



# S1150G

(UL ANSI: FR-4.1) High Performance, Mid-Tg Halogen-free

## FEATURES

- Free of constituents such as halogen, antimony, red phosphorous, ect. No toxic gas emission and no hazardous residue during waste combustion.
- Excellent mechanical processibility and thermal resistance, lead free process compliancy.

## APPLICATIONS

Mobile phone, portable electronics  
 Notebook and PC  
 LCD/PDP, OA equipment  
 Game station  
 Communications, network equipment

## GENERAL PROPERTIES

Items	Condition	Unit	Property Data	
			Spec	Typical Value
Tg	DSC	°C	≥150	155
Flammability	C-48/23/50 and E-24/125	-	V-0	V-0
Volume Resistivity	After moisture resistance	MΩ-cm	≥10 <sup>6</sup>	1.15E+08
	E-24/125		≥10 <sup>3</sup>	4.13E+08
Surface Resistivity	After moisture resistance	MΩ	≥10 <sup>4</sup>	9.61E+06
	E-24/125		≥10 <sup>3</sup>	5.37E+07
Arc Resistance	D-48/50+D-0.5/23	S	≥60	178
Dielectric Breakdown	D-48/50+D-0.5/23	KV	≥40	45KV+NB
Dielectric Constant	(1GHz)	C-24/23/50	-	4.6
	(1MHz)	C-24/23/50	-	≤5.4
Dissipation Factor	(1GHz)	C-24/23/50	-	0.011
	(1MHz)	C-24/23/50	-	≤0.035
Thermal Stress	288°C, solder dip	-	>10s No Delamination	>100s No Delamination
Peel Strength (1 Oz)	288°C/10s	N/mm	≥1.05	1.5
Flexural Strength	LW	Mpa	≥415	630
	CW		≥345	480
Water Absorption	D-24/23	%	≤0.5	0.10
CTE(Z-axis)	Before Tg	PPM/°C	≤60	40
	After Tg	PPM/°C	≤300	230
	50-260°C	%	≤3.5	2.8
Td	Wt5%loss	°C	≥325	355
T260	TMA	min	≥30	60
T288	TMA	min	≥5	45

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

- Remarks:
- 1.Specification sheet:IPC-4101/128, 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.

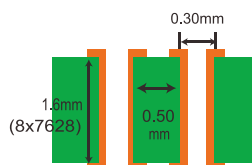
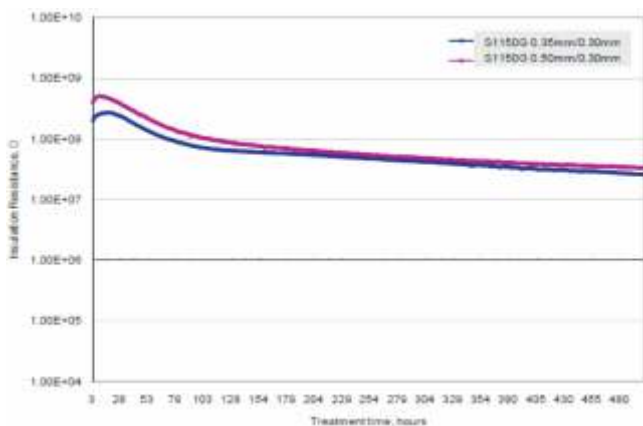
The figures following the letter symbols indicate with the first digit the duration of the preconditioning in hours, with the second digit the preconditioning temperature in °C and with the third digit the relative humidity.



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## HAST Test



### Pretreatment condition:

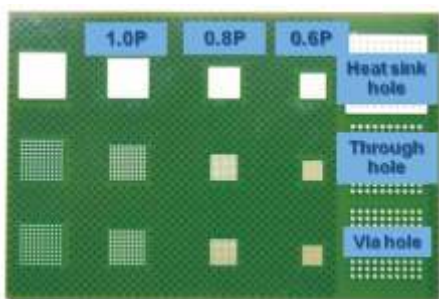
125°C/4hrs->85°C/85%RH/96hrs->260°C  
Lead free reflow 1X

