![SYL logo]

S1170

(UL ANSI:FR-4.0) Excellent Thermal Resistance / High Tg

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.

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	Property Data: Typical Value
Tg	DSC	℃	≥170	175
Flammability	C-48/23/50 E-24/125+des	-	V-0	V-0
Volume Resistivity	After moisture resistance	MΩ-cm	≥ 10^6	3.5×10^8
	E-24/125		≥ 10^3	2.3×10^6
Surface Resistivity	After moisture resistance	MΩ	≥ 10^4	1.8×10^7
	E-24/125		≥ 10^3	5.1×10^6
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 / Etched	288℃, solder dip	-	>10s No delamination	100s No delamination
Peel Strength – 1oz Cu. Foil	288℃,10s	N/mm	≥ 1.05	1.45
	125℃		≥ 0.70	1.23
Flexural Strength – LW	A	MPa	≥ 415	587
Flexural Strength – CW			≥ 345	531
Water Absorption	D-24/23	%	≤ 0.5	0.10
CTE Z-axis – Before Tg	TMA	PPM/℃	≤60	55
CTE Z-axis – After Tg	TMA	PPM/℃	≤300	280
CTE Z-axis – 50~260℃	TMA	%	≤3.5	3.3
Td	10℃/min,N_2,5%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.

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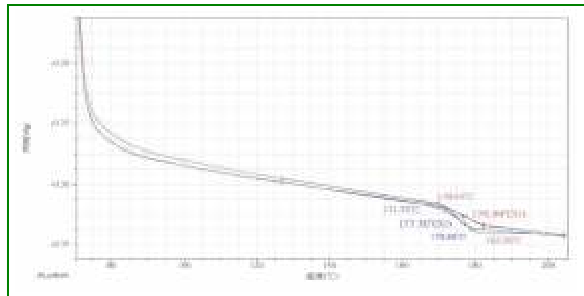
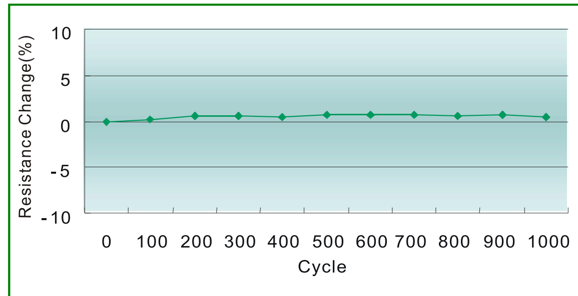
High Tg



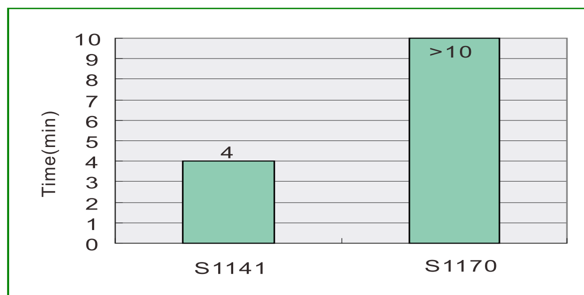
Test Sample: S1170 1.6mm CCL
Test Method: DSC
Test Results: 176.99℃/177.30℃

Excellent Thermal Shock Resistance（Q1000）



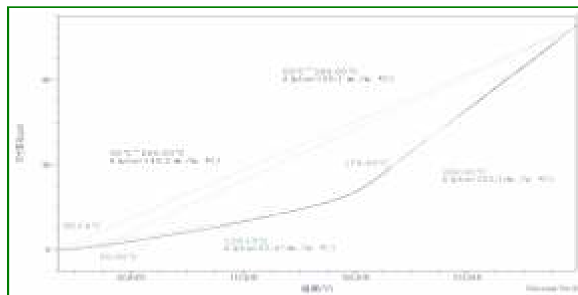
Test Sample: S1170 multi-layer Board
Test Method: Q1000（-45℃～130℃）
Test Results: Pass 1000 cycles

