



# S1170G

(UL ANSI: NO ANSI) High Tg Halogen Free Material

## FEATURES

- Free of constituents such as halogen, antimony, red phosphorous, etc. No toxic gas emission and no hazardous residue during waste
- Lead-free compatible.
- High Tg Halogen-free, Tg 180°C (DMA)
- UV Blocking/AOI compatible.
- Lower Z-axis CTE.

## APPLICATIONS

Consumer electronics  
 Smartphone  
 Automotive electronics  
 Computer  
 Instrument

## GENERAL PROPERTIES

Test Items	Treatment Condition	Unit	Property Data		
			SPEC	Typical Value	
Tg	DMA	°C	≥170	180	
Flammability	C-48/23/50,E-24/125	Rating	V-0	V-0	
	E-24/125+des				
Volume Resistivity	After moisture resistance	MΩ-cm	≥10 <sup>6</sup>	5.65 × 10 <sup>7</sup>	
	E-24/125		≥10 <sup>3</sup>	2.71 × 10 <sup>7</sup>	
Surface Resistivity	After moisture resistance	MΩ	≥10 <sup>4</sup>	5.99 × 10 <sup>6</sup>	
	E-24/125		≥10 <sup>3</sup>	4.44 × 10 <sup>6</sup>	
Arc Resistance	D-48/50+D-0.5/23	S	≥60	180	
Dielectric Breakdown	D-48/50+D-0.5/23	KV	≥40	45+KV NB	
Dielectric Constant RC 52%	IPC-TM-650 2.5.5.9(1GHz)	-	≤5.4	4.4	
Dissipation Factor RC 52%	IPC-TM-650 2.5.5.9(1GHz)		≤0.035	0.010	
Thermal Stress	Unetched	288°C, solder dip	-	>10s No Delamination	
	Etched				
Peel Strength	1oz Cu.Foil HTE Type	288°C/10s	N/mm	≥1.05	1.3
		125°C		≥0.70	1.1
Flexural Strength	LW	A	Mpa	≥415	550
	CW			≥345	450
Water Absorption	D-24/23	%	≤0.5	0.12	
CTE Z-axis	Before Tg	TMA	PPM/°C	≤60	45
	After Tg	TMA	PPM/°C	≤300	210
	50-260°C	TMA	%	≤3.0	2.3
Td	10°C/min, N <sub>2</sub> , 5%Wt Loss	°C	≥340	390	
T288	TMA	min	≥15	60	
T260	TMA	min	≥30	60	

※Property values are for information purposes only and not intended for guarantee.

Specimen thickness: 1.6mm. Test method is according to IPC TM-650.

Remarks: 1. Specification sheet:IPC-4101/130, 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.

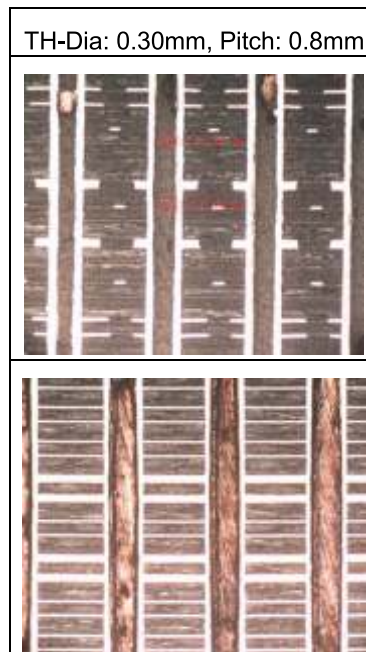
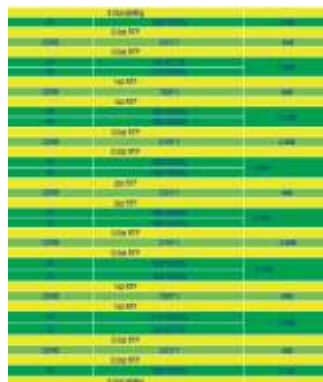
The figures following the letter symbols indicate with the first digit the duration of the preconditioning in hours, with the second digit the preconditioning temperature in °C and with the third digit the relative humidity.



