

## KB-6167F (ANSI: FR-4.0)

## 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-4101D/126) 规格值		Typical Value 典型值	
				Thk < 0.50mm	Thk ≥ 0.50mm	Thk < 0.50mm	Thk ≥ 0.50mm
Peel Strength (1 oz.) 铜箔剥离强度	N/mm	2.4.8	125°C	≥0.70	≥0.70	1.05	1.13
			Float 288°C/ 10 Sec	≥0.80	≥1.05	1.22	1.39
			After process solution	≥0.55	≥0.80	0.87	0.96
Flammability 燃烧性	Rating	UL94	E-24/23	UL94 V-0		V-0	
Thermal stress 热应力	Sec	2.4.13.1	Float 288°C/unetched	≥10		≥240	
Glass Transition (Tg) 玻璃化转变温度	°C	2.4.25	E-2/105 DSC	≥170		---	174.5
Surface Resistivity 表面电阻	MΩ	2.5.17.1	C-96/35/90	≥1.0×10 <sup>4</sup>	---	2.9×10 <sup>7</sup>	---
			After moisture resistance	---	≥1.0×10 <sup>4</sup>	---	3.0×10 <sup>7</sup>
			At elevated temperature E-24/125	≥1.0×10 <sup>3</sup>	≥1.0×10 <sup>3</sup>	4.8×10 <sup>7</sup>	4.1×10 <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>	---	3.4×10 <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	Length direction	---	≥415	---	575
			Cross direction	---	≥345	---	450
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	≥30	---	45	---
Dielectric Constant 介电常数	---	2.5.5.2	Etched/@1 MHZ	≤5.4		4.5	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	
Moisture 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	---	49
			Alpha 2	---	≤300	---	208
%	50-260°C		---	≤3.0	---	2.7	
X\Y 轴热膨胀系数	X		70~250°C	---	---	---	11~13
	Y	70~250°C	---	---	---	9~11	
T-260	min	2.4.24.1	TMA	---	≥30	---	>60
T-288	min	2.4.24.1	TMA	---	≥15	---	24.83
T-300	min	2.4.24.1	TMA	---	≥2	---	14.62
TD	°C	2.4.24.6	TGA	---	340	---	350

## Remarks:

- 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

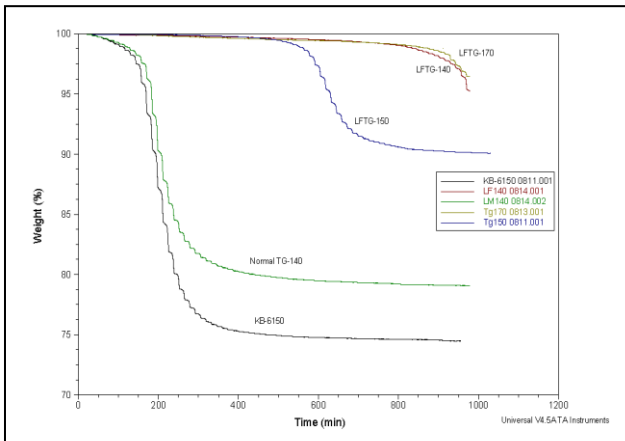
### KB-6167F (ANSI: FR-4.0)

### 覆铜箔环氧玻纤布层压板

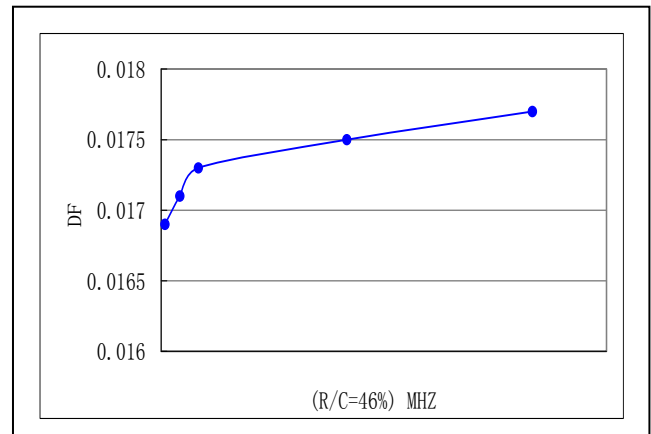
#### Speciality Chart 板材特性图

##### Thermal Cycling Test on Various Materials 各种材料热循环

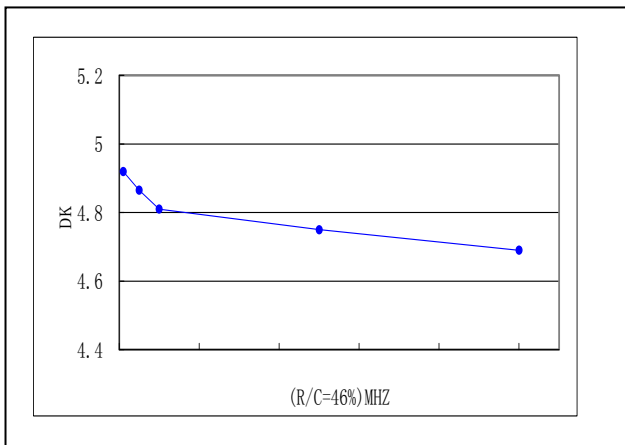
(TGA: Temp. was raised to 260°C at 10°C/min, then dropped to 200°C, and raised to 260°C, until delamination)



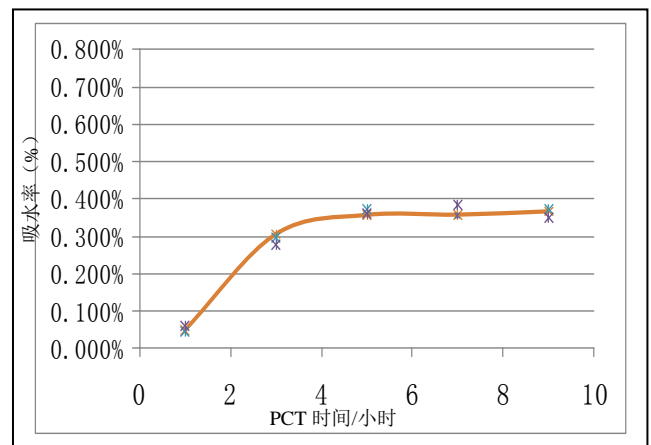
##### Loss Tangent 介质损耗



##### 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	18 μm 35 μm 70 μm.	915*1220mm (36"*48") 1020*1220mm (40"*48") 1067*1220mm (42"*48")	175V

Note: 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