

KB-6162 Halogen-free FR-4**無鹵環保玻纖布覆銅層壓板****特點**

- 無鹵素，不使用任何溴系阻燃劑，溴和氯含量分別小於 0.09%，總含量低於 0.15%
- 不含銻，燃燒時不殘留有有毒成分
- 加工性能及其它性能與普通 FR-4 相當

Features

- Halogen-free, eliminated all kinds of brominated flame-retardants, the bromine and the chlorine are smaller than separately 0.09%, the total content is lower than 0.15%
- Antimony-free, Absence of highly toxic dioxins in burning exhaust gas
- PCB processing and other properties similar to normal FR-4

General Properties 一般特性

Test Item 測試項目	Unit 單位	Test Method (IPC-TM-650) 測試方法	Test Condition 處理條件	Spec (IPC-4101A) 規格值	Typical Value 典型值
Peel Strength (1OZ) 銅箔剝離強度	kgf/cm	2.4.8	A	AABUS	1.45
			Float 288°C / 10Sec	AABUS	1.40
Thermal stress 熱應力	Sec	2.4.13.1	Float 288°C / unetched	≥60	180
Bow / Twist 彎弓度/翹曲度	%	2.4.22.1	A	≤1.0	0.18 / 0.15
Flexural Strength 抗彎強度	N/mm ²	2.4.4	Warp	≥415	560
			Fill	≥345	420
Flammability 燃燒性	Rating	UL94	UL94	UL94 V-0	V-0
Glass Transition (Tg) 玻璃化轉變溫度	°C	2.4.25	E-2/105 DSC	≥130	140
Surface Resistance 表面電阻	MΩ	2.5.17.1	C-96/35/90	≥1.0×10 ⁴	1.0×10 ⁷
Volume Resistance 體積電阻	MΩ-cm	2.5.17.1	C-96/35/90	≥1.0×10 ⁶	1.0×10 ⁹
Dielectric Constant 介電常數	—	2.5.5.2	Etched/@1 MHZ	≤5.4	4.4
Loss Tangent 介質損耗	—	2.5.5.2	Etched/@1 MHZ	≤0.035	0.022
Arc Resistance 耐電弧性	Sec	2.5.1	D-48/50+D-0.5/23	≥60	125
Moisture Absorption 吸水率	%	2.6.2.1	D-24/23	≤0.35(≥0.51)	0.15
				≤0.80(<0.51)	0.25
Z-Axis Expansion Z-軸熱膨脹系數	ppm/°C	2.4.24	E-2/105 TMA	—	50/280
Comparative Tracking Index 相比漏電起痕指數	V	IEC 112	Etched/0.1% NH ₄ Cl	AABUS	175

Remarks: Specimen Thickness: 1.6 mm

樣品厚度: 1.6 mm

A=Maintain original shape, do not make handling 保持原樣, 不作處理

C= Temperature and humidity conditioning 在恒溫恒濕的空氣中處理

E=Temperature conditioning 在恒溫的空氣中處理

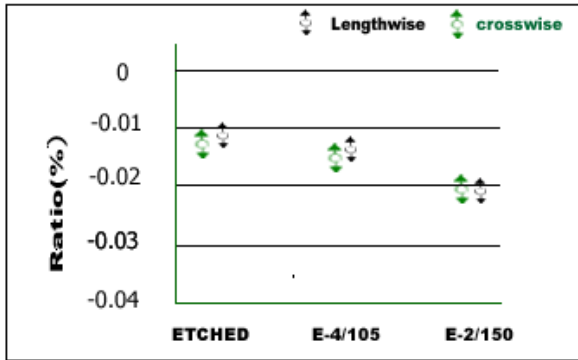
D= Temperature conditioning immersion in distilled water. 浸在恒溫的水中處理

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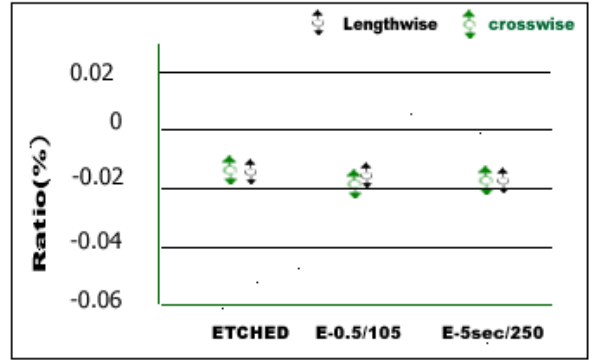
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Speciality Chart 板材特性圖

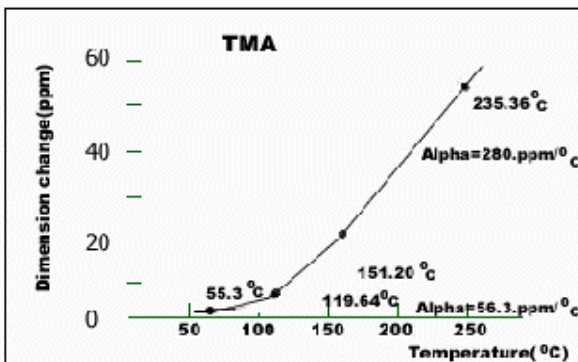
Dimensional stability 尺寸穩定性



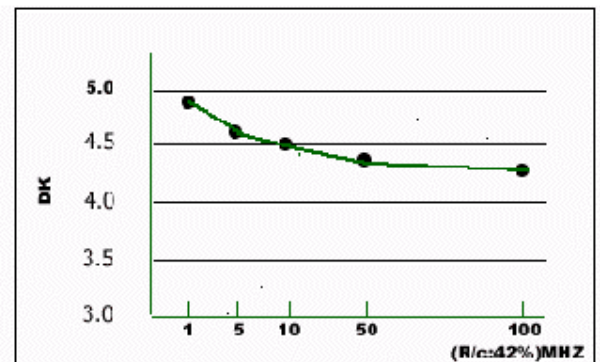
Dimensional stability-PCB process (size:360*310mm)



Thermal expansion of Z-direction (test by TMA)



Dielectric constant 介電常數



應用領域/Applications

- 電腦及週邊設備、通訊設備、儀器儀錶、辦公自動設備等
- Computer, communication equipment instrumentation, OA equipment, etc.

Purchasing Information / 採購資訊

Base Colour 基材顏色	Thickness 厚度	Copper Cladding 銅箔厚度	Regular Size (mm) 常規尺寸
基材呈淡黃色	0.2mm ~3.0mm	18 μ m 35 μ m 70 μ m.	1020*1220mm (40"*48") 1067*1220mm (42"*48") 915*1220mm (36"*48") 1041*1245mm (41"*49")

Note: Other sheet size and thickness could be available upon request.

可根據客戶要求提供其他尺寸和厚度。