S1000-2

(ANSI:FR-4) Low CTE / Hi-Tg / Excellent Thermal Resistance

特点

- 无铅兼容FR-4板材。
- 高Tg170℃(DSC), UV Blocking和AOI兼容。
- 高耐热性。
- 较低Z-CTE值。
- 优异的通孔可靠性。
- 优异的Anti-CAF性能。
- 低吸水率。

应用领域

适合于厚铜、厚径比较大结构的高多层印制线路板，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。

FEATURES

- Lead-free compatible FR-4 laminate.
- Tg 170℃ (DSC), UV Blocking / AOI compatible.
- High heat resistance .
- Lower Z-axis CTE.
- Excellent through-hole reliability.
- Excellent anti-CAF performance.
- Low water absorption.

APPLICATIONS

Suitable for high aspect ratio and high-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	180
Flammability		C-48/23/50	-	V-0	V-0
		E-24/125+des			
Volume Resistivity		After moisture resistance	MΩ-cm	≥ 10^6	2.2×10^8
		E-24/125		≥ 10^3	4.5×10^6
Surface Resistivity		After moisture resistance	MΩ	≥ 10^4	7.9×10^7
		E-24/125		≥ 10^3	1.7×10^6
Arc Resistance		D-48/50+D-0.5/23	S	≥ 60	100
Dielectric Breakdown		D-48/50+D-0.5/23	KV	≥ 40	63
Dielectric Constant (1MHz)		C-24/23/50	-	≤ 5.4	4.8
Dissipation Factor (1MHz)		C-24/23/50	-	≤ 0.035	0.013
Thermal Stress	Unetched	288℃, solder dip	-	>10s No delamination	100s No delamination
	Etched				
Peel Strength	1oz Cu. Foil	288℃,10s	N/mm	≥ 1.05	1.38
		125℃		≥ 0.70	1.07
Flexural Strength	LW	A	MPa	≥ 415	562
	CW			≥ 345	518
Water Absorption		D-24/23	%	≤ 0.5	0.10
CTE Z-axis	Before Tg	TMA	PPM/℃	≤60	45
	After Tg	TMA	PPM/℃	≤300	220
	50~260℃	TMA	%	≤3.0	2.8
Td		10℃/min,N_2,5%Wt Loss	℃	≥340	345
T288		TMA	min	≥15	20
T260		TMA	min	≥30	60
T300		TMA	min	≥2	5
CTI		IEC60112 Method	V	PLC 3(175V--249V)	PLC 3

Remarks: All the data listed above can meet IPC-4101/126 requirement.
Specimen Thickness:1.6mm
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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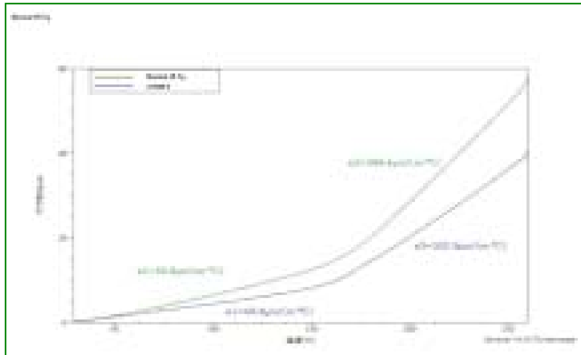
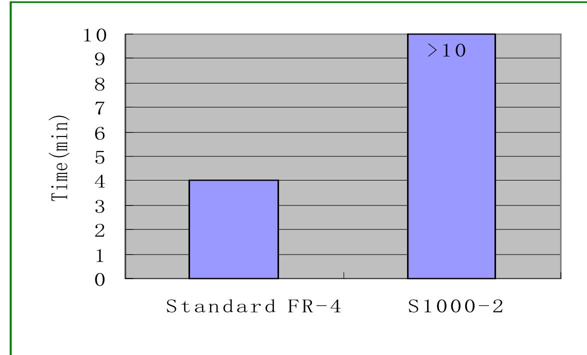
■ Lower Z-axis CTE



