



IS620i

High Performance Laminate and Prepreg

IS620i is the first material in the digital products class built upon existing technologies, yet offering significant advantages for today's digital world.

The resin matrix of IS620i is uniquely formulated for high-speed applications ranging from 2 to 15 GHz, and offers designers and fabricators the flexibility of digital design, the assurance of supply and the ease of conventional FR-4 processing. IS620i is the first material in its class to offer the complete package of these critical features: low loss with a flat response over frequency, availability in both laminate and prepreg form in all typical thicknesses and sizes and the ability to use conventional fabrication techniques.

Product Attributes

Legacy Materials

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Data Sheet

Tg 225°C

Td 364°C

Dk 3.58

Df 0.006

IPC-4101/135

UL - File Number E41625

Last Updated December 7, 2017
Revision No: 10

Product Features

Product Availability

Property	Typical Value	Units	Test Method
		Metric (English)	IPC-TM-650 (or as noted)
Glass Transition Temperature (Tg) by DSC	225	°C	2.4.25C
Decomposition Temperature (Td) by TGA @ 5% weight loss	364	°C	2.4.24.6
Time to Delaminate by TMA (Copper removed)	A. T260 B. T288	60 >20	Minutes 2.4.24.1
Z-Axis CTE	A. Pre-Tg B. Post-Tg C. 50 to 260°C, (Total Expansion)	55 230 2.8	ppm/°C ppm/°C % 2.4.24C
X/Y-Axis CTE	Pre-Tg	13	ppm/°C 2.4.24C
Thermal Conductivity		0.35	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. @ 100 MHz B. @ 1 GHz C. @ 2 GHz D. @ 5 GHz E. @ 10 GHz	3.59 3.58 3.58 3.54 3.54	— 2.5.5.3 2.5.5.9 Bereskin Stripline Bereskin Stripline Bereskin Stripline
Df, Loss Tangent	A. @ 100 MHz B. @ 1 GHz C. @ 2 GHz D. @ 5 GHz E. @ 10 GHz	0.0051 0.0059 0.0060 0.0066 0.0071	— 2.5.5.3 2.5.5.9 Bereskin Stripline Bereskin Stripline Bereskin Stripline
Volume Resistivity	A. After moisture resistance B. At elevated temperature	8.9 x 10 ⁸ 6.5 x 10 ⁸	MΩ-cm 2.5.17.1
Surface Resistivity	A. After moisture resistance B. At elevated temperature	2.21 x 10 ⁶ 4.4 x 10 ⁸	MΩ 2.5.17.1
Dielectric Breakdown		>50	kV 2.5.6B
Arc Resistance		110	Seconds 2.5.1B
Electric Strength (Laminate & laminated prepreg)		55 (1400)	kV/mm (V/mil) 2.5.6.2A
Comparative Tracking Index (CTI)		2 (250-399)	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. After process solutions	1.14 (6.5) 0.96 (5.5) 0.90 (5.1)	N/mm (lb/inch) 2.4.8C 2.4.8.2A 2.4.8.3
Flexural Strength	A. Length direction B. Cross direction	69,200 62,400	ksi 2.4.4B
Tensile Strength	A. Length direction B. Cross direction	42,065 39,650	ksi ASTM D3039
Young's Modulus	A. Length direction B. Cross direction	3217 3207	ksi ASTM D790-15e2
Poisson's Ratio	A. Length direction B. Cross direction	0.166 0.164	— ASTM D3039
Moisture Absorption		0.24	% 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.

