



# 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>5</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	≥ 1.05	1.5	
	Cu. Foil	125℃	≥ 0.70	1.4	
Flexural Strength	LW	A	≥ 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.

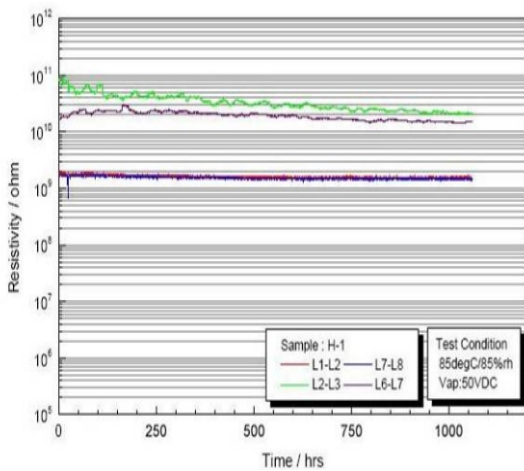
The figures following the letter symbols indicate with the first digit the duration of the preconditioning in hours, with the second digit the preconditioning temperature in ℃ and with the third digit the relative humidity.



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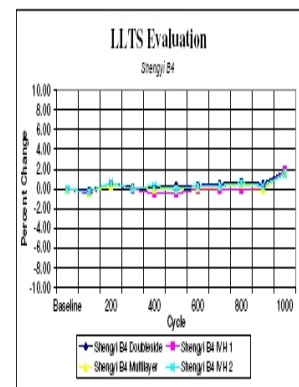
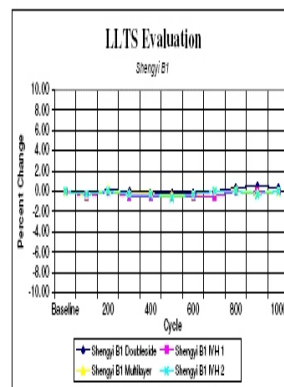
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## ■ Anti-CAF Test



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

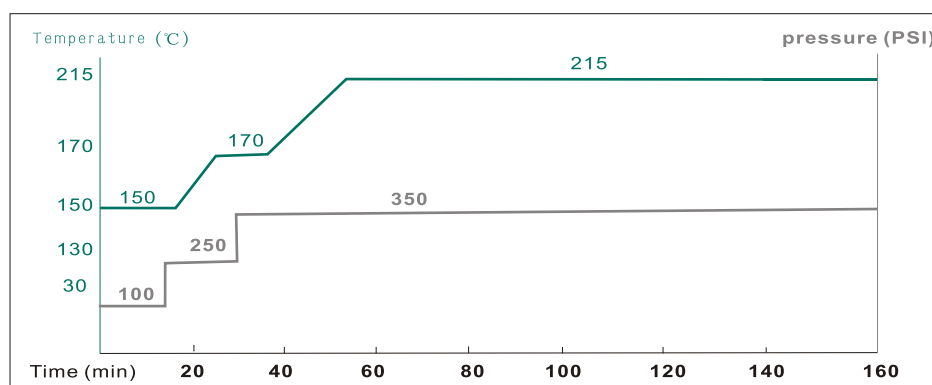
Designation	Glass fabric type	Performance	Gel time (sec)	Resin Content (%)	Resin flow (%)	Cured Thickness (μm)	Standard Size (roll type)
S0165	106	High Performance Halogen Free	160±20	71±3	39±5	50±10	1,260mm×114.3m (125yards)
	106LD			71±3	39±5	50±10	
	1078LD			64±3	38±5	78±10	
	1080			64±3	38±5	78±10	
	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.