# S1000

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

## 特点

- 无铅兼容FR-4板材。
- Tg(DSC)155℃,UV Blocking 和 AOI兼容。
- 优良的耐热性。
- 比普通FR-4降低约30～35%的Z轴热膨胀系数。
- 优良的通孔可靠性。
- 优异的耐CAF性和Q1000性能。
- 低吸水率。

## 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.

## 应用领域

电脑、仪器仪表、摄像机、通讯设备、汽车、电子游戏机等。

## 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 | $\geq 10^6$ | $7.4\times10^8$ |
| | | E-24/125 | | $\geq 10^3$ | $5.6\times10^6$ |
| Surface Resistivity | | After moisture resistance | MΩ | $\geq 10^4$ | $7.6\times10^7$ |
| | | E-24/125 | | $\geq 10^3$ | $2.8\times10^6$ |
| 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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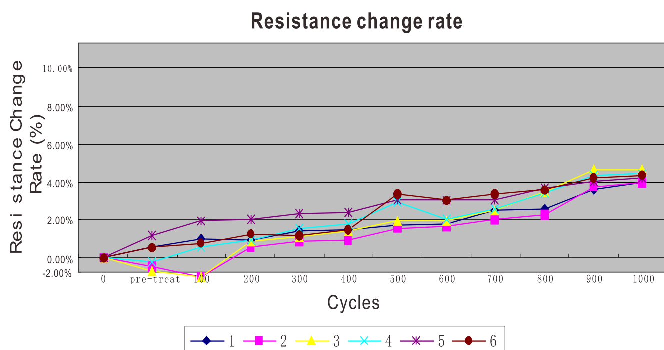
### Thermal Change Test - Q1000

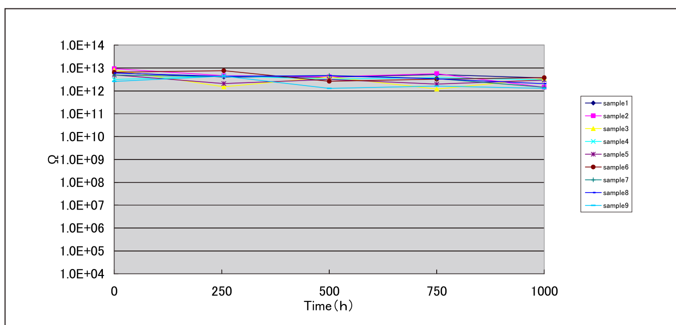
A) Pre-Treatment:
125 ℃/ 2hour in the oven.
B) Thermal shock condition:
-40℃(30min)~+125℃(30min),transfer time<2min.




### Micro-section after Q1000

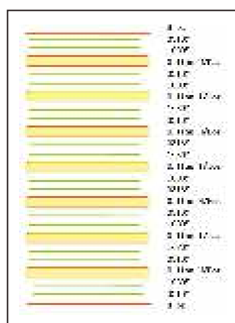
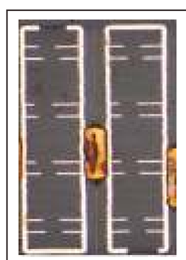
X200 micro-section    X50 micro-section

### Anti-CAF Test




Specimen: Pitch=0.7mm, ф=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″ )<br>1,070×1,220mm (42″ ×48″ ) | 915×1,220mm (36″ ×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

## 特点

- 中Tg 155℃,有优异的耐热性。
- 低的Z轴膨胀系数。
- 优良的耐化学性能。
- 良好的粘合性能与PCB可加工性能。
- UV Blocking与AOI兼容。

## FEATURES

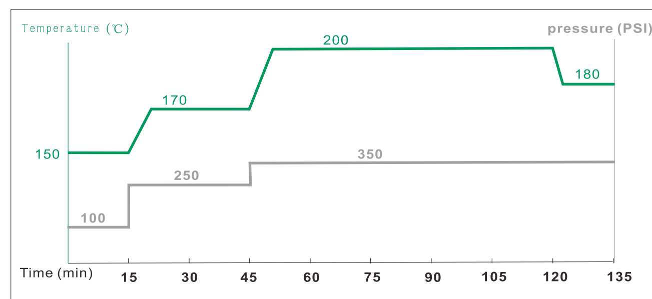
- Tg 155℃ and good thermal resistance resistance.
- Low Z- CTE.
- Excellent chemical resistance.
- Excellent adhesion property and PCB processability.
- UV Blocking /AOI compatible.

## 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.