



# S1000-2M/ S1000-2MB (FR-4)

## High Performance, Low CTE, Hi-Tg Lead-free

### FEATURES

- Lower Z-axis CTE, excellent through-hole reliability.
- Excellent PCT performance and low water absorption, high heat and humidity resistance.
- Excellent mechanical processibility and thermal resistance, lead-free compatible FR-4.

### APPLICATIONS

Suitable for high-layer count PCB. Widely used in computing, communication, automotive electronics, and etc.

### GENERAL PROPERTIES

Items	Condition	Unit	Property Data	
			Spec	Typical Value
Tg	DMA	°C	≥180	185
Flammability	C-48/23/50, E-24/125	Rating	V-0	V-0
Volume Resistivity	After moisture resistance	MΩ-cm	≥10 <sup>6</sup>	6.79E+07
	E-24/125		≥10 <sup>3</sup>	2.19E+08
Surface Resistivity	After moisture resistance	MΩ	≥10 <sup>4</sup>	3.16E+06
	E-24/125		≥10 <sup>3</sup>	2.24E+07
Arc Resistance	D-48/50+D-0.5/23	S	≥60	133
Dielectric Breakdown	D-48/50+D-0.5/23	KV	≥40	45KV+NB
Dielectric Constant	(1GHz)	C-24/23/50	-	4.6
	(1MHz)	C-24/23/50	-	≤5.4
Dissipation Factor	(1GHz)	C-24/23/50	-	0.018
	(1MHz)	C-24/23/50	-	≤0.035
Thermal Stress	288°C, solder dip	-	>10s No Delamination	>100s No Delamination
Peel Strength (1 Oz)	288°C/10s	N/mm	≥1.05	1.3
Flexural Strength	LW	Mpa	≥415	567
	CW		≥345	442
Water Absorption	D-24/23	%	≤0.5	0.08
CTE(Z-axis)	Before Tg	PPM/°C	≤60	41
	After Tg	PPM/°C	≤300	208
	50-260°C	%	≤3.0	2.4
Td	Wt5%loss	°C	≥340	355
T260	TMA	min	≥30	60
T288	TMA	min	≥5	30
T300	TMA	min	≥2	15
CTI	IEC60112Method	V	PLC3(175~250)	PLC3 (200V)

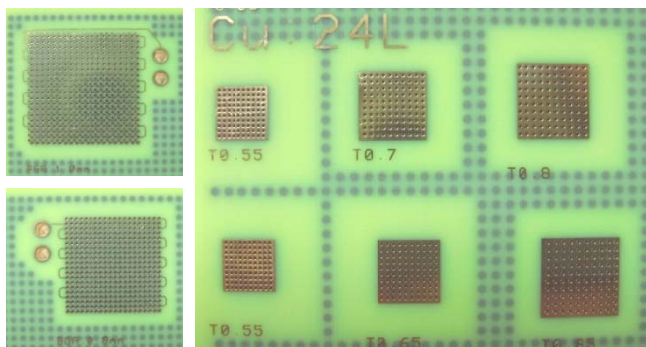
Specimen thickness: 1.6mm. Test method is according to IPC-TM-650.

All test data provides are typical values and not intended to be specification values. Shengyi Technology reserves the right to make changes without further notice to the product herein to improve reliability, function or design.

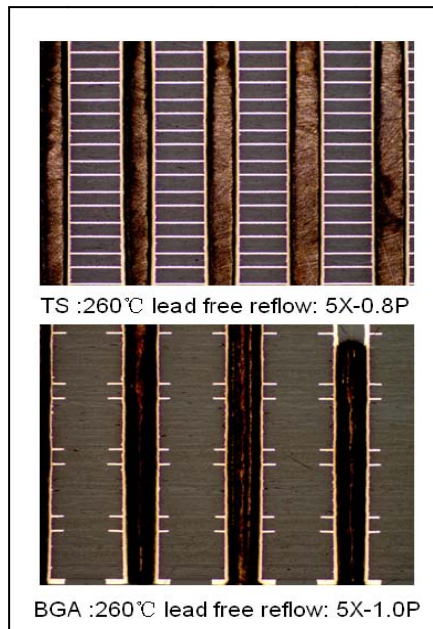
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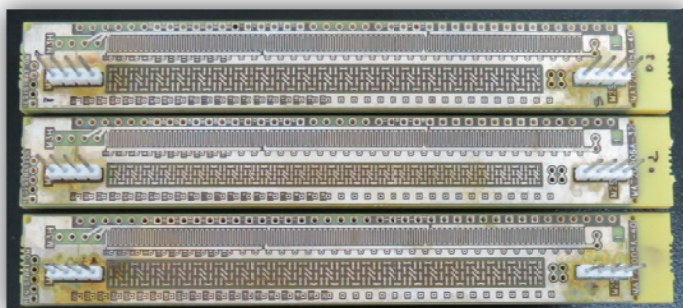
## High layer count application evaluation



