



# IS400

## High Performance Laminate and Prepreg

IS400 is a proprietary, temperature resistant resin system with a Tg of 150°C.

It is intended for multilayer Printed Wiring Board (PWB) applications where demanding thermal performance and high reliability are required. IS400 laminate and prepreg products are manufactured using Isola's patented technology, reinforced with electrical grade (E-glass) glass fabric. This system delivers a 330°C decomposition temperature and a low Z-axis expansion.

### Product Attributes

High Thermal Reliability

### Typical Market Applications

Automotive & Transportation

High Thermal Reliability

## Data Sheet

Tg 150°C

Td 330°C

Dk 3.90

Df 0.022

IPC-4101/97 /98 /99 /101

UL - File Number E41625

Last Updated December 7, 2017  
Revision No: 7

## Product Features

## Product Availability

Property	Typical Value	Units	Test Method
		Metric (English)	IPC-TM-650 (or as noted)
Glass Transition Temperature (Tg) by DSC	150	°C	2.4.25C
Decomposition Temperature (Td) by TGA @ 5% weight loss	330	°C	2.4.24.6
Time to Delaminate by TMA (Copper removed)	A. T260 B. T288	>60 >10	Minutes 2.4.24.1
Z-Axis CTE	A. Pre-Tg B. Post-Tg C. 50 to 260°C, (Total Expansion)	50 260 3.3	ppm/°C ppm/°C % 2.4.24C 2.4.24C
X/Y-Axis CTE	Pre-Tg	13	ppm/°C 2.4.24C
Thermal Conductivity		0.36	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. @ 500 MHz	4.00 3.90	— 2.5.5.3 2.5.5.9
Df, Loss Tangent	A. @ 100 MHz B. @ 500 MHz	0.020 0.022	— 2.5.5.3 2.5.5.9
Volume Resistivity	A. C-96/35/90 B. At elevated temperature	$4.0 \times 10^8$ $7.0 \times 10^7$	MΩ-cm 2.5.17.1
Surface Resistivity	A. C-96/35/90 B. At elevated temperature	$3.0 \times 10^6$ $5.4 \times 10^6$	MΩ 2.5.17.1
Dielectric Breakdown		>50	kV 2.5.6B
Arc Resistance		120	Seconds 2.5.1B
Electric Strength (Laminate & laminated prepreg)		48 (1100)	kV/mm (V/mil) 2.5.6.2A
Comparative Tracking Index (CTI)		3 (175-249)	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 125°C (257°F) 3. After process solutions	1.05 (6.0) 1.45 (9.0) 1.25 (8.0) 1.45 (9.0)	N/mm (lb/inch) 2.4.8C 2.4.8.2A 2.4.8.3 2.4.8.2A
Flexural Strength	A. Length direction B. Cross direction	82,000 66,600	ksi 2.4.4B
Tensile Strength	A. Length direction B. Cross direction	51,213 41,675	ksi ASTM D3039
Young's Modulus	A. Length direction B. Cross direction	3663 3328	ksi ASTM D790-15e2
Poisson's Ratio	A. Length direction B. Cross direction	0.183 0.151	— ASTM D3039
Moisture Absorption		0.18	% 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.

