



# S1165

(UL ANSI:No ANSI) High Performance Halogen-Free

## 特点

- 无铅兼容FR-4板材。
- UV Blocking与AOI兼容。
- 高Tg无卤产品，Tg 170℃ (DSC)。
- 板材具备较低的z轴膨胀系数。
- 较低的介电损耗，Df<0.01。

## FEATURES

- Lead-free compatible FR-4 laminate.
- UV Blocking/AOI compatible.
- High Tg Halogen-free product, Tg 170℃(DSC).
- Lower Z-axis CTE .
- Lower dissipation, Df<0.01.

## 应用领域

手机、电脑、仪器仪表、摄象机、电视机、电子游戏机、通讯设备等。

## APPLICATIONS

Mobile phone, computer, instrumentation, VCR, TV, electronic game machine, communication equipment ,and etc.

## GENERAL PROPERTIES

Test Item	Treatment Condition	Unit	Property Data		
			SPEC	Typical Value	
Tg	DSC	℃	≥165	170	
Flammability	C-48/23/50	Rating	V-0	V-0	
	E-24/125				
Volume Resistivity	After moisture resistance	MΩ-cm	≥ 10 <sup>6</sup>	2.0×10 <sup>8</sup>	
	E-24/125		≥ 10 <sup>3</sup>	2.0×10 <sup>6</sup>	
Surface Resistivity	After moisture resistance	MΩ	≥ 10 <sup>4</sup>	1.0×10 <sup>7</sup>	
	E-24/125		≥ 10 <sup>3</sup>	4.0×10 <sup>6</sup>	
Arc Resistance	D-48/50+D-0.5/23	S	≥ 60	127	
Dielectric Breakdown	D-48/50+D-0.5/23	KV	≥ 40	55	
Dielectric Constant (1MHz)	C-24/23/50	-	≤ 5.4	4.8	
Dissipation Factor (1MHz)	C-24/23/50	-	≤ 0.035	0.007	
Thermal Stress	Unetched	288℃, solder dip	-	> 10s	100s
	Etched			No delamination	No delamination
Peel Strength	1oz	288℃, 10s	N/mm	≥ 1.05	1.5
	Cu. Foil	125℃		≥ 0.70	1.4
Flexural Strength	LW	A	MPa	≥ 415	561
	CW			≥ 345	476
Water Absorption	D-24/23	%	≤ 0.5	0.15	
CTE z-axis	Before Tg	TMA	PPM/℃	≤60	40
			PPM/℃	≤300	250
			%	≤3.5	3.2
Td	10℃/min,N <sub>2</sub> ,5%Wt Loss	℃	≥325	360	
T260	TMA	min	≥30	60	
T288	TMA	min	≥5	15	
CTI	IEC60112 Method	V	PLC 3(175V--249V)	PLC 3	

Remarks: 1.Specification sheet:IPC-4101/94, 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 Sci.Tech.Co., Ltd. for detailed information, and all rights from this data sheet are reserved by Shengyi Sci.Tech.Co., Ltd.

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

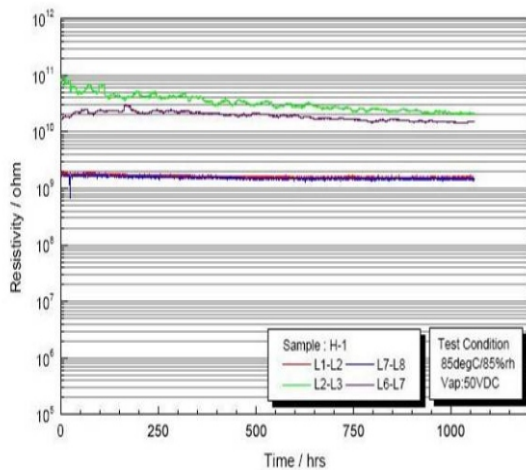
The figures following the letter symbols indicate with the first digit the duration of the preconditioning in hours, with the second digit the preconditioning temperature in ℃ and with the third digit the relative humidity.



