S1000-2M

(UL ANSI: FR-4.0) High Performance, Low CTE, Hi-Tg Lead-free

特点

- 无铅兼容FR-4.0板材。
- 高Tg170℃(DSC), UV Blocking和AOI兼容。
- 高耐热性。
- 低的Z轴热膨胀系数。
- 优异的通孔可靠性。
- 优异的Anti-CAF性能。
- 低吸水率和耐高温高湿性。
- 优良的机械加工性能。

应用领域

适用于高多层PCB
广泛应用于电脑、通讯和汽车电子等

FEATURES

- Lead-free compatible FR-4.0 laminate.
- Tg 170℃ (DSC), UV Blocking / AOI compatible.
- High heat resistance .
- Low Z-axis CTE.
- Excellent through-hole reliability.
- Excellent anti-CAF performance.
- Low water absorption.
- Excellent mechanical processibility

APPLICATIONS

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

GENERAL PROPERTIES

Items		Condition	Unit	Property Data	
				Spec	Typical Value
Tg		DSC	℃	≥170	180
		DMA		≥170	185
Flammability		C-48/23/50	Rating	V-0	V-0
		E-24/125			
Volume Resistivity		After moisture resistance	MΩ-cm	≥10^6	8.66E+08
		E-24/125		≥10^3	7.18E+06
Surface Resistivity		After moisture resistance	MΩ	≥10^4	2.17E+07
		E-24/125		≥10^3	8.64E+06
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	4.9
Dissipation Factor	(1GHz)	C-24/23/50	-	-	0.018
	(1MHz)	C-24/23/50	-	≤0.035	0.015
Thermal Stress		288℃, solder dip	-	>10s No Delamination	>100s No Delamination
Peel Strength (1 Oz)		288℃/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/℃	≤60	41
		After Tg	PPM/℃	≤300	208
		50-260℃	%	≤3.0	2.4
Td		Wt5%loss	℃	≥340	355
T260		TMA	min	≥30	60
T288		TMA	min	≥15	30
T300		TMA	min	≥2	15
CTI		IEC60112Method	Rating	PLC 3(175V-249V)	PLC 3

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

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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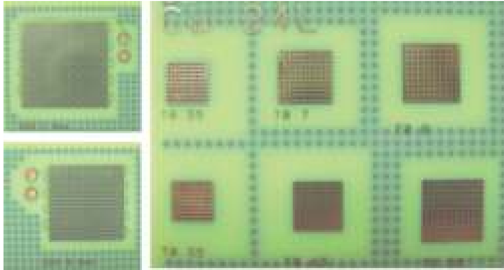
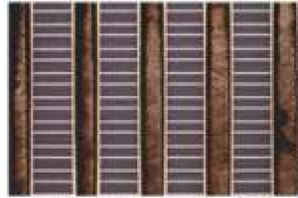
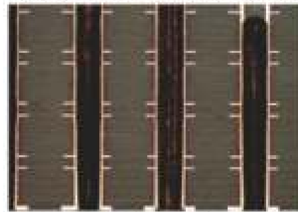
High layer count application evaluation



