S1000

(UL ANSI:FR-4.0)Low Z-CTE

FEATURES

- Lead-free compatible FR-4 Laminate.
- Tg(DSC)155℃,UV Blocking/ AOI compatible.
- Excellent thermal reliability.
- Z-CTE 30~35% less than conventional FR-4.
- Excellent T/H reliability.
- Excellent anti-CAF and Q1000 performance.
- Low water absorption.

APPLICATIONS

Computer, Instrumentation, VCR,
communication equipment,
automotive electronics,
electronic game machine, and etc.

GENERAL PROPERTIES

Test Item		Treatment Condition	Unit	Property Data	
				SPEC	Typical Value
Tg		DSC	℃	≥150	155
Flammability		C-48/23/50	-	V-0	V-0
		E-24/125			
Volume Resistivity		After moisture resistance	MΩ-cm	$\geq 10^6$	7.4×10^8
		E-24/125		$\geq 10^3$	5.6×10^6
Surface Resistivity		After moisture resistance	MΩ	$\geq 10^4$	7.6×10^7
		E-24/125		$\geq 10^3$	2.8×10^6
Arc Resistance		D-48/50+D-0.5/23	S	≥60	147
Dielectric Breakdown		D-48/50+D-0.5/23	KV	≥ 40	45
Dielectric Constant (1MHz)		C-24/23/50	-	≤ 5.4	4.9
Dissipation Factor (1MHz)		C-24/23/50	-	≤ 0.035	0.011
Thermal Stress	Unetched	288℃,solder dip	-	>10s No delamination	100s No delamination
	Etched				
Peel Strength	1oz Cu. Foil	288℃,10s	N/mm	≥1.05	1.4
		125℃		≥ 0.70	1.2
Flexural Strength	LW	A	MPa	≥ 415	540
	CW			≥ 345	450
Water Absorption		D-24/23	%	≤ 0.5	0.09
CTE	Before Tg	TMA	PPM/℃	≤60	49
	After Tg	TMA	PPM/℃	≤300	250
Z-axis	50~260℃	TMA	%	≤3.5	3.4
Td		10℃/min,N_2	℃	≥325	335
T288		TMA	min	≥5	10
T260		TMA	min	≥30	60
CTI		IEC60112	V	PLC 3(175V--249V)	PLC 3

Remarks: 1.Specification sheet:IPC-4101/99, 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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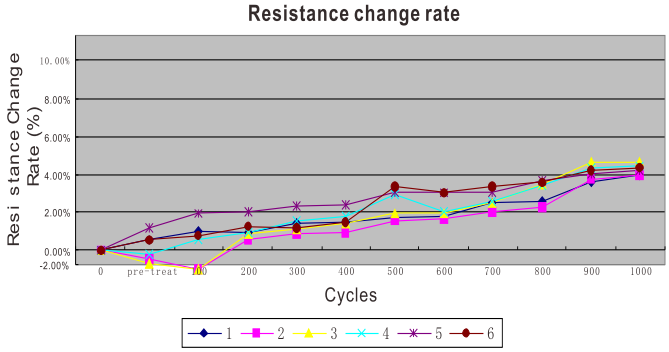
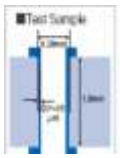
Thermal Change Test - Q1000

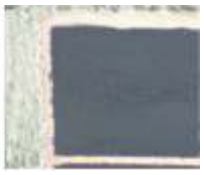
A) Pre-Treatment:
125 ℃/ 2hour in the oven.
B) Thermal shock condition:
-40℃(30min)~+125℃(30min),transfer time<2min.





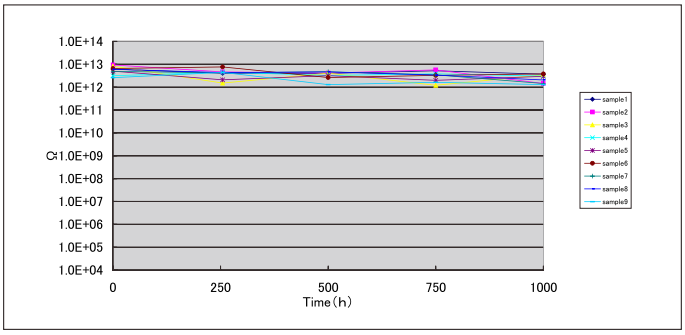
Micro-section after Q1000

X200 micro-section



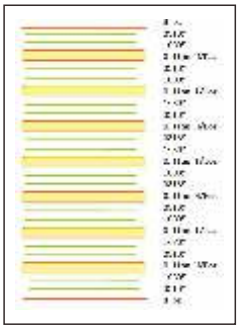
X50 micro-section

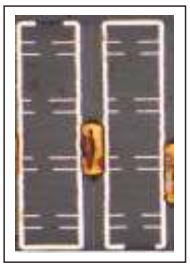
Anti-CAF Test



Specimen: Pitch=0.7mm, ϕ=0.25mm, DC50V/85℃/85%RH

High layer count application evaluation





Structure：16-Layer, 0.30mm/1.0Pitch
Overall thickness：2.4mm
Test：260 ℃ reflow 5times

PURCHASING INFORMATION

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

S1000B PREPREG

(UL ANSI:FR-4.0) Bonding Prepreg For S1000

FEATURES

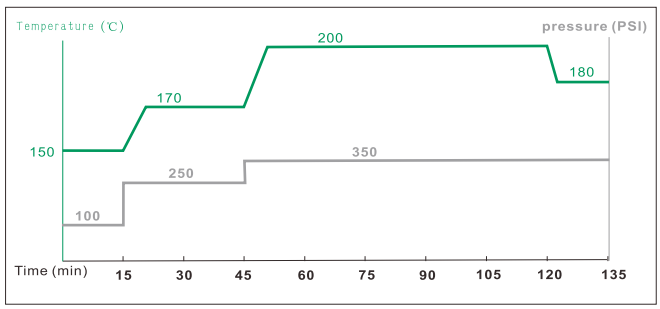
- Tg 155℃ and good thermal resistance resistance.
- Low Z- CTE.
- Excellent chemical resistance.
- Excellent adhesion property and PCB processability.
- UV Blocking /AOI compatible.

PREPREG PARAMETERS

Glass fabric type	Resin content (%)	Cured thickness (mm)	DK(1GHz)	Df(1GHz)	Standard size (Roll type)
106/1037	73	0.050	3.7	0.015	1.260m X150m
	78	0.063	3.6	0.016	
1080/1078	63	0.070	3.9	0.014	1.260m X300m
	65	0.075	3.9	0.014	
	68	0.082	3.8	0.014	
2313	55	0.095	4.1	0.013	
	58	0.100	4.1	0.013	
2116	55	0.120	4.1	0.013	1.260m X250m
	58	0.130	4.1	0.013	
1506	45	0.150	4.4	0.012	1.260m X150m
	48	0.160	4.3	0.012	
7628	43	0.185	4.4	0.012	
	45	0.193	4.4	0.012	
	47	0.202	4.3	0.012	
	50	0.218	4.3	0.012	

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: >45min (180~190℃)
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.