direction B. Cross direction	43,633 35,567	ksi
Tensile Strength	A. Length direction B. Cross direction	31,00 22,150	ksi
Moisture Absorption	0.5	%	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.