24-layer, core 0.13 H/H, PP: 1080/2116  
 Overall thickness: 4.0mm  
 Min. hole size: 0.35mm  
 Aspect ratio: 11.5:1  
 260C Lead free reflow: 5X, OK

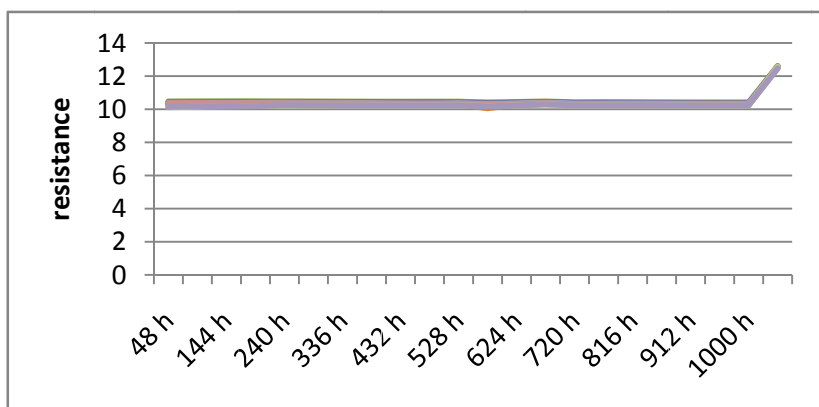


## IST



20L, 1080+2116 prepreg construction,  
 1.0mmP, 0.8mmP  
 Precondition: 6X reflow (Peak 260°C)  
 Test condition: Room temp. ~ 150°C  
 Failure Method: Power/sense  
 Result: Power cycles > 2000

## Anti-CAF performance



20L, TH-TH 16mil, 20mil  
 Precondition:  
 6X LF reflow (Peak 260°C)  
 CAF test condition:  
 65°C/ 87%/ 100V DC  
 Result: Passed 1000 hours

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## ■ PREPREG PARAMETERS

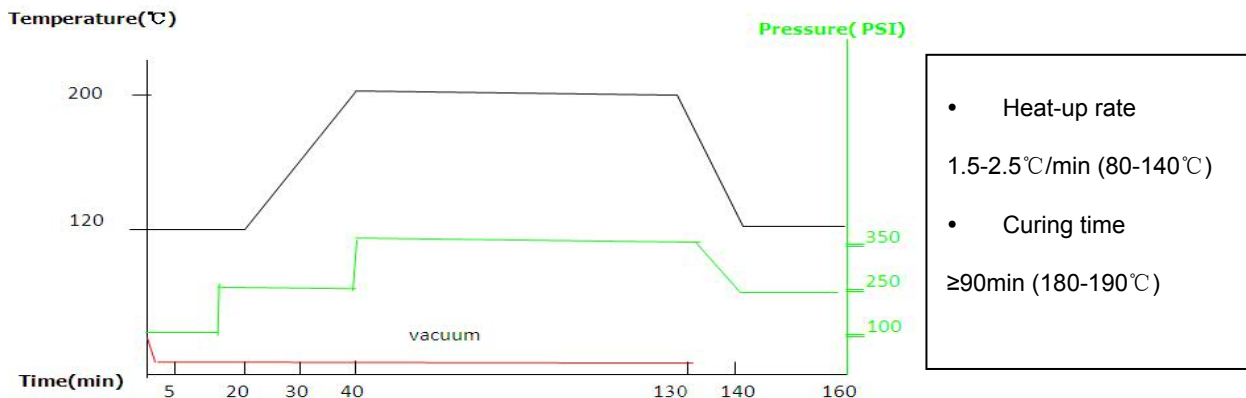
Designation	Glass fabric type	Performance	Gel time (sec)	Resin content (%)	Resin flow (%)	Cured thickness (um)	Standard size (roll type)
S1000-2M	106	High Performance	140±20	73±3	27±10	50	1,260mmX114.3m (125yards)
	1080/1078			77±3	35±10	60	
				65±3	28±10	75	
	2313			69±3	36±10	85	
	2116	Lower Z-axis CTE		57±3	25±10	100	
				51±3	23±10	110	
				56±3	28±10	125	
				46±3	19±10	150	
1506	47±3	22±10	200				
7628							

Type Resin content could be Available upon request.

## ■ Prepreg Test Method

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

## ■ Hot Pressing Cycle:



## ■ Storage Condition:

- The hot pressing parameter is for your reference only. Please turn to Shengyi Technology Co., Ltd for detailed information.
- For short term storage, it is good to keep it in <23°C and <50% RH within three months.
- For long term storage, keep it in 5°C within 6 months, it should be normalized in the room temperature at least 4 hours before use.
- Beware of moisture, if kept in normal conditions, prepreg absorbs moisture and its bonding strength is weakened. So always keep it wrapped in damp-proof material.
- Avoid ultraviolet rays and strong lights.