Lead free reflow 1X

### HAST condition:

121°C/85%RH/50VDC, >500hrs

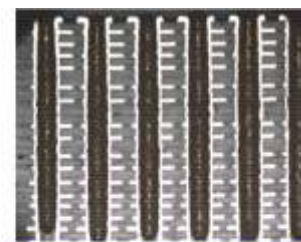
## High layer count application evaluation



- 18-Layer, core 0.10 1/1, PP: 1080/2116
- Overall thickness: 2.4mm
- Min. hole size: 0.30mm
- Aspect ratio: 8:1
- 260C/10s thermal stress: 3X, OK
- 260C lead free reflow: 6X, OK



Through hole: 260C solder dip 3X-0.8P



Through hole: 260C Reflow 6X-0.6P

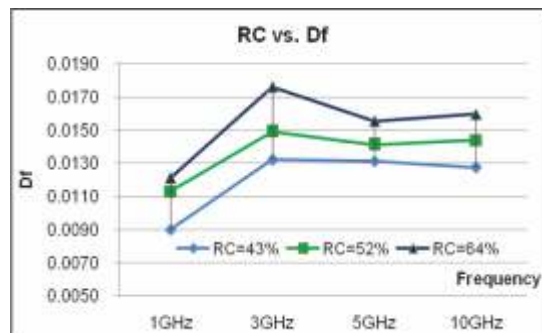
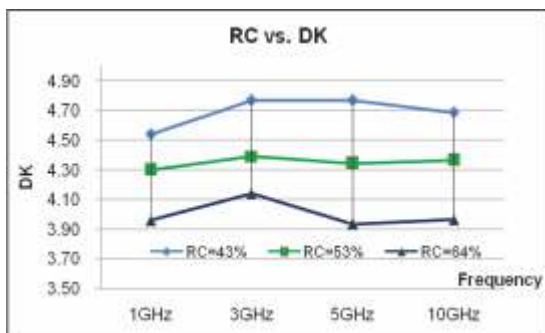


Heat sink hole: 260C solder dip 3X-0.8P



Heat sink hole: 260C Reflow 6X-0.6P

## Dk and Df relationship with RC under high frequency





# S1150GB PREPREG

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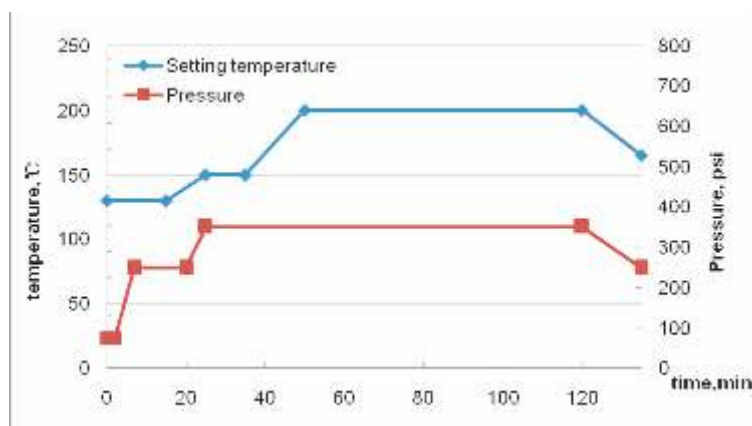
## PREPREG PARAMETERS

Glass fabric type	Resin content (%)	Cured thickness (mm)	DK(1GHz)	Df(1GHz)	Standard size (Roll type)
106/1037	73	0.050	3.8	0.017	1.260m X150
	75	0.056	3.7	0.018	
1080/1078	63	0.071	4.0	0.012	1.260m X300
	66	0.078	4.0	0.013	
	68	0.084	3.9	0.015	
2313	55	0.096	4.2	0.011	1.260m X250
	57	0.101	4.2	0.011	
2116	54	0.119	4.2	0.011	1.260m X250
	57	0.130	4.2	0.011	
1506	45	0.152	4.4	0.010	1.260m X150
	48	0.163	4.4	0.010	
7628	43	0.185	4.4	0.009	1.260m X150
	45	0.195	4.4	0.010	
	48	0.210	4.4	0.010	
	50	0.220	4.3	0.011	

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: >45min (180-190°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 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.