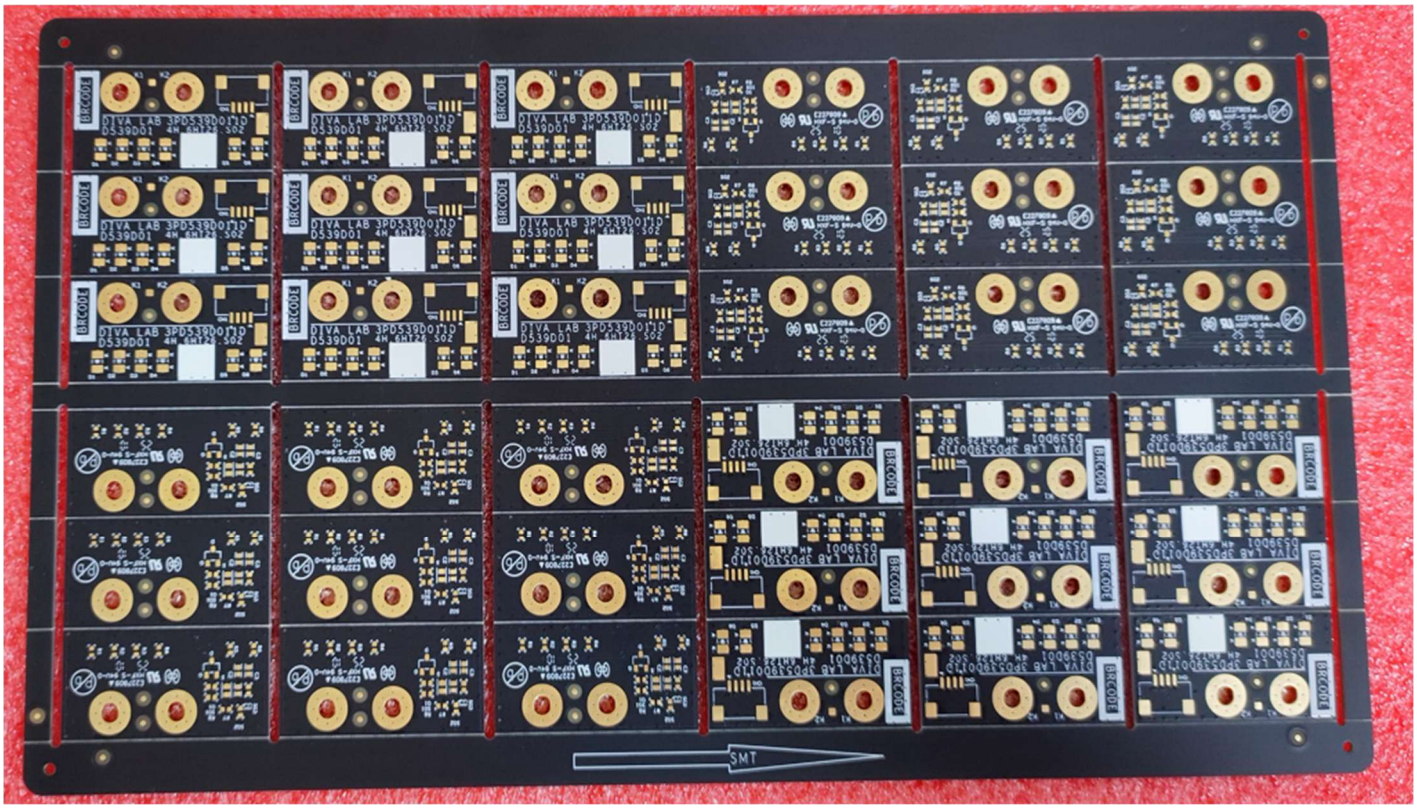


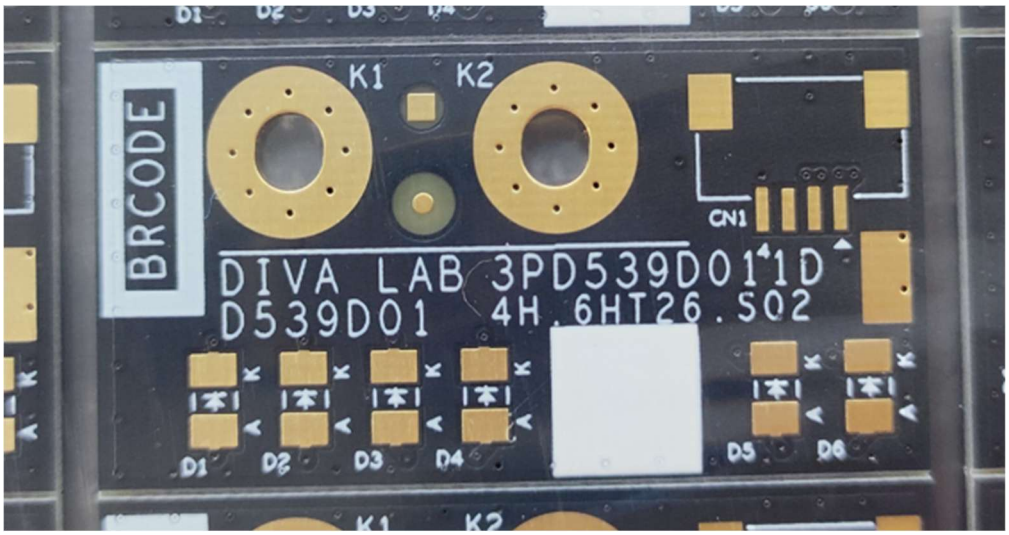


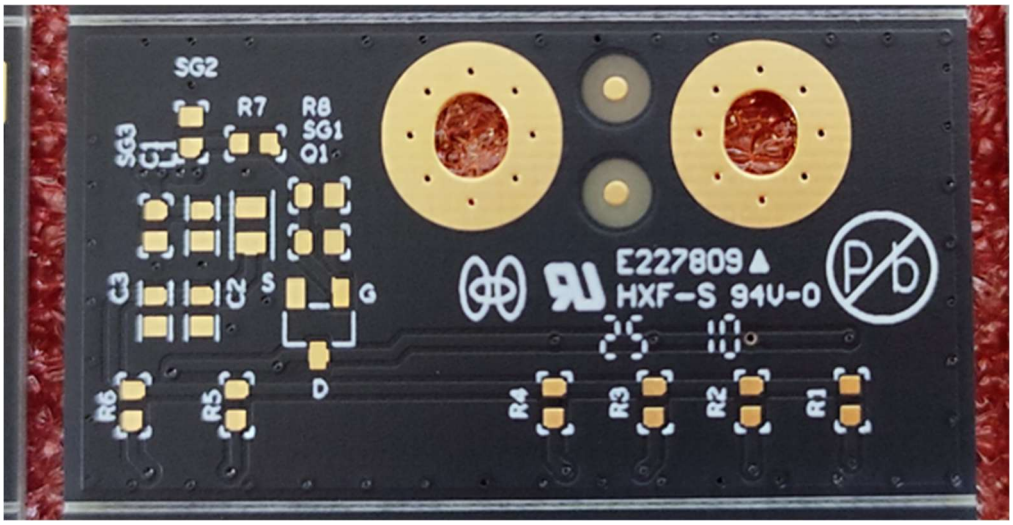


設計驗證
工程課
2025 -04- 02
發行

# 昆 山 市 华 新 线 路 板 有 限 公 司

KUNSHAN CHINA THRIVE CIRCUIT BOARD CO LTD

## Sample Acknowledgement

# 样 品 承 认 书

Customer(顾客名称)：**鈺緯科技** DIVA

Customer P/N(顾客料号)：**3PD539D011D**(P0279)

