



S1180

(ANSI:FR-4) High Reliability / High Tg

特点

- 无铅兼容FR-4板材。
- 高Tg180℃ (DSC), UV Blocking和AOI兼容。
- 高耐热性。
- 低Z-CTE。
- 优异的通孔可靠性。
- 优异的anti-CAF性能。

FEATURES

- Lead-free compatible FR-4 laminate.
- High Tg 180℃ (DSC), UV Blocking/AOI compatible.
- Excellent thermal resistance.
- Low Z-axis CTE.
- Excellent T/H reliability.
- Excellent anti-CAF performance.

应用领域

适合于Tg180℃要求、耐热性要求更高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。

APPLICATIONS

Suitable for Tg 180℃, and higher thermal resistance requirement high-count 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	185	
Flammability	C-48/23/50	-	V-0	V-0	
	E-24/125+des				
Volume Resistivity	After moisture resistance	MΩ-cm	≥ 10 ⁶	4.7×10 ⁸	
	E-24/125		≥ 10 ³	3.1×10 ⁷	
Surface Resistivity	After moisture resistance	MΩ	≥ 10 ⁴	6.5×10 ⁶	
	E-24/125		≥ 10 ³	1.2×10 ⁶	
Arc Resistance	D-48/50+D-0.5/23	S	≥60	125	
Dielectric Breakdown	D-48/50+D-0.5/23	KV	≥ 40	64	
Dielectric Constant (1MHz)	C-24/23/50	-	≤ 5.4	4.6	
Dissipation Factor (1MHz)	C-24/23/50	-	≤ 0.035	0.014	
Thermal Stress	Unetched	288℃, solder dip	> 10s	100s	
	Etched		No delamination	No delamination	
Peel Strength	1oz	288℃, 10s	≥ 1.05	1.6	
	Cu. Foil	125℃	≥ 0.70	1.4	
Flexural Strength	LW	A	≥ 415	587	
	CW		≥ 345	531	
Water Absorption	D-24/23	%	≤ 0.35	0.10	
CTE Z-axis	Before Tg	TMA	PPM/℃	≤60	56
	After Tg	TMA	PPM/℃	≤300	250
	50~260℃	TMA	%	≤3.0	2.9
Td	10℃/min, N ₂ , 5%Wt Loss	℃	≥340	345	
T260	TMA	min	≥30	60	
T288	TMA	min	≥15	20	
T300	TMA	min	≥2	11	
CTI	IEC60112 Method	V	175~250 (grade3)	200	

Remarks: All the data listed above can meet IPC-4101/129 requirement.
Specimen Thickness:1.6mm

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

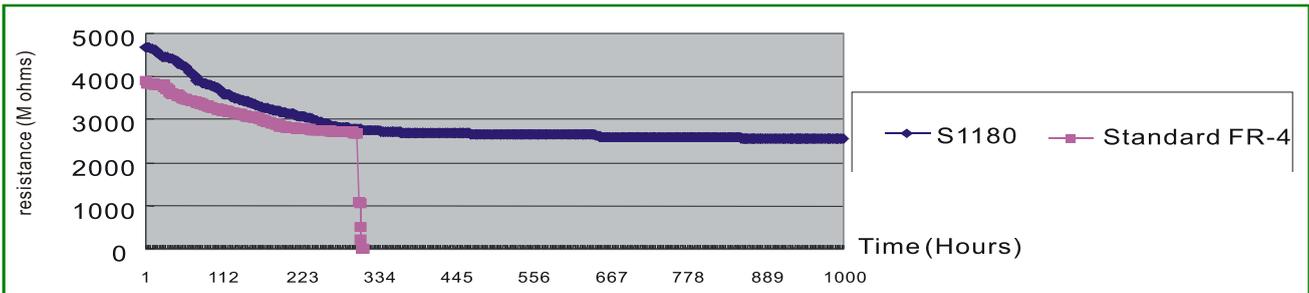
The figures following the letter symbols indicate with the first digit the duration of the preconditioning in hours, with the second digit the preconditioning temperature in ℃ and with the third digit the relative humidity.



