



浙江华正新材料股份有限公司

铝基覆铜板检测报告及品质保证书

Zhejiang Huazheng New Material Co., Ltd.

HZ/FMD3338-01 Rev:A1



ALUMINUM SUBSTRATE COPPER CLAD LAMINATE QUALITY TEST REPORT AND COC

订单号(P/O No.):

出货日期(Delivery Date): 2018.9.28

客户(Customer): LLC Electroconnect

数量(Quantity): 50

型号(Type): HA80 1.0 1/0 1000X1220mm(胶膜)

铝型(Aluminum type): 5052

绝缘层厚度(Dielectric Thickness): 100

箱号(P/N): Z18096810

批号(Lot No.): 18920BE04A

(CPCA4105-2010 P/N):

类型(Type3)

序号	检测项目	单位	检测条件	规范值	样品
No	Item	Unit	Test Condition	Specification Value	Actual Value
1	外观		A	CLASS A	PASS
	Visuals		IPC-TM-650 2.1.5.2.1.9	IPC-4101 3.8.3.1	
2	热导率* (见备注) Thermal Conductivity	W/m-K	ASTM D5470	2	2.01
3	剥离强度 Peel Strength	N/mm	288°C, 10s	≥1.20	1.54
			IPC-TM-650 2.4.8	IPC-4101 3.9.1.1	
4	板材厚度	mm	A	1.00±0.10	1.01
	Thickness				
6	耐电压	KV	A	≥3	4
	Dielectric Breakdown				
7	热应力		288°C*10S, solder dip	>6cycles No delamination	PASS
	Thermal stress		IPC-TM-650 2.4.13.1	IPC-4101 3.10.1.2	
8	玻璃化转变温度(Tg)	°C	DSC	≥100	110
	Glass transition temperature		IPC-TM-650 2.4.25	IPC-4101 3.10.1.6	
9	燃烧性		E 24/125	UL94V-0	V-0
	Flammability		IPC-TM-650 2.3.10		
10	表面电阻率	MΩ	After moisture	≥1.0×10 ⁴	6.03×10 ⁶
	Surface Resistivity		IPC-TM-650 2.5.17.1	IPC-4101 3.11.1.4	
11	体积电阻率	MΩ-cm	After moisture	≥1.0×10 ⁶	5.52×10 ⁷
	Volume Resistivity		IPC-TM-650 2.5.17.1	IPC-4101 3.11.1.3	
12	吸水率	%	D 24/23	≤1.5	0.55
	Water Absorption		IPC-TM-650 2.6.2.1	IPC-4101 3.12.1.1	
13	相比漏电起痕指数 CTI	V	IEC-60112	≥600	600

Note

备注: 绝缘层热导率采用金属板厚度1.00mm、铜箔厚度35μm、绝缘层厚度为75μm的金属基覆铜板, 采用ASTM D5470测试计算所得。
Remark: The thermal conductivity of the insulating layer is a metal-based copper clad laminate having a metal plate thickness of 1.00 mm, a copper foil thickness of 35 μm, and an insulating layer thickness of 75 μm, which is calculated by ASTM D5470.

- 1、请不要带包装烘板。Please do not bake the Laminate with packing.
- 2、保护膜的使用方法见我司随货或随单的说明书。The usage of protecting film please see the instruction of our company with goods or order.
- 3、符合欧盟RoHS指令。The above laminate(s) is accord with RoHS directive.

证明 CERTIFICATE OF CONFORMANCE

结论 (Result)

兹证明: 上述特性均经测试并合格。

Hereby certify: above characteristic is tested and qualified.

PASS

检测(Test): 牛小娟

审核(Check): 郭太勤



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ALUMINUM SUBSTRATE COPPER CLAD LAMINATE QUALITY TEST REPORT AND COC

订单号 (P/O No):

