IS400

Lead Free, Mid Tg Epoxy Laminate and Prepreg

Tg 150°C Td 330°C Dk 3.90 Df 0.022

IPC-4101 /97 /98 /99 /101 UL - File Number E41625

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

PRODUCT FEATURES

Industry Recognition

- UL File Number: E41625
- RoHS Compliant

Performance Attributes

- CAF resistant

Processing Advantages

- FR-4 process compatible

PRODUCT AVAILABILITY

Standard Material Offering: Laminate

- 2 to 93 mil (0.05 to 2.4 mm)

Copper Foil Type

- HTE Grade 3

Copper Weight

- ½, 1 and 2 oz (18, 35 and 70 µm) available
- Thinner copper foil available

Standard Material Offering: Prepreg

- Tooling of prepreg panels

Glass Fabric Availability

- E-glass
- Square weave glass
- Mechanically spread glass

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



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		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)	50 250 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/m·K	ASTM E1952
Thermal Stress 10 sec @ 288ºC (550.4ºF)	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	4.0×10^8 7.0×10^7	MΩ-cm	2.5.17.1
Surface Resistivity	A. C-96/35/90 B. At elevated temperature	3.0×10^6 5.4×10^6	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 125ºC (257ºF) 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	565 (82.0) 459 (66.6)	MPa (kpsi)	2.4.4B
Tensile Strength	A. Length direction B. Cross direction	353 (51.2) 288 (41.7)	MPa (kpsi)	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
Relative Thermal Index (RTI)		130	°C	UL 796

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NOTES

Visit our site http://www.isola-group.com for more details.
Revisions:
A: Initial release - 4/17
B: Corrected units for Flexural and Tensile Strength - 8/18
C: Change MOT to RTI 5/19

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