設計驗證
工程課
2025 -04- 02
發行
鈺緯科技開發股份有限公司

Date(日期)：2025-3-11


Address： NO.7 Qianyang Road，Qiandeng Town，Kunshan ， Jiangsu PR China

（昆山市千灯镇千扬路 7 号）

Tel： Factory 0512-57472099 ； Marketing 0512-57462303 57461784

Fax： Factory 0512-57472089 ； Marketing 0512-57462301

E-mail：huaxing@pub.ks.js.cn

Webside：www.hxpcb.com

Postcode: 215341

## 一、Capability Inspection（性能检测 ）

| Description（内容） | | | Requst（要 求） | Result（结果） | Judgement（判断） |
|---|---|---|---|---|---|
| 1 | Material（板材） | Type（种类） | KB6164 | KB6164 | ACC |
| | | Board THK（板厚） | 1.6±9% | 1.61 | ACC |
| | | Copper THK（铜箔厚度） | H/H OZ | H/H OZ | ACC |
| | | Twist & Warp（翘曲度） | <0.55% | 见附页 | ACC |
| 2 | Legend & Marking（字符 & 标记） | Color(颜色) | 白色 | 白色 | ACC |
| | | UL Mark（UL 标记） | E227809 HXF-S 94V-0 | E227809 HXF-S 94V-0 | ACC |
| | | Date Cord（周期） | YY WW | 25 10 | ACC |
| | | width（最小线宽 mm） | 0.508±15% | 0.506 | ACC |
| | | space（最小线距 mm） | 0.254±15% | 0.256 | ACC |
| | | width（阻抗线宽 mm） | / | / | / |
| | | space（阻抗线距 mm） | / | / | / |
| | | Min.Hole Ring（最小环宽 mm） | 0.127±10% | 0.121 | ACC |
| 4 | Solder Mask（阻焊） | Type(种类) | 海田 | 海田 | ACC |
| | | Color（颜色） | 哑光黑色 | 哑光黑色 | ACC |
| | | Solvent Test（溶济测试） | No Attack（无脱色） | 无脱色 | ACC |
| | | Tape Test（胶带测试） | No Peel Off（无脱落） | 阻焊，字符无剥离 | ACC |
| | | Solderability Test（可焊性测试） | 可焊性良好 | 上锡良好 | ACC |
| 5 | Open/Short（开/短路） | Electron Test（通断测试） | 100% Testing Passed（100% 测试通过） | 100% 测试通过 | ACC |
| 6 | 阻抗测试 | 阻抗测试仪 | / | / | / |
| 7 | Contrast Engineer Date（与工程资料对比） | Contrast Drill Drawing(孔与分孔图) | | 无多孔、少孔 | |
| | | Contrast Trance Film(与原装线路菲林) | | 核对无误 | |
| | | Contrast Solder Mask Film （与原装阻焊菲林) | | 核对无误 | |
| | | Contrast Legend Film(与原装字符菲林) | | 核对无误 | |
| | | Other （其他） | | 无 | |

二、 Hole Size & Slot Size(孔径及槽的尺寸) Unit(单位):mm

| Code(代号) | Dim. & Tol.（尺寸和公差） | PTH（镀通孔） | Measurement（实测尺寸） | | | Judgement（判断） |
|---|---|---|---|---|---|---|
| 1 | 0.30±0.076 | Y | 塞孔无法测 | | | / |
| 2 | 2.00±0.05 | N | 2.025 | 2.025 | 2.025 | ACC |
| 3 | 3.20*3.60±0.076 | Y | 3.22*3.61 | 3.23*3.62 | 3.24*3.63 | ACC |
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三、 Mechanical Dimension Inspection（外型尺寸检查） Unit(单位):mm

| Code(序号) | Dim. & Tol.（尺寸和公差） | Measurement（实测尺寸） | | | Judgement（判断） |
|---|---|---|---|---|---|
| 1 | 261.00±0.127 | 261.01 | 261.02 | 261.03 | ACC |
| 2 | 152.80±0.127 | 152.83 | 152.82 | 152.81 | ACC |
| | | | | | |
| | | | | | |

