

S1165

(ANSI:FR-4) High Performance Halogen-Free Copper Clad Laminate

特点

- 不含卤素、锑、红磷等成分。
- 燃烧时，不产生有毒气体和残留有毒成分。
- 高Tg 170 (DSC)。
- 优异的耐热性，热分解温度更高，T260>30min，适合于无铅焊工艺。
- 从环境温度到260，板材具备较低的膨胀系数。
- 优良的电性能，Df<0.01。
- 加工性能及其他性能与普通FR-4相同。

FEATURES

- Free of constituents such as halogen, antimony, red phosphorous, etc..
- No toxic gas emission and no hazardous residue during waste combustion.
- High Tg 170 .
- High thermal performance ,higher decomposition temperature ,T260>30min ,suitable for lead-free process.
- Lower CTE from ambient to 260 .
- Excellent electricity performance ,Df<0.01.
- PCB processing and other properties similar to

GENERAL PROPERTIES

Test Item	Treatment Condition	Unit	Property Data	
			SPEC	Typical Value
Tg	DSC		165	170
Flammability	C-48/23/50	-	V-0	V-0
	E-24/125			
Volume Resistivity	After moisture resistance	M -cm	10 ⁶	2 × 10 ¹⁰
	E-24/125		10 ³	2 × 10 ⁸
Surface Resistivity	After moisture resistance	M	10 ⁴	1 × 10 ⁷
	E-24/125		10 ³	4 × 10 ⁹
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 ,20s	-	No delamination
	Etched			
Peel Strength	1oz Cu. Foil	288 ,10s	N/mm	1.05
		125		0.70
Flexural Strength	LW	A	MPa	415
	CW			345
Water Absorption	D-24/23	%	0.35	0.15
CTE z-axis	Before Tg After Tg	TMA	μ m/m	40
			μ m/m	200

Specimen Thickness:1.6mm

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.

应用领域

电脑、仪器仪表、摄像机、电视机、电子游戏机、通讯设备等。

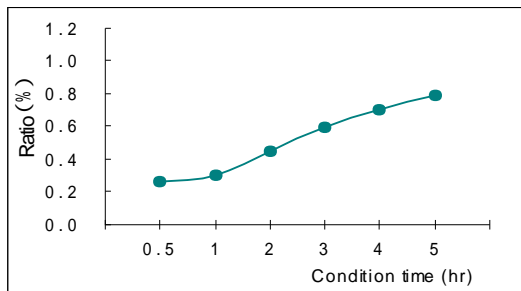
APPLICATIONS

Computer, Instrumentation, VCR, TV, electronic game machine, communication equipment ,etc.

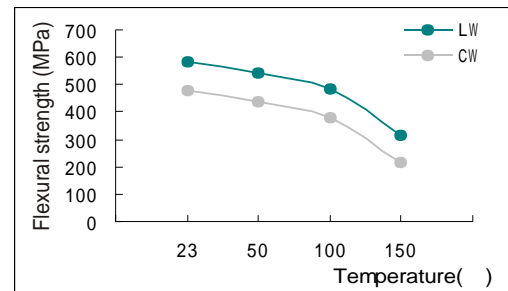
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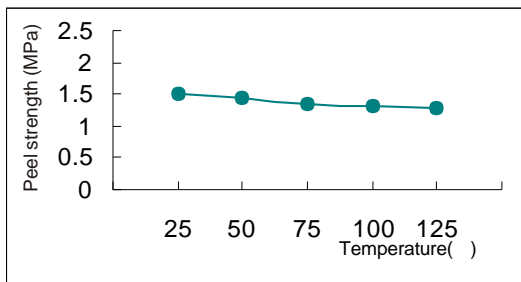
Water absorption at pressure cooker



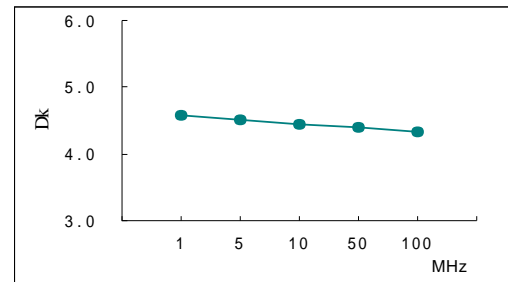
Flexural strength



Peel strength



Dielectric constant



PURCHASING INFORMATION

Thickness	Surface Finish	Standard Size	Custom Size
0.05mm to 3.2mm	12 μm to 105 μm	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-01-1999 Standard "Test method of halogen-free materials"

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