S1000-2

(UL ANSI:FR-4.0) Low CTE / Hi-Tg / Excellent Thermal Resistance

FEATURES

- Lead-free compatible FR-4 laminate.
- Tg 170℃ (DSC)，UV Blocking / AOI compatible.
- High heat resistance .
- Lower Z-axis CTE.
- Excellent through-hole reliability.
- Excellent anti-CAF performance.
- Low water absorption.

APPLICATIONS

Suitable for high aspect ratio and high-layer PCB.
Widely used in computer, communication equipment, precise apparatus and instrument, router, and etc.

GENERAL PROPERTIES

Test Item		Treatment Condition	Unit	Property Data	
				SPEC	Typical Value
Tg		DSC	℃	≥170	180
		DMA		-	185
Flammability		C-48/23/50	-	V-0	V-0
		E-24/125+des			
Volume Resistivity		After moisture resistance	MΩ-cm	≥ 10^6	2.2×10^8
		E-24/125		≥ 10^3	4.5×10^6
Surface Resistivity		After moisture resistance	MΩ	≥ 10^4	7.9×10^7
		E-24/125		≥ 10^3	1.7×10^6
Arc Resistance		D-48/50+D-0.5/23	S	≥ 60	100
Dielectric Breakdown		D-48/50+D-0.5/23	KV	≥ 40	63
Dielectric Constant (1MHz)		C-24/23/50	-	≤ 5.4	4.8
Dissipation Factor (1MHz)		C-24/23/50	-	≤ 0.035	0.013
Thermal Stress	Unetched	288℃, solder dip	-	>10s No delamination	100s No delamination
	Etched				
Peel Strength	1oz Cu. Foil	288℃,10s	N/mm	≥ 1.05	1.38
		125℃		≥ 0.70	1.07
Flexural Strength	LW	A	MPa	≥ 415	562
	CW			≥ 345	518
Water Absorption		D-24/23	%	≤ 0.5	0.10
CTE Z-axis	Before Tg	TMA	PPM/℃	≤60	45
	After Tg	TMA	PPM/℃	≤300	220
	50~260℃	TMA	%	≤3.0	2.8
Td		10℃/min,N_2,5%Wt Loss	℃	≥340	345
T288		TMA	min	≥15	20
T260		TMA	min	≥30	60
T300		TMA	min	≥2	5
CTI		IEC60112 Method	V	PLC 3(175V--249V)	PLC 3

Remarks: 1.Specification sheet:IPC-4101/126, is for your reference only.
2.All the typical value is based on the 1.6mm specimen,while the Tg is for specimen ≥0.50mm.
3.All the typical value listed above is for your reference only, please turn to Shengyi Technology Co., Ltd. for detailed information, and all rights from this data sheet are reserved by Shengyi Technology Co., Ltd.

Explanations: C = Humidity conditioning; D = Immersion conditioning in distilled water; E = Temperature conditioning.

The figures following the letter symbols indicate with the first digit the duration of the preconditioning in hours, with the second digit the preconditioning temperature in ℃ and with the third digit the relative humidity.

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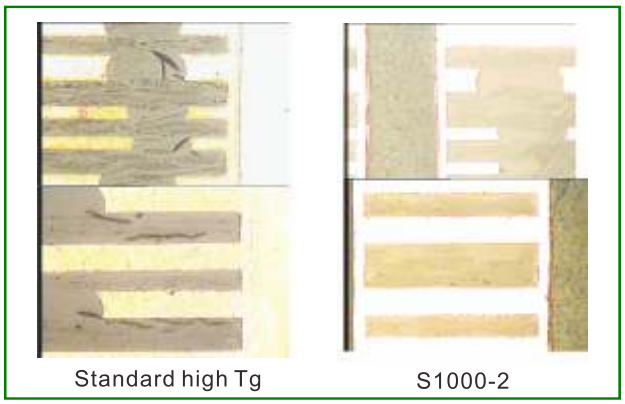
Heavy copper board application