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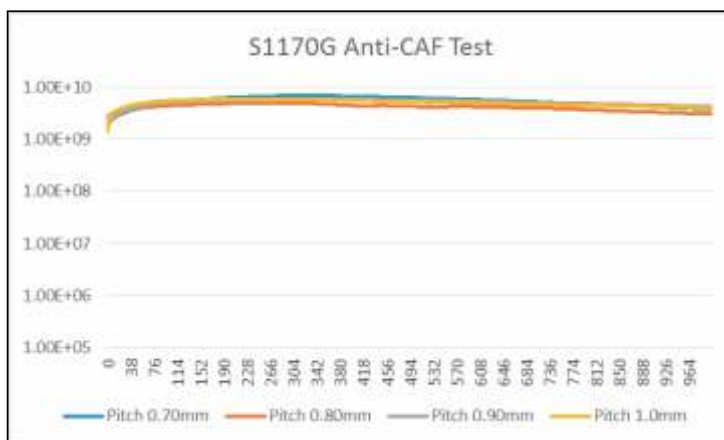
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## High layer count application evaluation



Test coupon: 20-layer, Core 0.10 H/H & 2/2,  
 Prepreg: 1080/3313/2116  
 Overall thickness: 3.0mm  
 TH-Dia: 0.30mm  
 Pitch: BGA 0.8mm & 1.0mm  
 Test condition: 5X Lead free reflow (260°C Peak)

## Anti-CAF TEST



CAF test condition:

Pre-Treatment: E-2/125+260deg C reflow 6X  
 Structure: 24layer, core 0.10H/H, PP 2116/1080  
 TH-dia: 0.30mm  
 Overall thickness: 3.40mm  
 Test: 85°C/85% RH DC50V



# S1170GB PREPREG

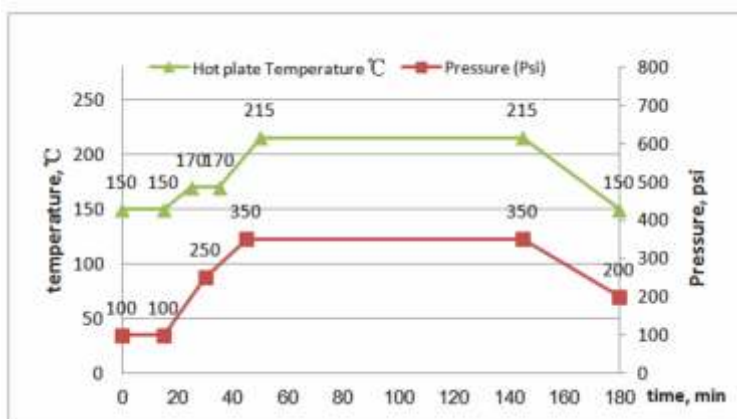
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## PREPREG PARAMETERS

Glass fabric type	Resin content (%)	Cured thickness (mm)	DK(1GHz)	Df(1GHz)	Standard size (Roll type)
106	72	0.050	4.1	0.016	1.260m X150m
	76	0.060	4.0	0.016	
1080/1078	64	0.075	4.3	0.015	1.260m X300m
	68	0.087	4.2	0.015	
2313/3313	55	0.097	4.5	0.014	
	59	0.109	4.4	0.014	
2116	52	0.115	4.6	0.013	1.260m X250m
	55	0.125	4.5	0.014	
1506	45	0.155	4.7	0.012	1.260m X150m
	48	0.167	4.7	0.013	
7628	43	0.189	4.8	0.012	
	46	0.204	4.7	0.013	
	48	0.214	4.7	0.013	
	50	0.223	4.6	0.013	

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°C/min (80-140°C)
- Curing time: >60min (190-200°C)
- The hot pressing parameter is for your reference only, please turn to Shengyi Technology 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 4 hours 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.