Excellent Thermal Stress Resistance



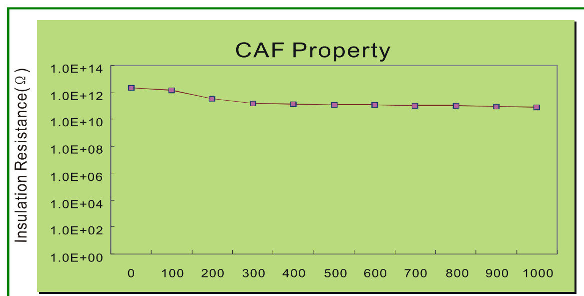
Test Sample: S1170 and Standard FR-4 CCL
Test Method: Solder dip 288℃
Test Results: S1170 is better than Standard FR-4 (time to delamination)

Low Z-axis CTE



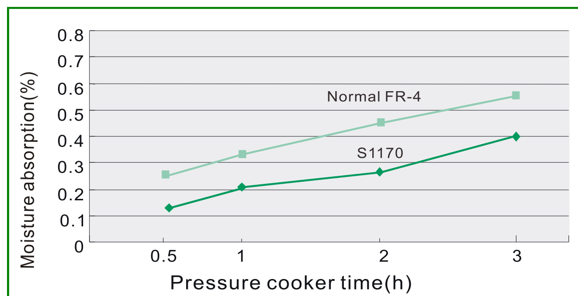
Test Sample: S1170 1.6mm CCL
Test Method: TMA
Test Results: 3.3% (50℃～260℃)

Excelent Anti-CAF Performance



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

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	12μm to 105μm	1,020×1,220mm (40″ ×48″) 1,070×1,220mm (42″ ×48″)	915×1,220mm (36″ ×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-4.0) Bonding Prepreg For S1170

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	71	0.05	3.8	0.023	1.260m X150m
	76	0.066	3.8	0.023	
1080/1078	62	0.075	4.0	0.02	1.260m X300m
	64	0.08	3.9	0.022	
	68	0.092	3.8	0.022	
2313	54	0.104	4.1	0.020	
	56	0.11	4.1	0.020	
2116	53	0.129	4.1	0.018	1.260m X250m
	55	0.138	4.1	0.018	
	57	0.144	4.0	0.018	
1506	47	0.172	4.2	0.017	1.260m X150m
7628	41	0.19	4.4	0.015	
	45	0.203	4.3	0.016	
	50	0.237	4.3	0.017	

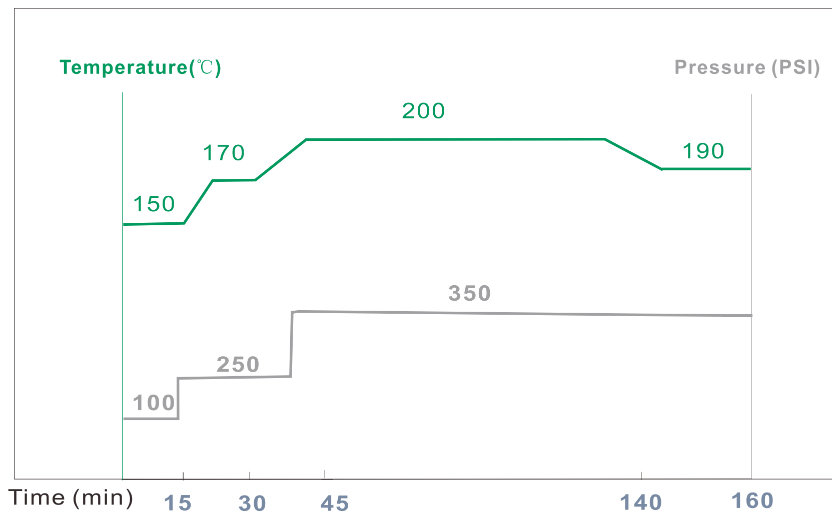
Remark: DK and Df are tested according to IPC TM-650 2.5.5.9

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

S0701 PREPREG

(UL ANSI:FR-4.0) Bonding Prepreg For S1170

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.