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

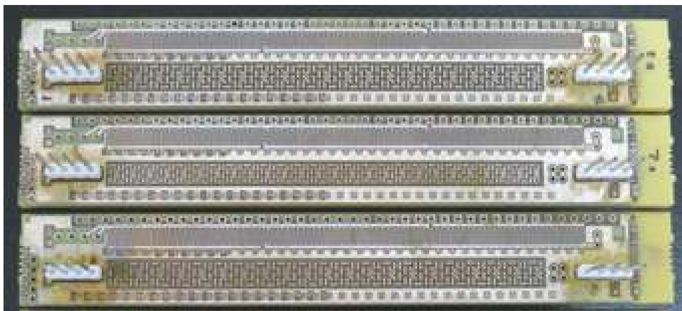


TS :260℃ lead free reflow: 5X-0.8P



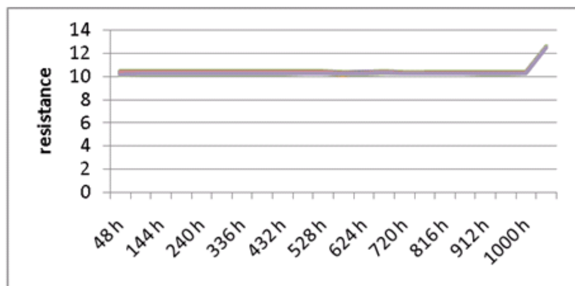
BGA :260℃ lead free reflow: 5X-1.0P

IST



3.1m, 1080+2116 prepreg construction,
Hole size： 0.3mm
1.0mmP, 0.8mmP
Precondition: 6X reflow (Peak 260℃)
Test condition: Room temp. ~ 150℃
Failure Method: Power/sense
Result: Power cycles > 2000

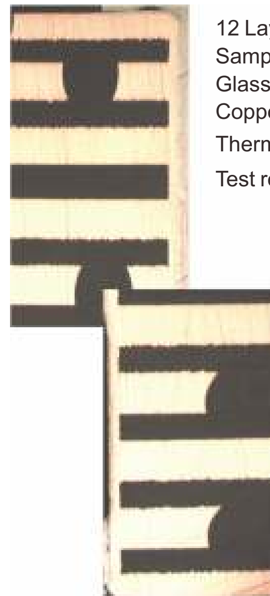
Anti-CAF performance



20L, TH-TH 16mil, 20mil;
Test condition: 65℃/87%/100V DC;
Precondition: 6X lead-free reflow

Glass types:106/1080/2116
Hole size: 0.30mm
Result: Passed 1000hrs

Heavy copper board application



12 Layer – 5oz Inner Copper
Sample Construction
Glass types(1080/106)
Copper weights(3oz/5oz)
Thermal Stress： 288℃/10s/dip, 3X
Test result： No Resin Crack &
No Delamination

S1000-2MB PREPREG

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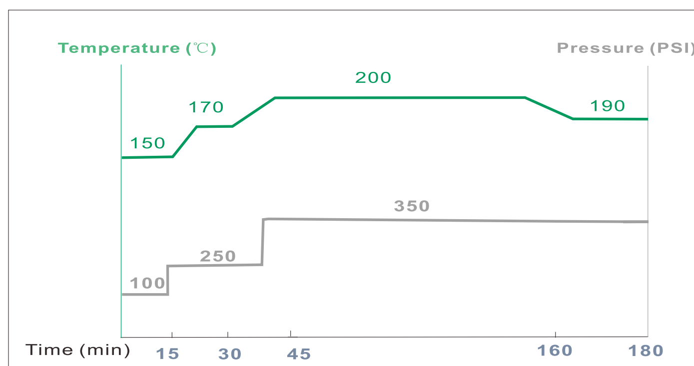
PREPREG PARAMETERS

Glass fabric type	Resin content (%)	Cured thickness (mm)	DK(1GHz)	Df(1GHz)	Standard size (Roll type)
106/1037	72	0.050	4.0	0.019	1.260m X150m
	77	0.060	3.9	0.020	
1080/1078	64	0.072	4.3	0.018	1.260m X300m
	69	0.086	4.1	0.019	
2313/3313	56	0.096	4.5	0.016	
2116	51	0.108	4.6	0.015	1.260m X250m
	55	0.120	4.5	0.016	
	57	0.127	4.6	0.016	
1506	45	0.150	4.8	0.014	1.260m X150m
7628	44	0.187	4.8	0.014	
	46	0.196	4.8	0.014	
	50	0.216	4.7	0.015	
	52	0.227	4.6	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.

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:

- 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℃ and <50% RH within three months.
- For long term storage, keep it in 5℃ 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.