S1180

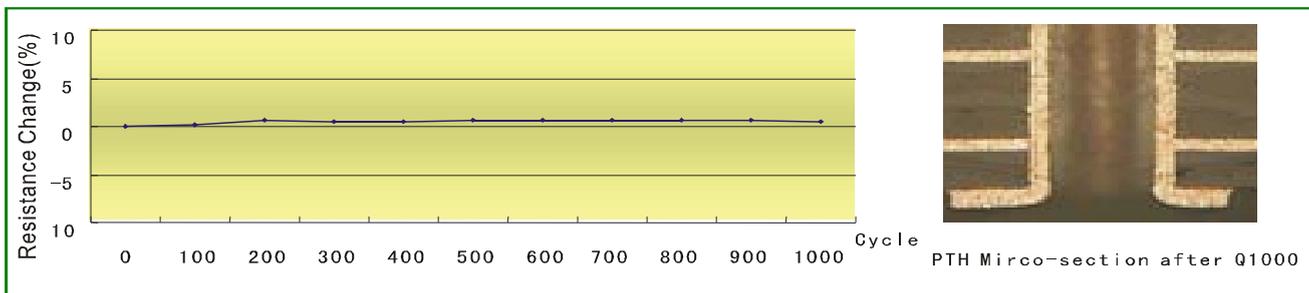
(ANSI:FR-4) High Reliability / High Tg

Good anti-CAF Performance



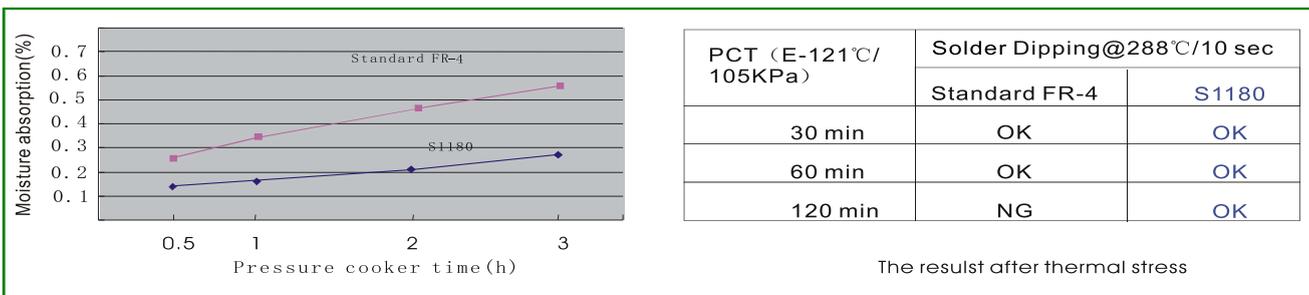
Test Sample: S1180 and standard FR-4 multi-layer board
 Test Method: 85°C/85%RH/DC 50V
 Test Results: S1180 can pass 1000 hours, but standard FR-4 failed

Higher PTH Reliability



Test Sample: S1180 multi-layer board
 Test Method: Q1000 (-45°C ~130°C)
 Test Results: Pass 1000 cycles, and has less lifted lands and PTH corner crack

Low Water Absorption and Good PCT Performance



PCT (E-121°C/ 105KPa)	Solder Dipping@288°C/10 sec	
	Standard FR-4	S1180
30 min	OK	OK
60 min	OK	OK
120 min	NG	OK

The result after thermal stress

Test Sample: S1180 and standard FR-4 CCL
 Test Method: PCT
 Test Results: After PCT, the water absorption of S1180 is lower than that of standard FR-4, and the thermal stress resistance of S1180 is better.

S1180B PREPREG

(ANSI:FR-4) Bonding Prepreg For S1180

特点

- 高Tg 180℃。
- 良好的粘合性能与PCB可加工性能。
- 与S1180芯板配套使用。

FEATURES

- Higher heat resistance with Tg 180℃ (DSC).
- Good adhesion property and PCB processability.
- Coordinate with S1180 T/C.

PREPREG PARAMETERS

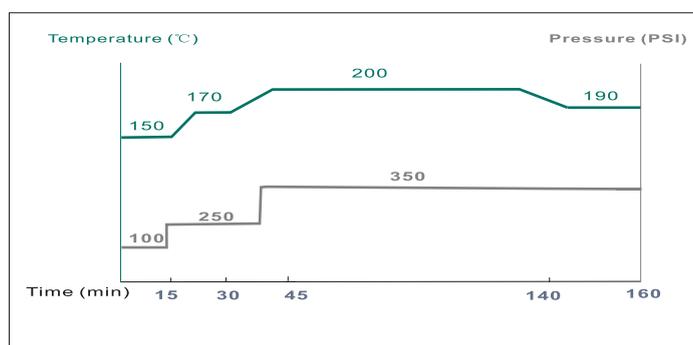
Designation	Glass fabric type	Performance	Gel time (sec)	Resin Content (%)	Resin flow (%)	Cured Thickness (μm)	Standard Size (roll type)
S1180B	106	High Performance	120±20	71±3	37±5	50±10	1,260mm×114.3m (125yards)
	106LD			71±3	37±5	50±10	
	1080			64±3	36±5	77±10	
	1080LD			61±3	33±5	76±10	
	2112			57±3	30±5	90±15	
	2113			56±3	26±5	100±15	
	2313			55±3	26±5	100±15	
	3313			55±3	26±5	100±15	
	2116			52±3	28±5	120±15	
	2165			52±3	26±5	140±15	
	1500			45±3	22±5	160±15	
	7628			43±3	23±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

- For short term storage, keep in 20℃, 50% RH within 3 months .
- For long term storage, keep in 5℃ within 6 months. 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.