出货日期 (Delivery Date): 2018.9.28

客户 (Customer): LLC Electroconnect				数量 (Quantity): 100	
型号 (Type): HA80 1.5 1/0 1000X1220mm (胶膜)				铝型 (Aluminum type): 5052	
绝缘层厚度 (Dielectric Thickness): 100				箱号 (P/N): Z18096811	
批号 (Lot No.): 18923AE07A				(CPCA4105-2010 P/N):	
序号	检测项目	单位	检测条件	规范值	类型 (Type3)
No	Item	Unit	Test Condition	Specification Value	Actual Value
1	外观	—	A	CLASS A	PASS
	Visuals		IPC-TM-650 2.1.5.2.1.9	IPC-4101 3.8.3.1	
2	热导率* (见备注) Thermal Conductivity	W/m·K	ASTM D5470	2	2.01
3	剥离强度 Peel Strength	N/mm	288°C, 10s	≥1.20	1.54
			IPC-TM-650 2.4.8	IPC-4101 3.9.1.1	
4	板材厚度	mm	A	1.50±0.10	1.51
	Thickness				
6	耐电压	KV	A	≥3	4
	Dielectric Breakdown		IPC-TM-650 2.5.6.2	IPC-4101 3.11.1.7	
7	热应力	—	288°C*10S, solder dip	>6cycles No delamination	PASS
	Thermal stress		IPC-TM-650 2.4.13.1	IPC-4101 3.10.1.2	
8	玻璃化转变温度 (Tg)	°C	DSC	≥100	110
	Glass transition temperature		IPC-TM-650 2.4.25	IPC-4101 3.10.1.6	
9	燃烧性	—	E 24/125	UL94V-0	V-0
	Flammability		IPC-TM-650 2.3.10		
10	表面电阻率	MΩ	After moisture	≥1.0×10 ⁴	6.09×10 ⁶
	Surface Resistivity		IPC-TM-650 2.5.17.1	IPC-4101 3.11.1.4	
11	体积电阻率	MΩ·cm	After moisture	≥1.0×10 ⁶	5.53×10 ⁷
	Volume Resistivity		IPC-TM-650 2.5.17.1	IPC-4101 3.11.1.3	
12	吸水率	%	D 24/23	≤1.5	0.55
	Water Absorption		IPC-TM-650 2.6.2.1	IPC-4101 3.12.1.1	
13	相比漏电起痕指数 CTI	V	IEC-60112	≥600	600
备注: 绝缘层热导率采用金属板厚度1.00mm、铜箔厚度35μm、绝缘层厚度为75μm的金属基覆铜板, 采用ASTM D5470测试计算所得。 Remark: The thermal conductivity of the insulating layer is a metal-based copper clad laminate having a metal plate thickness of 1.00 mm, a copper foil thickness of 35 μm, and an insulating layer thickness of 75 μm, which is calculated by ASTM D5470.					
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证明 CERTIFICATE OF CONFORMANCE					结论 (Result)
兹证明: 上述特性均经测试并合格。 Hereby certify: above characteristic is tested and qualified.					PASS
检测 (Test): 牛小娟			审核 (Check): 郭太勤		



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Zhejiang Wazam New Materials Co., Ltd.

ALUMINUM SUBSTRATE COPPER CLAD LAMINATE QUALITY TEST REPORT AND COC

HZ/FMD3338-01 Rev:A1



订单号 (P/O No):

出货日期(Delivery Date): 2019.3.22

客户(Customer): LLCElectroconnect			数量(Quantity): 10		
型号(Type): HA80 2.00 1/0 1000*1220(胶膜)			铝型 (Aluminum type): 5052		
绝缘层厚度 (Dielectric Thickness): 100			箱号 (P/N): Z19035450		
批号 (Lot No.): 19316BE04A			(CPCA4105-2010 P/N):		类型 (Type3)
序号	检测项目	单位	检测条件	规范值	样品
No	Item	Unit	Test Condition	Specification Value	Actual Value
1	外观	—	A	CLASS A	PASS
	Visuals		IPC-TM-650 2.1.5.2.1.9	IPC-4101 3.8.3.1	
2	热导率* (见备注) Thermal Conductivity	W/m·K	ASTM D5470	2	2.01
3	剥离强度 Peel Strength	N/mm	288℃, 10s	≥1.30	1.56
			IPC-TM-650 2.4.8	IPC-4101 3.9.1.1	
4	板材厚度	mm	A	2.00 ± 0.09	2.01
	Thickness				
6	耐电压	KV	A	≥4	4
	Dielectric Breakdown		IPC-TM-650 2.5.6.2	IPC-4101 3.11.1.7	
7	热应力	—	288℃*10S, solder dip	>6cycles No delamination	PASS
	Thermal stress		IPC-TM-650 2.4.13.1	IPC-4101 3.10.1.2	
8	玻璃化转变温度(Tg)	℃	DSC	≥100	110
	Glass transition temperature		IPC-TM-650 2.4.25	IPC-4101 3.10.1.6	
9	燃烧性	—	E 24/125	UL94V-0	V-0
	Flammability		IPC-TM-650 2.3.10		
10	表面电阻率	MΩ	After moisture	≥1.0×10 ⁴	6.03×10 ⁶
	Surface Resistivity		IPC-TM-650 2.5.17.1	IPC-4101 3.11.1.4	
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12	吸水率	%	D 24/23	≤1.5	0.55
	Water Absorption		IPC-TM-650 2.6.2.1	IPC-4101 3.12.1.1	
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Note

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检测 (Test): 牛小娟

审核 (Check): 邬太勤

结论 (Result)

PASS

