

# S1170

(UL ANSI:FR-4) Excellent Thermal Resistance / High Tg

## 特点

- 无铅兼容FR-4板材。
- 高Tg170℃(DSC)。
- 高耐热性。
- 优异的Anti-CAF性能。
- 低Z-CTE。
- 低吸水性。

## FEATURES

- Lead-free compatible FR-4 laminate.
- High Tg 170℃(DSC).
- Excellent thermal stability.
- Excellent anti-CAF performance.
- Low Z-axis CTE.
- Low water absorption.

## 应用领域

适合于高多层印制线路板，广泛应用于计算机与通讯设备，工业控制用高档仪器仪表、路由器等。

## APPLICATIONS

Suitable for high-count 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	175
Flammability	C-48/23/50	Rating	V-0	V-0
	E-24/125+des			
Volume Resistivity	After moisture resistance	M Ω -cm	≥ 10 <sup>6</sup>	3.5×10 <sup>8</sup>
	E-24/125		≥ 10 <sup>3</sup>	2.3×10 <sup>6</sup>
Surface Resistivity	After moisture resistance	M Ω	≥ 10 <sup>4</sup>	1.8×10 <sup>7</sup>
	E-24/125		≥ 10 <sup>3</sup>	5.1×10 <sup>6</sup>
Arc Resistance	D-48/50+D-0.5/23	S	≥60	123
Dielectric Breakdown	D-48/50+D-0.5/23	KV	≥ 40	62
Dielectric Constant (1MHz)	C-24/23/50	-	≤ 5.4	4.6
Dissipation Factor (1MHz)	C-24/23/50	-	≤ 0.035	0.012
Thermal Stress	Unetched	288℃, solder dip	> 10s	100s
	Etched		No delamination	No delamination
Peel Strength	1oz	N/mm	≥ 1.05	1.45
	Cu. Foil		125℃	≥ 0.70
Flexural Strength	LW	A	≥ 415	587
	CW		≥ 345	531
Water Absorption	D-24/23	%	≤ 0.5	0.10
CTE Z-axis	Before Tg	TMA	≤60	55
	After Tg	TMA	≤300	280
	50~260℃	TMA	%	≤3.5
Td	10℃/min, N <sub>2</sub> , 5%Wt Loss	℃	≥325	335
T288	TMA	min	≥5	10
T260	TMA	min	≥30	60
CTI	IEC60112 Method	V	PLC 3(175V--249V)	PLC 3

Remarks: 1. Specification sheet: IPC-4101/124, 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.

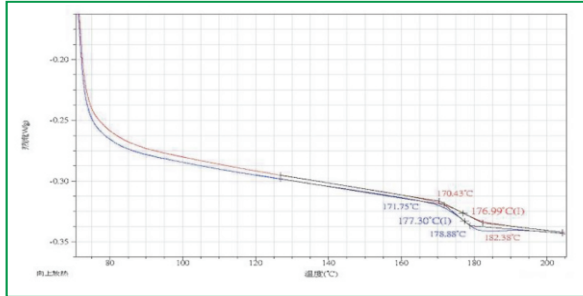
The figures following the letter symbols indicate with the first digit the duration of the preconditioning in hours, with the second digit the preconditioning temperature in ℃ and with the third digit the relative humidity.



# S1170

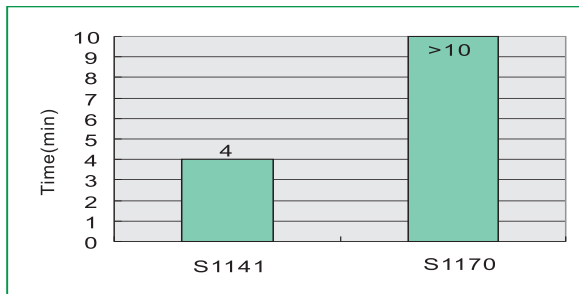
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## High Tg



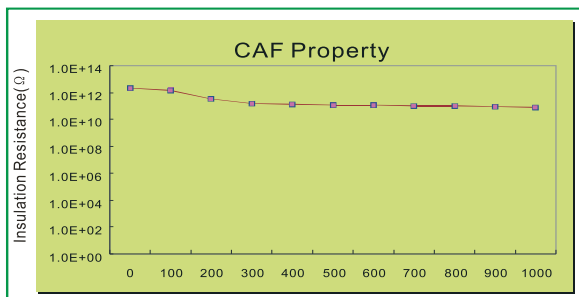
Test Sample: S1170 1.6mm CCL  
 Test Method: DSC  
 Test Results: 176.99°C/177.30°C

## Excellent Thermal Stress Resistance



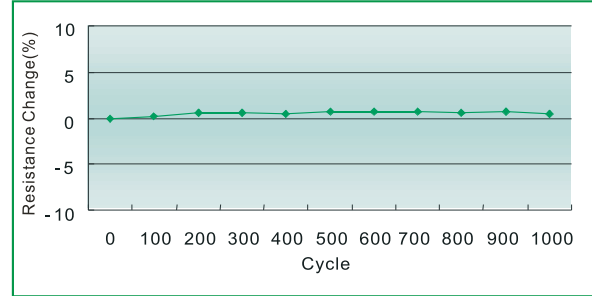
Test Sample: S1170 and Standard FR-4 CCL  
 Test Method: Solder dip 288°C  
 Test Results: S1170 is better than Standard FR-4 (time to delamination)