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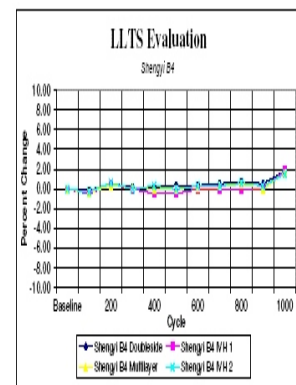
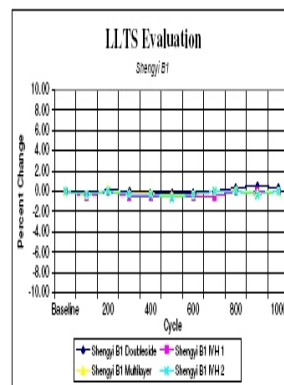
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## ■ Anti-CAF Test



Test condition: 85°C/85%RH/50V DC/1000hours.  
Specimen:8-layer board (Build up,1+6+1)

## ■ LLTS Test



LLTS condition: -55°C~+125°C, 1000cycles  
Resistance change percent <5%  
Specimen:8-layer board (Build up,1+6+1)

## 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" ) 1,070×1,220mm (42" × 48" )	915×1,220mm (36" × 48" )

❖ Other sheet size and thickness could be available upon request.

## HALOGEN CONTENT TEST

❖ JPCA-ES-01-2003 Standard “Test method of halogen-free materials”

Halogen	JPCA Standard	S1165
Cl	≤0.09%	0.05%
Br	≤0.09%	0.00%



# S0165 PREPREG

(UL ANSI:No ANSI) Bonding Prepreg For S1165

## 特点

- 不含卤素、锑、红磷等成分。
- 高Tg 170°C(DSC)。

## FEATURES

- Constituents free of halogen, antimony, red phosphorous, and etc.
- High Tg 170°C(DSC).

## PREPREG PARAMETERS

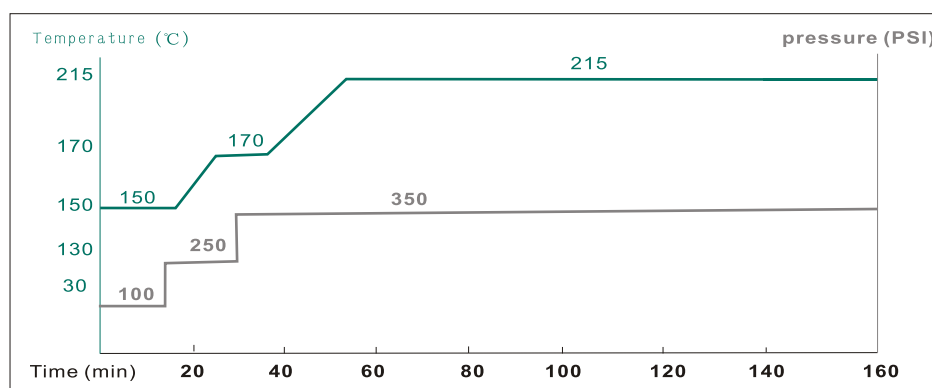
Designation	Glass fabric type	Performance	Gel time (sec)	Resin Content (%)	Resin flow (%)	Cured Thickness (μm)	Standard Size (roll type)
S0165	106	High Performance Halogen Free	160±20	71±3	39±5	50±10	1,260mm×114.3m (125yards)
	106LD			71±3	39±5	50±10	
	1078LD			64±3	38±5	78±10	
	1080			64±3	38±5	78±10	
	1086LD			61±3	38±5	78±10	
	2112			57±3	32±5	90±15	
	2113			56±3	28±5	100±15	
	2313			55±3	28±5	100±15	
	3313			55±3	28±5	100±15	
	2116			52±3	30±5	120±15	
	2165			52±3	28±5	140±15	
	1500			45±3	24±5	160±15	
	7628			43±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°C/min (80~140°C)

Curing time:>60min (185~195°C)

The hot pressing parameters is for your reference only, please turn to Shengyi Sci.Tech.Co., Ltd for detailed information.

## STORAGE CONDITION

- Three months when stored at <23°C and <50% RH.
- Six months when stored at <5°C. 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.