Test Sample：S1000-2 and standard high Tg，
inner copper 4OZ

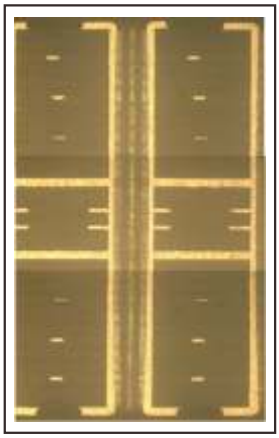
Test Method：Solder dip 288℃,10s,3x

Test Results:S1000-2 is better than standard high Tg

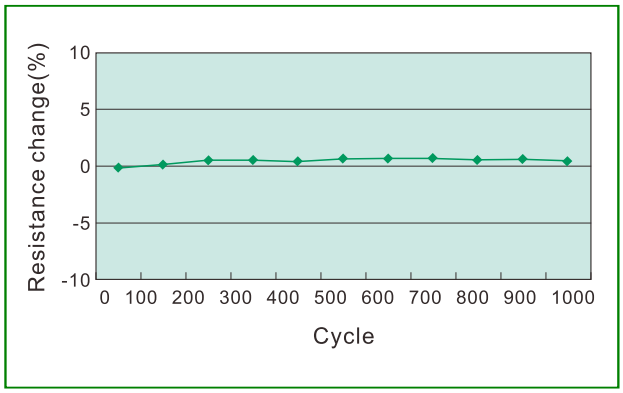
High layer count application evaluation

L1	H OZ
L1-2	prepreg 2*106
L2	H OZ
L2-3	Core 0.076
L3	1 OZ
L3-4	prepreg 1080H+3313
L4	H OZ
L4-5	Core 0.089
L5	1 OZ
L5-6	prepreg 106+2116
L6	H OZ
L6-7	Core 0.114
L7	H OZ
L7-8	prepreg 2*1080H
L8	1 OZ
L8-9	Core 0.114
L9	2 OZ
L9-10	prepreg 2*1080H
L10	1 OZ
L10-11	Core 0.100
L11	1 OZ
L11-12	prepreg 2*1080H
L12	2 OZ
L12-13	Core 0.114
L13	1 OZ
L13-14	prepreg 2*1080H
L14	H OZ
L14-15	Core 0.114
L15	H OZ
L15-16	prepreg 2116+106
L16	1 OZ
L16-17	Core 0.089
L17	H OZ
L17-18	prepreg 3313*1080H
L18	1 OZ
L18-19	Core 0.076
L19	H OZ
L19-20	prepreg 2*106
L20	H OZ

Structure：20-Layer,
0.25mm/0.8Pitch
Overall thickness：2.8mm
Test：260℃ reflow 5times



High Thermal Shock Resistance



Test Sample: S1000-2 multi-layer board
Test Method: Q1000（-45℃～130℃）
Test Results: Pass 1000 cycles

PURCHASING INFORMATION

Thickness	Copper foil	Standard Size
0.05mm to 3.2mm	12μm to 105μm	1,020×1,220mm (40″×48″) 915×1,220mm (36″×48″) 1,070×1,220mm (42″×48″)

- Other sheet size and thickness could be available upon request.
- UL认可单、双面PCB板，最小厚度0.38mm。

S1000-2B PREPREG

(UL ANSI:FR-4.0) Bonding Prepreg For S1000-2

FEATURES

- High Tg 170℃ (DSC).
- Excellent adhesion property and PCB processability.

PREPREG PARAMETERS

Glass fabric type	Resin content (%)	Cured thickness (mm)	DK(1GHz)	Df(1GHz)	Standard size (Roll type)
106/1037	70	0.050	3.87	0.019	1.260m X150m
	73	0.055	3.76	0.019	
	76	0.063	3.66	0.02	
	78	0.070	3.58	0.02	
1080/1078	62	0.076	4.15	0.017	1.260m X300m
	65	0.080	4.04	0.018	
	68	0.089	3.94	0.018	
2313	54	0.100	4.43	0.016	
	57	0.106	4.32	0.016	
2116	53	0.122	4.46	0.015	1.260m X250m
	56	0.130	4.36	0.016	
	58	0.140	4.29	0.016	
1506	44	0.150	4.77	0.014	1.260m X150m
	49	0.175	4.60	0.015	
7628	43	0.193	4.81	0.014	
	45	0.200	4.74	0.014	
	48	0.216	4.63	0.015	
	50	0.225	4.56	0.015	

Remark: DK and Df are tested according to IPC TM-650 2.5.5.9

Prepreg type, resin content and size could be available upon request.

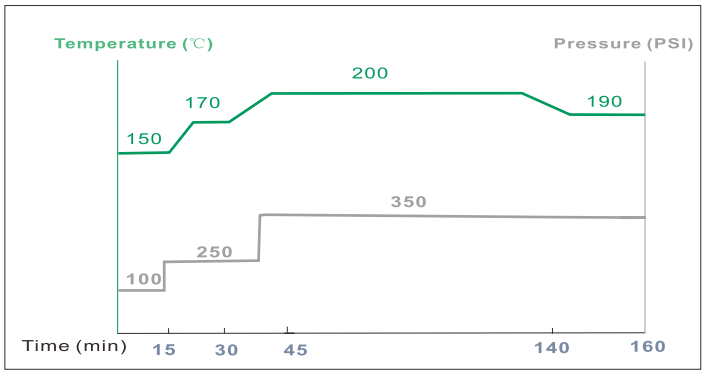
S1000-2B PREPREG

(UL ANSI:FR-4.0) Bonding Prepreg For S1000-2

PREPREG TEST METHOD

- **Resin Content, Resin Flow, Gel Time: IPC-TM-650**

HOT PRESSING CYCLE



Heat-up rate:1.0~2.5℃/min（80~140℃）
Curing time:>60min（185~195℃）
The hot pressing parameters is for your reference only, please turn to Shengyi Technology Co., Ltd for detailed information.

STORAGE CONDITION

- Three months when stored at <23 ℃ and <50% RH .
- Six months when stored at <5℃.Normalize in room temperature for at least 4h before using.
- Beware of moisture, always keep wrapped in damp-proof material. Were kept in normal condition, prepreg might absorb moisture and its bonding strength would be weakened.
- Avoid UV-rays and strong light.