## Excellent Anti-CAF Performance



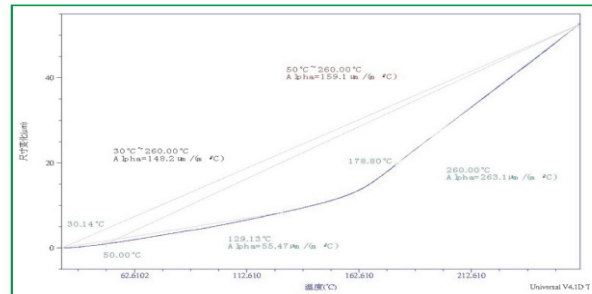
Test Sample: S1170 multi-layer Board  
 Test Method: 85°C/85%RH/DC 50V  
 Test Results: Pass 1000 hours

## Excellent Thermal Shock Resistance (Q1000)



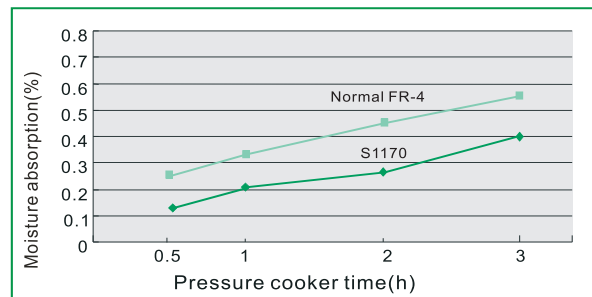
Test Sample: S1170 multi-layer Board  
 Test Method: Q1000 (-45°C ~ 130°C)  
 Test Results: Pass 1000 cycles

## Low Z-axis CTE



Test Sample: S1170 1.6mm CCL  
 Test Method: TMA  
 Test Results: 3.3% (50°C ~ 260°C)

## Low Water Absorption



Test Sample: S1170 and Standard FR-4 CCL  
 Test Method: PCT  
 Test Results: S1170 is better than Standard FR-4

## PURCHASING INFORMATION

Thickness	Copper foil	Standard Size	
0.05mm to 3.2mm	12 μm to 105 μm	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。



# S0701 PREPREG

(UL ANSI:FR-4) Bonding Prepreg For S1170

## 特点

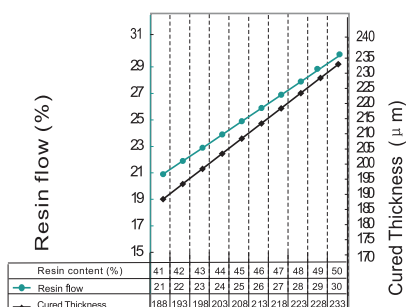
- 高Tg 170°C(DSC).
- 良好的粘合性能与PCB可加工性能。

## FEATURES

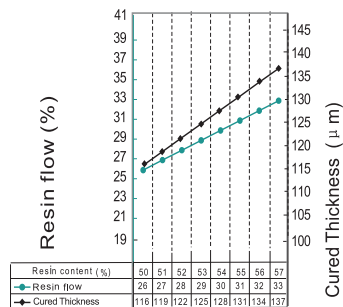
- High Tg 170°C (DSC).
- Excellent adhesion property and PCB processability.

## PREPREG PARAMETERS

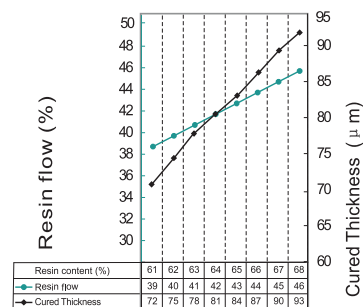
### 7628 TYPE PREPREG



### 2116 TYPE PREPREG



### 1080 TYPE PREPREG



Designation	Glass fabric type	Performance	Gel time (sec)	Resin Content (%)	Resin flow (%)	Cured Thickness (μm)	Standard Size (roll type)
S0701	106	High Performance	90±20	71±3	47±5	50±10	1,260mm×114.3m (125yards)
	106LD			71±3	47±5	50±10	
	1078LD			64±3	42±5	78±10	
	1080			X±3	X±5	X±10	
	2313			55±3	26±5	102±15	
	2116			X±3	X±5	X±15	
	1500			45±3	22±5	163±15	
	7628			X±3	X±5	X±20	

Type, Resin Content and Size Could be Available Upon Request

## PREPREG TEST METHOD

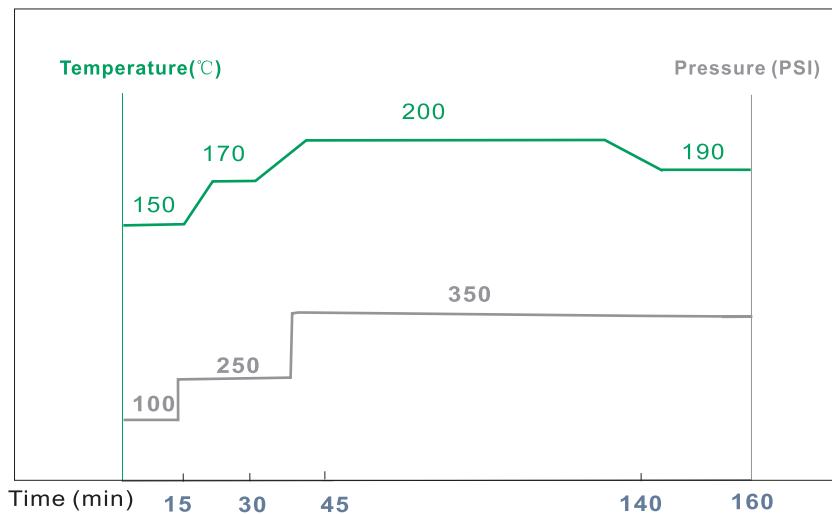
- Resin Content, Resin Flow, Gel Time: IPC-TM-650



# S0701 PREPREG

(UL ANSI:FR-4) Bonding Prepreg For S1170

## HOT PRESSING CYCLE



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

Curing time: >60min (185~195°C)

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°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.