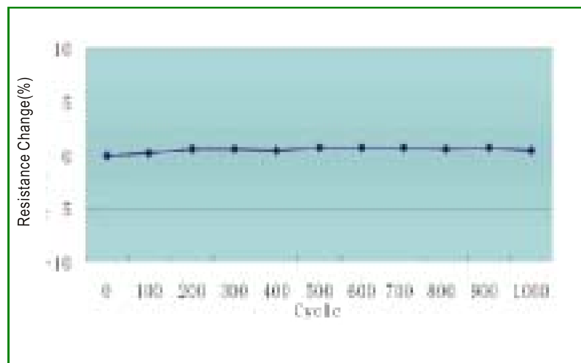
Test Sample: S1000-2 and standard FR-4 CCL
Test Method: TMA
Test Results: The Z-CTE of S1000-2 is lower than that of standard FR-4

■ Excellent Thermal Stress Resistance



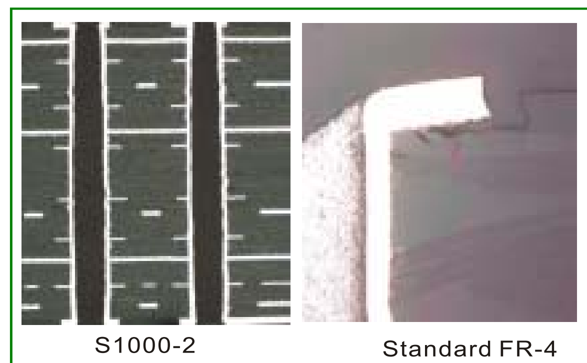
Test Sample: S1000-2 and standard FR-4 CCL
Test Method: Solder dip 288℃
Test Results: S1000-2 is better than standard FR-4 (time to delamination)

■ High Thermal Shock Resistance



Test Sample: S1000-2 multi-layer board
Test Method: Q1000（-45℃～130℃）
Test Results: Pass 1000 cycles

■ Excellent PTH Reliability



S1000-2　　Standard FR-4

Test Sample: S1000-2 and standard FR-4 CCL
Test Method: Q1000 and micro-section
Test Results: Comparing to standard FR-4, S1000-2 has less lifted lands, barrel crack, and corner crack.

S1000-2B PREPREG

(ANSI:FR-4) Bonding Prepreg For S1000-2

特点

- 高Tg 170℃(DSC)。
- 良好的粘结性能与PCB加工性能。

FEATURES

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

PREPREG PARAMETERS

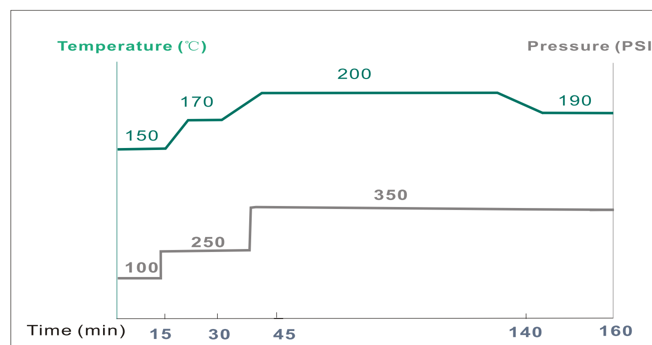
Designation	Glass fabric type	Performance	Gel time (sec)	Resin Content (%)	Resin flow (%)	Cured Thickness (μm)	Standard Size (roll type)
S1000-2B	106	High Performance	115±20	72±3	37±5	50±10	1,260mm×114.3m (125yards)
	106LD			72±3	37±5	50±10	
	1078LD			65±3	37±5	78±10	
	1080			65±3	37±5	78±10	
	1086LD			62±3	34±5	78±10	
	2112			58±3	31±5	90±15	
	2113			57±3	27±5	100±15	
	2313			56±3	27±5	100±15	
	3313			56±3	27±5	100±15	
	2116			53±3	29±5	120±15	
	2165			53±3	27±5	140±15	
	1500			46±3	23±5	160±15	
	7628			44±3	24±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:1.5~2.5℃/min（80~140℃）
Curing time:>60min（185~195℃）

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.