

S1150G

(UL ANSI: FR-4) 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	Rating	V-0	V-0
Volume Resistivity	After moisture resistance	MΩ-cm	≥10 ⁶	1.15E+08
	E-24/125		≥10 ³	4.13E+08
Surface Resistivity	After moisture resistance	MΩ	≥10 ⁴	9.61E+06
	E-24/125		≥10 ³	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	-	4.9
Dissipation Factor	(1GHz)	C-24/23/50	-	0.011
	(1MHz)	C-24/23/50	-	0.009
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
CTI	IEC60112Method	V	PLC1 (400~600)	PLC1 (400V)

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.

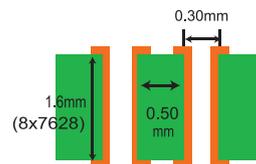
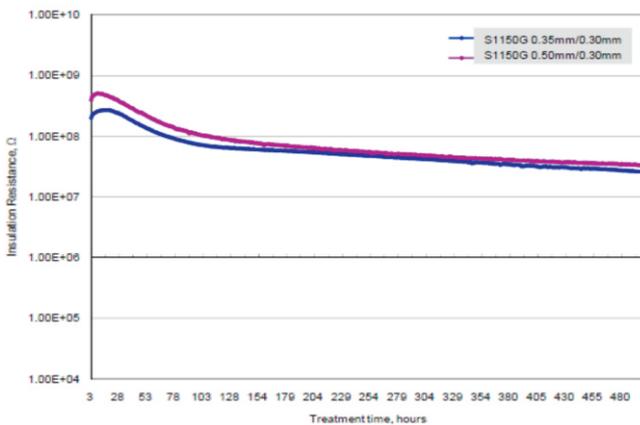
The figures following the letter symbols indicate with the first digit the duration of the preconditioning in hours, with the second digit the preconditioning temperature in °C and with the third digit the relative humidity.



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HAST Test



Pretreatment condition:

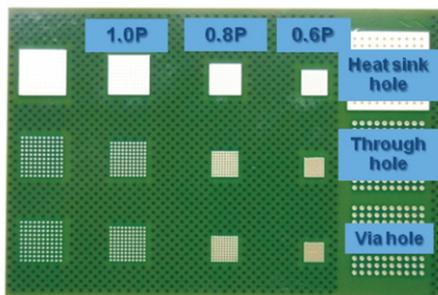
125°C/4hrs->85°C/85%RH/96hrs->260°C
Lead free reflow 1X

Lead free reflow 1X

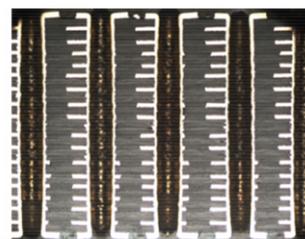
HAST condition:

121°C/85%RH/50VDC, >500hrs

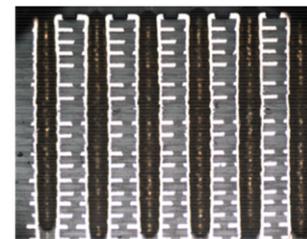
High layer count application evaluation



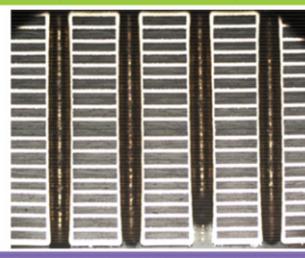
- 18-Layer, core 0.10 1/1, PP: 1080/2116
- Overall thickness: 2.4mm
- Min. hole size: 0.30mm
- Aspect ratio: 8:1
- 260C/10s thermal stress: 3X, OK
- 260C lead free reflow: 6X, OK



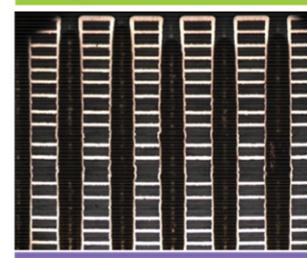
Through hole: 260C solder dip 3X-0.8P



Through hole: 260C Reflow 6X-0.6P

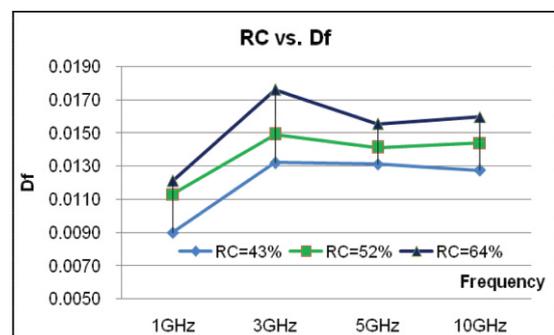
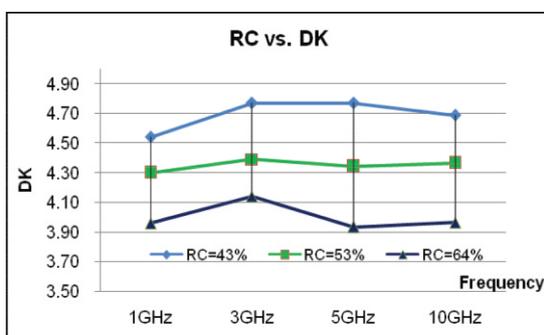


Heat sink hole: 260C solder dip 3X-0.8P



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

Dk and Df relationship with RC under high frequency





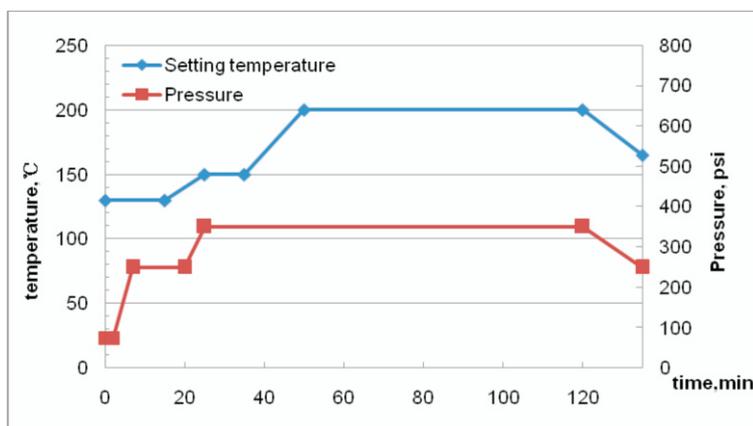
S1150GB PREPREG

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PREPREG PARAMETERS

Designation	Glass fabric type	Performance	Gel time (sec)	Resin content (%)	Resin flow (%)	Cured thickness (um)	Standard size (roll type)
S1150GB	106	Halogen free	140±20	73±3	35±5	50±10	1,260mmX114.3m (125yards)
	106LD			73±3	35±5	50±10	
	1078LD			66±3	36±5	78±10	
	1080			66±3	36±5	78±10	
	1086LD			63±3	34±5	78±10	
	2112			59±3	32±5	90±15	
	2113			58±3	31±5	100±15	
	2313			57±3	30±5	100±15	
	3313			57±3	30±5	100±15	
	2116			54±3	27±5	120±15	
	2165			54±3	27±5	140±15	
	1500/1506			48±3	26±5	160±15	
	7628			45±3	24±5	195±20	

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.