

## KB-6164F (ANSI: FR-4)

## 覆铜箔环氧玻纤布层压板

## General Properties 一般特性

Test Item 测试项目	Unit 单位	Test Method (IPC-TM-650) 测试方法	Test Condition 处理条件	Specification (IPC-4101C/101) 规格值		Typical Value 典型值	
				Thk < 0.51mm	Thk ≥ 0.51mm	Thk < 0.51mm	Thk ≥ 0.51mm
Peel Strength (1 oz.) 铜箔剥离强度	N/mm	2.4.8	125°C	≥0.70	≥0.70	1.31	1.40
			Float 288°C/ 10 Sec	≥0.80	≥1.05	1.48	1.57
			After process solution	≥0.55	≥0.80	0.87	1.14
Flammability 燃烧性	Rating	UL94	E-24/23	UL94 V-0		V-0	
Thermal Stress 热应力	Cycles	2.4.13.1	Float 288°C/10Sec unetched	≥3		15	
Glass Transition (Tg) 玻璃化转变温度	°C	2.4.25	E-2/105 DSC	≥140		140	142
Surface Resistivity 表面电阻	MΩ	2.5.17.1	C-96/35/90	≥1.0×10 <sup>4</sup>	—	3.0×10 <sup>7</sup>	—
			After moisture resistance	—	≥1.0×10 <sup>4</sup>	—	1.0×10 <sup>7</sup>
			At elevated temperature E-24/125	≥1.0×10 <sup>3</sup>	≥1.0×10 <sup>3</sup>	5.0×10 <sup>7</sup>	3.0×10 <sup>7</sup>
Volume Resistivity 体积电阻	MΩ-cm	2.5.17.1	C-96/35/90	≥1.0×10 <sup>6</sup>	—	3.0×10 <sup>10</sup>	—
			After moisture resistance	—	≥1.0×10 <sup>4</sup>	—	5.0×10 <sup>7</sup>
			At elevated temperature E-24/125	≥1.0×10 <sup>3</sup>	≥1.0×10 <sup>3</sup>	5.1×10 <sup>10</sup>	1.3×10 <sup>8</sup>
Flexural Strength 抗弯强度	N/mm <sup>2</sup>	2.4.4	Warp	—	≥415	—	485
			Fill	—	≥345	—	465
Dielectric Breakdown 介质击穿	kV	2.5.6	D-48/50+D0.5/23	—	≥40	—	60
Dielectric Strength 介质强度	kV/mm	2.5.6.2	D-48/50+D0.5/23	≥29	—	45	—
Dielectric Constant 介电常数	—	2.5.5.2	Etched/@1 MHz	≤5.4		4.8~5.0	
Loss Tangent 介质损耗	—	2.5.5.2	Etched/@1 MHz	≤0.035		0.017	
Arc Resistance 耐电弧性	Sec	2.5.1	D-48/50+D-0.5/23	≥60		125	
Water Absorption 吸水率	%	2.6.2.1	D-24/23	—	≤0.5	0.080	0.082
CTE/ Z-Axis Expansion Z-轴热膨胀系数	ppm/°C	2.4.24	Alpha 1	—	≤60	—	45
			Alpha 2	—	≤300	—	260
	%		50-260°C	—	≤4.0	—	3.6
T-260	min	2.4.24.1	TMA	—	≥30	—	>60
T-288	min	2.4.24.1	TMA	—	≥5	—	25.58
T-300	min	2.4.24.1	TMA	—	AABUS	—	13.94
TD	°C	2.4.24.6	TGA	—	310	—	346

