

KB-616XF (Lead Free Series) (ANSI: FR-4)**覆铜箔环氧玻纤布层压板 (无铅系列)****特点 Features**

- Glass transition temperature: 玻璃转化温度
KB-6164F:Tg140°C; KB-6165F: Tg150°C; KB-6167F:Tg170°C (measured by DSC)
- High Decomposition temperature: 高 TD
KB-6164F: > 325°C; KB-6165F: > 325°C; KB-6167F: > 340°C
- Low moisture absorption
低吸水性
- Suitable with lead-free reflow process in assembly
适用于无铅制程
- Excellent Anti CAF performance
良好的耐 CAF 性能
- Low Z-axis expansion
低的 Z 轴热膨胀系数
- High thermal excursion during PCB fabrication and assembly
在 PCB 制程中可承受高的热
- High thermal resistance and long term thermal reliability
具有高耐热性和长期热稳定性
- Excellent thermal shock reliability
优良的热冲击稳定性
- Excellent in dimension stability
优异的尺寸稳定性
- Cost effective solution for lead-free processes
性价比极佳的无铅制程解决方案

应用领域 Applications

- Backplanes 背板
- High complexity multi-layers board
高复杂度多层板
- PC computers 计算机
- High-end servers 高端服务器
- Wireless communication equipment
无线通讯设备
- Automotive applications requiring high thermal resistance
耐热性要求较高的汽车应用

KB-6167F (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/126) 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	1.05	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	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	≥170		—	174.5
Surface Resistivity 表面电阻	MΩ	2.5.17.1	C-96/35/90	≥1.0×10 ⁴	—	2.9×10 ⁷	—
			After moisture resistance	—	≥1.0×10 ⁴	—	3.0×10 ⁷
			At elevated temperature E-24/125	≥1.0×10 ³	≥1.0×10 ³	4.8×10 ⁷	4.1×10 ⁷
Volume Resistivity 体积电阻	MΩ-cm	2.5.17.1	C-96/35/90	≥1.0×10 ⁶	—	3.0×10 ¹⁰	—
			After moisture resistance	—	≥1.0×10 ⁴	—	3.4×10 ⁷
			At elevated temperature E-24/125	≥1.0×10 ³	≥1.0×10 ³	5.1×10 ¹⁰	1.3×10 ⁸
Flexural Strength 抗弯强度	N/mm ²	2.4.4	Warp	—	≥415	—	575
			Fill	—	≥345	—	450
Dielectric Breakdown 介电击穿	kV	2.5.6	D-48/50+D0.5/23	—	≥40	—	60
Dielectric Strength 介电强度	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		4.5	4.8~5.0
Loss Tangent 介电损耗	—	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	—	49
			Alpha 2	—	≤300	—	208
	%		50-260°C	—	≤3.0	—	2.7
T-260	min	2.4.24.1	TMA	—	≥30	—	>120
T-288	min	2.4.24.1	TMA	—	≥15	—	32.3
T-300	min	2.4.24.1	TMA	—	≥2	—	14.9
TD	°C	2.4.24.6	TGA	—	340	—	350

Remarks: Typical values for reference only 注: 典型值只作参考

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

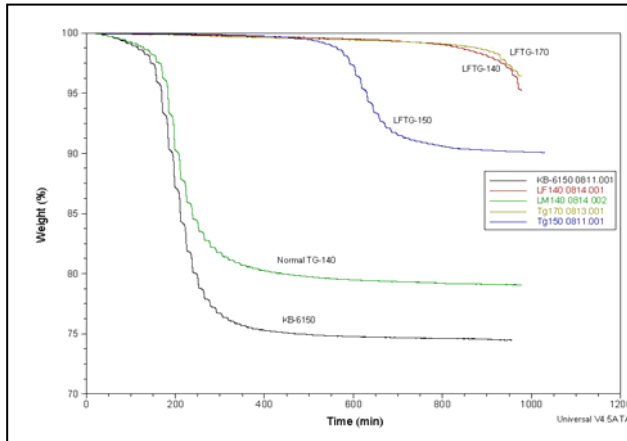
E=Temperature conditioning 在恒温的空气中处理

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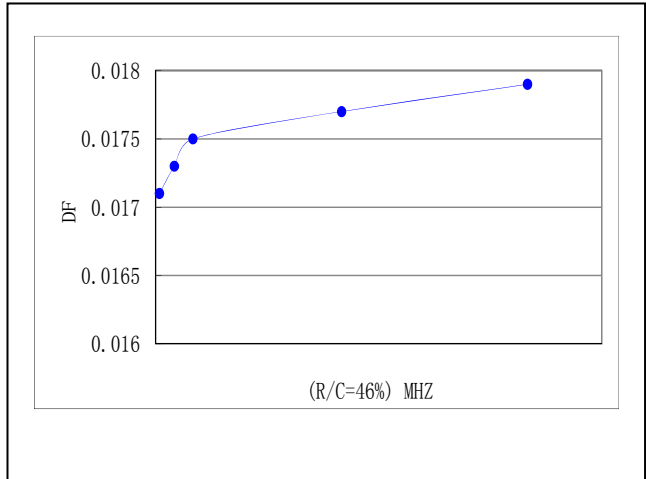
覆铜箔环氧玻纤布层压板

Speciality Chart 板材特性图

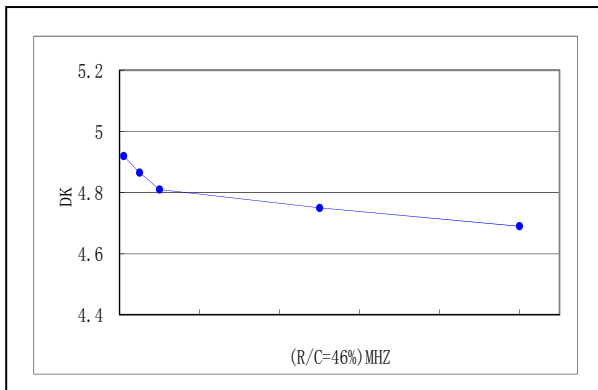
Thermal Cycling Test on Various Materials 各种材料热循环
(TGA: Temp. was raised to 260°C at 10°C/min, then dropped to 200°C, and raised to 260°C, until delamination)



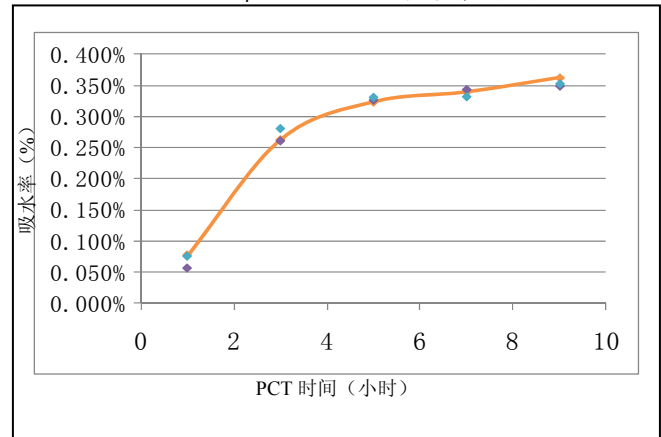
Loss Tangent
介质损耗



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 μ m 35 μ m 70 μ 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。