



# S1000

(UL ANSI:FR-4)Low Z-CTE

## FEATURES

- Lead-free compatible FR-4 Laminate.
- Tg(DSC)155℃,UV Blocking/ AOI compatible.
- Excellent thermal reliability.
- Z-CTE 30~35% less than conventional FR-4.
- Excellent T/H reliability.
- Excellent anti-CAF and Q1000 performance.
- Low water absorption.

## APPLICATIONS

Computer, Instrumentation, VCR, communication equipment, automotive electronics, electronic game machine, and etc.

## GENERAL PROPERTIES

Test Item	Treatment Condition	Unit	Property Data		
			SPEC	Typical Value	
Tg	DSC	℃	≥150	155	
Flammability	C-48/23/50	Rating	V-0	V-0	
	E-24/125				
Volume Resistivity	After moisture resistance	MΩ-cm	≥10 <sup>6</sup>	7.4×10 <sup>8</sup>	
	E-24/125		≥10 <sup>3</sup>	5.6×10 <sup>6</sup>	
Surface Resistivity	After moisture resistance	MΩ	≥10 <sup>4</sup>	7.6×10 <sup>7</sup>	
	E-24/125		≥10 <sup>3</sup>	2.8×10 <sup>6</sup>	
Arc Resistance	D-48/50+D-0.5/23	S	≥60	147	
Dielectric Breakdown	D-48/50+D-0.5/23	KV	≥40	45	
Dielectric Constant (1MHz)	C-24/23/50	-	≤5.4	4.9	
Dissipation Factor (1MHz)	C-24/23/50	-	≤0.035	0.011	
Thermal Stress	Unetched	288℃,solder dip	> 10s No delamination	100s No delamination	
	Etched				
Peel Strength	1oz	288℃,10s	≥1.05	1.4	
	Cu. Foil	125℃	≥0.70	1.2	
Flexural Strength	LW	A	≥415	540	
	CW		≥345	450	
Water Absorption	D-24/23	%	≤0.5	0.09	
CTE	Before Tg	TMA	PPM/℃	≤60	49
	After Tg	TMA	PPM/℃	≤300	250
Z-axis	50~260℃	TMA	%	≤3.5	3.4
Td	10℃/min,N <sub>2</sub>	℃	≥325	335	
T288	TMA	min	≥5	10	
T260	TMA	min	≥30	60	
CTI	IEC60112	V	PLC 3(175V--249V)	PLC 3	

Remarks: 1.Specification sheet:IPC-4101/99, 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 Sci.Tech.Co., Ltd. for detailed information, and all rights from this data sheet are reserved by Shengyi Sci.Tech.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.

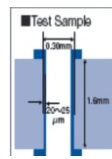
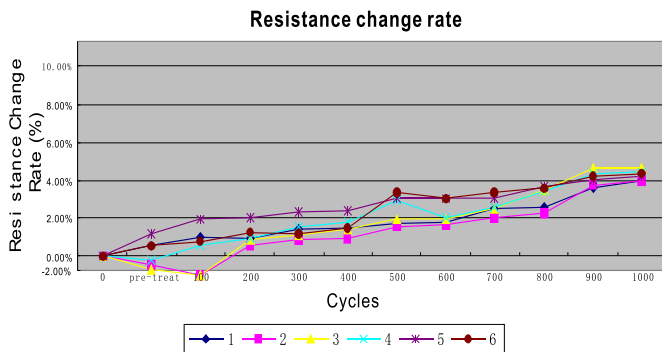


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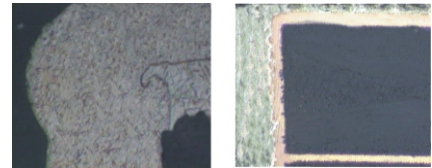
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## Thermal Change Test - Q1000

- A) Pre-Treatment:  
125 °C/ 2hour in the oven.
- B) Thermal shock condition:  
-40°C(30min)~+125°C(30min),transfer time<2min.

