



S1170

(ANSI:FR-4) Excellent Thermal Resistance / High Tg

特点

- 无铅兼容FR-4板材。
- 高Tg170℃(DSC)。
- 高耐热性。
- 优异的Anti-CAF性能。
- 低Z-CTE。
- 低吸水性。

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.

应用领域

适合于高多层印制线路板，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。

APPLICATIONS

Suitable for high-count layer PCB. Widely used in computer, communication equipment, precise apparatus and instrument, router, etc.

GENERAL PROPERTIES

Test Item	Treatment Condition	Unit	Property Data	
			SPEC	Typical Value
Tg	DSC	℃	≥170	175
Flammability	C-48/23/50	-	V-0	V-0
	E-24/125+des			
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 ⁵
	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	288℃, solder dip	>10s	100s
	Etched		No delamination	No delamination
Peel Strength	1oz	288℃, 10s	≥1.05	1.45
	Cu. Foil	125℃	≥0.70	1.23
Flexural Strength	LW	A	≥415	587
	CW		≥345	531
Water Absorption	D-24/23	%	≤0.5	0.10
CTE Z-axis	Before Tg	TMA	≤60	55
	After Tg	TMA	≤300	280
	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	175~250(grade3)	200

Remarks: All the data listed above can meet IPC-4101/124 requirement.
Specimen Thickness:1.6mm

Explanations: C = Humidity conditioning;
D = Immersion conditioning in distilled water;
E = Temperature conditioning.

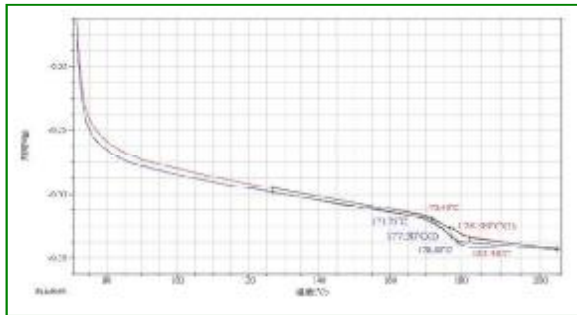
The figures following the letter symbols indicate with the first digit the duration of the preconditioning in hours, with the second digit the preconditioning temperature in ℃ and with the third digit the relative humidity.



S1170

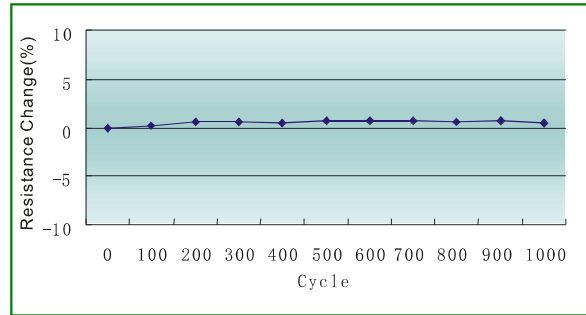
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High Tg



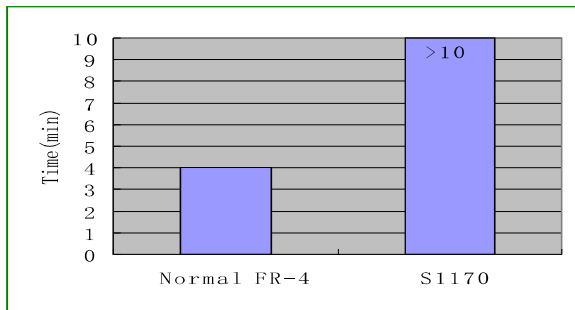
Test Sample: S1170 1.6mm CCL
 Test Method: DSC
 Test Results: 176.99°C/177.30°C

Excellent Thermal Shock Resistance (Q1000)



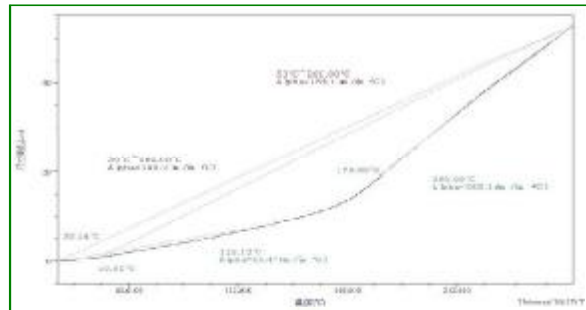
Test Sample: S1170 multi-layer Board
 Test Method: Q1000 (-45°C ~ 130°C)
 Test Results: Pass 1000 cycles

Excellent Thermal Stress Resistance



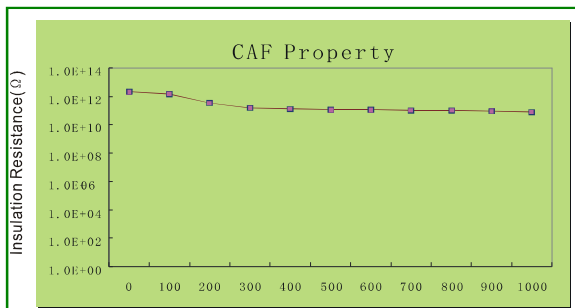
Test Sample: S1170 and normal FR-4 CCL
 Test Method: Solder dip 288°C
 Test Results: S1170 is better than normal FR-4 (time to delamination)

Low Z-axis CTE



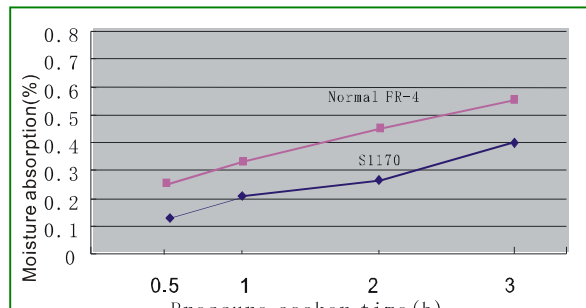
Test Sample: S1170 1.6mm CCL
 Test Method: TMA
 Test Results: 3.3% (50°C ~ 260°C)

Excellent Anti-CAF Performance



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

Low Water Absorption



Test Sample: S1170 and normal FR-4 CCL
 Test Method: PCT
 Test Results: S1170 is better than normal FR-4