Remarks: Typical values for reference only 注: 典型值仅作参考

A = Keep the specimen originally without any process 保持原样, 不作处理

C = Temperature and humidity conditioning 在恒温恒湿的空气中处理

D = Immersing in distilled water with temperature control 浸在恒温的水中处理

E = Temperature conditioning 在恒温的空气中处理

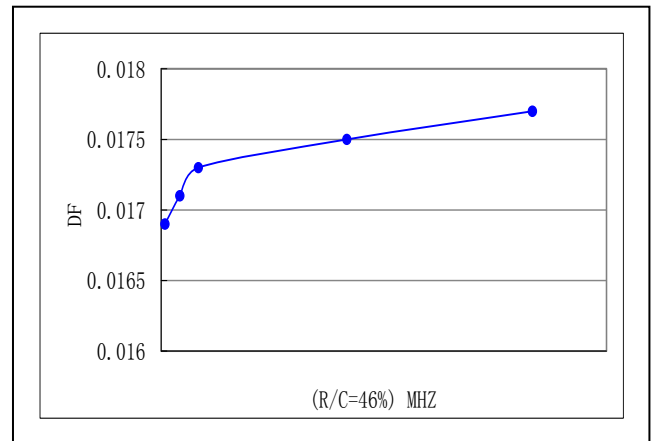
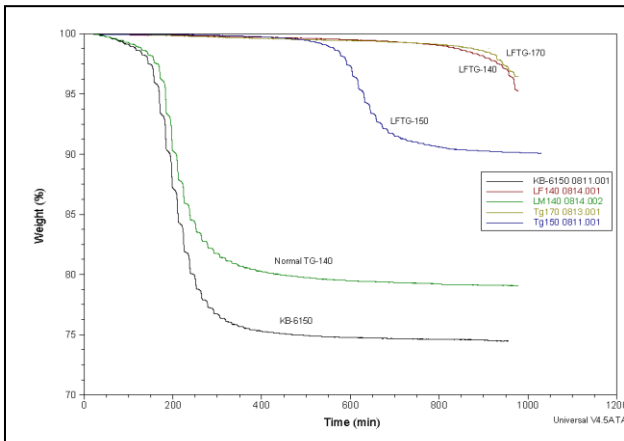
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#### Speciality Chart 板材特性图

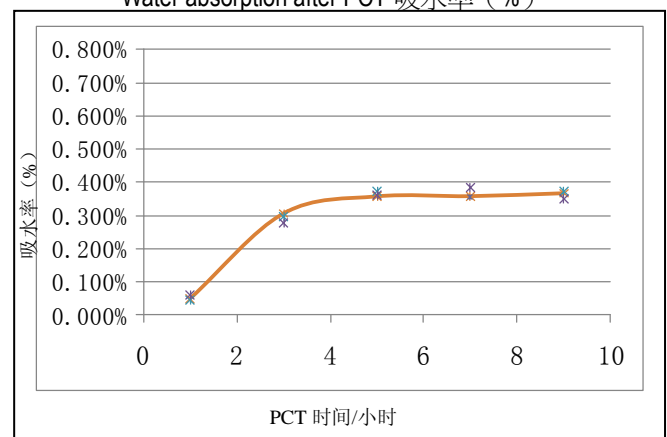
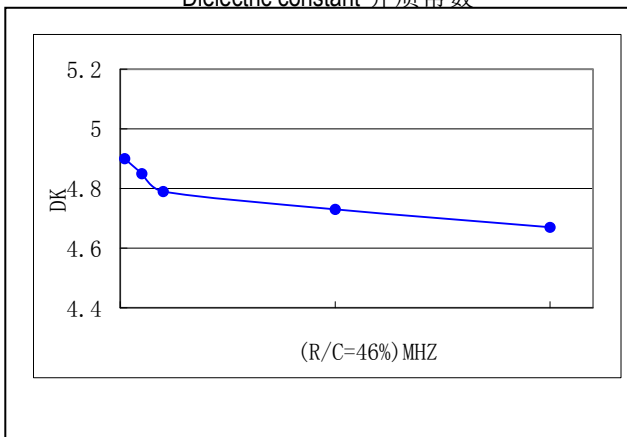
Thermal Cycling Test on Various Materials 各种材料热循环  
(TGA: Temp. was raised to 260°C at 10°C/min, then dropped to 200°C, and raised to 260°C, until delamination)

Loss Tangent  
介质损耗



Dielectric constant 介质常数

Water absorption after PCT 吸水率 (%)



#### Purchasing Information 采购信息

Base Color 基板颜色	Thickness 厚度	Copper Cladding 铜箔厚度	Regular Size (mm) 常规尺寸	CTI Value
黄色 Yellow	0.05mm ~ 3.5mm	18μ m 35μ m 70μ m.	915*1220mm (36"*48") 1020*1220mm (40"*48") 1067*1220mm (42"*48")	175V

Note: 1) Other sheet size and thickness could be available upon request. 可根据客户要求提供其它尺寸和厚度;

2) Speciality chart for reference only. 以上图表仅供参考;

3) Version updates without notice. 版本更新恕不另行通知。