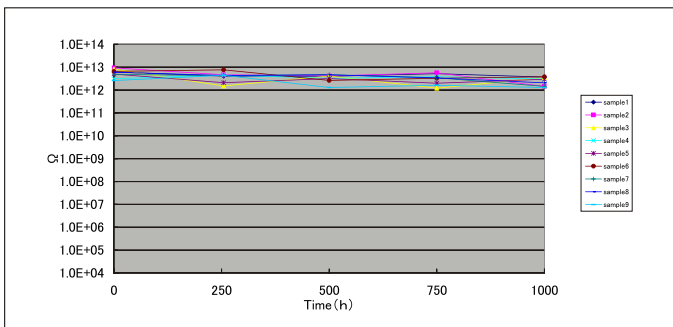


## Micro-section after Q1000



X200 micro-section X50 micro-section

## Anti-CAF Test



Specimen: Pitch=0.7mm,  $\phi$ =0.25mm, DC50V/85°C/85%RH

## PCT (High Pressure Cooker Test)

PCT (E-121°C/105KPa)	Solder Dipping@288°C/10 s	
	Standard FR-4	S1000
30 min	OK	OK
60 min	OK	OK
120 min	NG	OK

Specimen: 1.6mm(uncladding) 100mm\*100mm

## PURCHASING INFORMATION

Thickness	Copper foil	Standard Size	
0.05mm to 3.2mm	12 $\mu$ m	1,020×1,220mm (40" × 48" )	915×1,220mm (36" × 48" )
	to 105 $\mu$ m	1,070×1,220mm (42" × 48" )	

❖ Other sheet size and thickness could be available upon request.



# S1000B PREPREG

(UL ANSI:FR-4) Bonding Prepreg For S1000

## FEATURES

- Tg 155°C and good thermal resistance resistance.
- Low Z- CTE.
- Excellent chemical resistance.
- Excellent adhesion property and PCB processability.
- UV Blocking /AOI compatible.

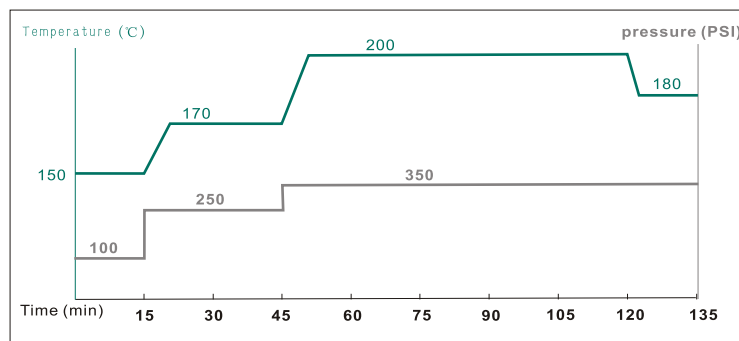
## PREPREG PARAMETERS

Designation	Glass fabric type	Performance	Gel time (sec)	Resin Content (%)	Resin flow (%)	Cured Thickness (μm)	Standard Size (roll type)
S1000B	106	Low Z-CTE	115±20	73±3	37±5	50±10	1,260mm×114.3m (125yards)
	106LD			73±3	37±5	50±10	
	1078LD			67±3	34±5	78±10	
	1080			67±3	34±5	78±10	
	1086LD			64±3	31±5	78±10	
	2112			60±3	30±5	90±15	
	2113			59±3	26±5	100±15	
	2313			58±3	26±5	100±15	
	3313			58±3	26±5	100±15	
	2116			55±3	26±5	120±15	
	2165			55±3	26±5	140±15	
	1500			48±3	22±5	160±15	
	7628			46±3	21±5	195±20	

*Type, Resin Content and Size Could be Available Upon Request*  
**Prepreg Test Method**

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

## HOT PRESSING CYCLE



Heat-up rate: 1.0~2.5°C/min (80~140°C)

Curing time: >45min (180~190°C)

The hot pressing parameters is for your reference only, please turn to Shengyi Sci.Tech.Co., Ltd for detailed information.

## STORAGE CONDITION

- Three months when stored at <23°C and <50% RH .
- Six months when stored at <5 °C . 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.