

### Conventional FR-4/Normal Tg

#### 特性 (Feature)

- 兼容紫外光阻挡及光学自动检查功能  
UVB and AOI (automatic optical inspection) compatible
- 优异的尺寸稳定性  
Excellent dimensional stability
- 优良的耐热性能和机械性能  
Excellent heat resistance and mechanical properties
- 符合IPC-4101E/21的规范要求  
IPC-4101E/21 specification is applicable

#### 应用 (Application)

- 计算机及外围设备  
Computer and peripheral
- 通讯设备  
Communication equipment
- 仪器仪表  
Instrument
- 办公自动设备等  
OA equipment, etc.

### 板材性能 (Laminate Properties)

Test Item 测试项目		Test Method (IPC-TM- 650) 测试方法	Test Condition 处理条件	Unit 单位	Specification 规格值 (IPC-4101E/21)	Typical Value 典型值	
Thermal 热性能	Thermal Stress 热应力	2.4.13.1	Float 288 °C/ Unetched	Sec	≥10	≥180	
	Glass Transition (Tg) 玻璃化转变温度	2.4.25	E-2/105 DSC	°C	≥130	135	
	CTE/ Z-Axis Expansion Z-轴热膨胀系数	2.4.24	Alpha 1	50 - 260 °C	ppm/°C	—	60
			Alpha 2		—	300	
	T-260	2.4.24.1	TMA	min	—	> 10	
	TD(5% weight loss)	2.4.24.6	TGA	°C	—	305	
	Flammability 燃烧性	UL94	E-24/ 23	Rating	V-0	V-0	
Electrical 电性能	Surface Resistivity 表面电阻	2.5.17.1	C-96/35/90	MΩ	≥10 <sup>4</sup>	1.0×10 <sup>6</sup>	
	Volume Resistivity 体积电阻	2.5.17.1	C-96/35/90	MΩ-cm	≥10 <sup>6</sup>	1.0×10 <sup>8</sup>	
	Dielectric Breakdown 击穿电压	2.5.6	D-48/ 50+D-0.5/ 23	kV	≥40	69	
	Dielectric Constant 介电常数	2.5.5.2	Etched (RC50%)	@ 1 MHz	—	≤5.4	4.35
				@ 1 GHz			4.25
	Loss Tangent 介质损耗	2.5.5.2	Etched (RC50%)	@ 1 MHz	—	≤0.035	0.017
				@ 1 GHz			0.018
CTI 相对漏电起痕指数	IEC60112	A	V	—	≥175		
Arc Resistance 耐电弧性	2.5.1	D-48/ 50+D-0.5/ 23	Sec	≥60	125		
Mechanical 机械性能	Peel Strength (1 oz.) 铜箔剥离强度	2.4.8	125 °C	N/mm	≥0.70	1.7	
			Float 288 °C/ 10 Sec		≥1.05	1.75	
			After Process Solution		≥0.80	1.3	
	Flexural Strength 抗弯强度	2.4.4	Length Direction	N/mm <sup>2</sup>	≥415	565	
			Cross Direction		≥345	446	
Moisture Absorption 吸水率	2.6.2.1	D-24/23	%	≤0.5	0.19		

Remarks:  
 - Typical Values for reference only.  
 - Standard Values according to IPC-4101E/ 21  
 - Typical Value of Specimen thickness is 1.6mm (8\*7628)

注:  
 - 典型值只供参考  
 - 规格值参照 IPC-4101E/ 21  
 - 样品的厚度为 1.6mm (8\*7628)



### KB-6160A 板材清单 (Laminate List)

Thickness 厚度 (mm)	Size 尺寸 (Inch)	Copper foil Type 铜箔类型
0.05-3.20	37" × 49" , 41" × 49" , 43" × 49" 74" × 49" , 82" × 49" , 86" × 49"	Reverse treated copper foil RTF铜箔: 1/3OZ—3OZ HTE copper foil HTE铜箔: 1/3OZ—3OZ

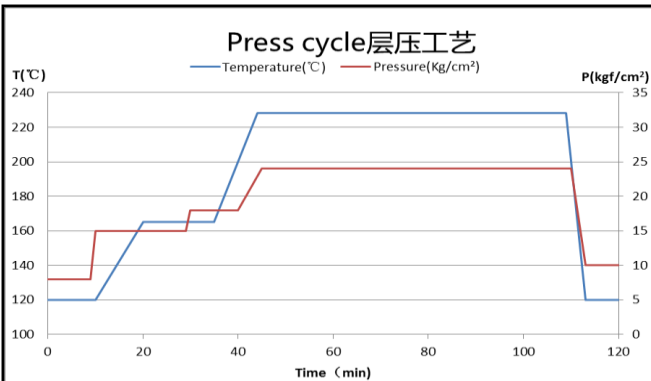
### KB-6060A 半固化片清单 (Prepreg List)

UL Designation UL型号	PP style 类型	R/C(%) 树脂含量	Dk±0.2(1GHz) 介电常数	Df±10%(1GHz) 介质损耗	Thickness(mil) 压合厚度
KB-6060A	1080	61±2	3.8	0.018	2.8±0.3
		63±2	3.8	0.019	3.0±0.4
		65±2	3.7	0.019	3.2±0.4
	3313	50±2	4.0	0.018	3.6±0.5
		55±2	3.9	0.018	3.9±0.5
	2116	50±2	4.2	0.017	4.6±0.5
		53±2	4.1	0.019	5.0±0.5
		55±2	4.1	0.019	5.3±0.5
	1506	43±3	4.5	0.016	6.0±0.5
		45±3	4.4	0.016	6.4±0.5
	7628	44±3	4.5	0.015	7.9±0.8
		46±3	4.5	0.016	8.2±0.6
		49±3	4.4	0.016	8.9±0.6
	7630	49±3	4.5	0.016	9.5±0.8
		50±3	4.5	0.016	9.8±0.8

### KB-6060A 半固化片储存 (Prepreg Storage)

储存条件(Condition)	有效期(Shelf Life)
Max. 50%RH & Max. 23°C 湿度 < 50% 及 温度 < 23°C	90 days
Max. 5°C(Normal in room temperature for at least 4h before using) 温度 < 5°C (拆包装前需在室温下回温至少4小时)	180 days

### 压合参数(Recommended Process)



- Heat-up rate: 1.0-2.5 °C/ min (80 °C-140 °C)  
热压升温速率: 1.0-2.5 °C/ min (80 °C-140 °C)
- Curing time: >45min(>175 °C)  
固化时间: >45min(>175 °C)
- Curing pressure: 25±5 kgf/ cm<sup>2</sup>  
(Vacuum Hydraulic Press)  
固化压力: 25±5 kgf/ cm<sup>2</sup>  
(真空液压压机)

Remarks:  
This Technical Information only lists the typical values of particular specification. If the customer needs other specifications, please contact your sales representative for more information.

注:  
本产品技术资料只列出指定规格的典型值, 如客户需要其他规格的资料, 请与您的销售代表联系