Inspection by（检查）：沈宇飞 Verified by（审核）柯敏

## PCB List

| | | |
|---|---|---|
| ModelNO. | | |
| Part NO. | 3PD539D011D (P0279) | |
| PCB Spec | PCB size (mm) | 39.50*21.30 mm |
| | PNL size | 261.00*152.80 mm |
| | Pcs /PNL (mm) | 36PCS/1PNL |
| | Thickness | 1.6+/-9% mm |
| | Outline Tolerance(mm) | +/-0.127 |
| | SLOT Tolerance(mm) | +0.1/-0 |
| | PCB hole tolerance(mm) | PTH：±0.076mmNPTH：±0.05mm |
| | V-cut 残厚(mm) | 0.53±0.08mm |
| Raw Material | Grade | FR-4 |
| | Maker | 建滔 |
| | CCL Name | KB6164 |
| | Copper thickness | 1OZ |
| | UL Symbol | E227809 HXF-S 94V-0 |
| | Flammability UL Grade | 94V-0 |
| Finish PCB | PCB Type | 2L |
| | Copper thickness | 1OZ |
| Conductor | Min.Width | 0.508+/-10% mm |
| | Min Gap | 0.254+/-10% mm |
| Soler Mask | Maker | 海田 |
| | Type number | HSR-200 MK |
| | Thickness | 0.46mil (min.>0.15mil at the edge of trace) |
| | color | Black |
| Symbol | Maker | 昱谷 |
| | Type number | YG-400WB |
| | Thickness （10-20um ） | 17.22um |
| | Color | white |
| Surface finish treatment | Type | NA |
| | Thickness ( 0.2um-0.4um ) | NA |
| 化金 处理及镍厚与金厚 | Thickness （ Au：2~6u" / Ni： > 110u" ） | 镍厚2.55UM;金厚0.055UM |
| | Gold Finger Beveling Angel (30 ±2°) | NA |
| 板弯 Bow | 板弯<长边* 0.55% ; 且<1.6mm ( Min. follow IPC criteria) | 0.28mm |
| 板翘 Twist | 板翘 < PCB/Panel 对角线长 *0.55%; 且<1.6mm ( Min. follow IPC criteria) | 0.19mm |
| 槽与相邻Trace之距离 | ≧ 0.5 mm | PASS |
| PTH 孔铜厚度 | Min. > 0.8 mil , Avg. ≧ 0.9 mil | PASS |
| Hole Quality | PTH 孔环不得有毛边 /毛刺 /破孔 /缺角 /翘铜 /凸起现象 | PASS |
| 焊点偏, 孔偏，文字偏移 | <0.1mm | 0.05mm |
| Multi Min. Trace 宽度, 间距 | 宽度≧4mil ,间距≧ 4mil | PASS |
| Impedance Control | Characteristic impedance ± 10 %<br>Differential impedance ± 10 % | PASS |
| Lonic Contaminiation | ≦1.56ug NaCl/sq.cm$^2$ | 0.33ug NaCl/sq.cm$^2$ |
| BGA & Non BGA via | 所有Via Hole需两面塞黑漆，不得假性漏铜(BGA 处严格执行)，不能具有焊锡性（除非Gerber特别定义） | PASS |
| Via塞孔填充量(蓝漆,树脂) | BGA区域铝片塞孔>60%(严格执行)，其他区域连塞带印>20% | 1053.98um |
| Others | Version Number | A |

Prepare By：沈宇飞　　Confirm With：王平

# 昆 山 市 华 新 线 路 板 有 限 公 司

KUNSHAN CHINA THRIVE CIRCUIT BOARD CO LTD

## 开短路测试报告

日期：2025-3-11

| | | |
|---|---|---|
| 客户编号：3PD539D011D(P0279) | | 客户名称：鈺緯科技 DIVA |
| 本厂编号：2165AUTA0 | 数量：6SET | 生产周期：25 10 |

| 测试条件 | 测试要求 | 测试结果 |
|---|---|---|
| 飞针测试（移动探针）<br>测试电压：250V<br>导通电阻：50Ω<br>绝缘电阻：34MΩ | 无开路、短路 | 100% PASS |
| | | |
| | | |
| | | |
| | | |

备注：

**良率：**

本料号板子生产数量为 6SET，最终合格数量为 6SET，产品良率为 100 %。

**产品追溯性：**

2165AUTA0 板子的每个 pcs 上都有标记如下：




是华新厂标；E227809 是华新厂 UL 标记； S 代表双面板；94v-0 是最高防火等级；25 10. 代表了 25 年第 10 周。

结论：

■ 合格： □ 拒收：

| | | | |
|---|---|---|---|
| 拟 制 | 沈宇飞 | 批 准 | 柯敏 |

# PCB 板弯/板翘测量

| 客户： | 鈺緯科技 DIVA | 料号： | 3PD539D011D (P0279) | 试验日期： | 2025-3-11 |
|---|---|---|---|---|---|
| 日期代码： | 25 10 | 试验数量： | 5SET | 测量设备： | PIN 针 |
| 测量方法：参见：Qisda Display Product’ s PCB General Rule | | | | | |
| 判定标准：板弯≤0.55%.板翘≤0.55% | | | | | |
| 备注： | | | | | |
| 测试结果：合格 | | | | | |

| 项 目 | 测量值 | | | | | 判定 | |
|---|---|---|---|---|---|---|---|
| | 1 号板 | 2 号板 | 3 号板 | 4 号板 | 5 号板 | 合格 | 不合格 |
| 板 弯 | 0.23% | 0.19% | 0.33% | 0.31% | 0.32% | √ | |
| 板 翘 | 0.20% | 0.15% | 0.21% | 0.31% | 0.30% | √ | |
| | | | | | | | |
| | | | | | | | |

测试结果： 合格

试验：沈宇飞 审核：柯敏

# PCB 防焊/文字附着力测试

| | | | | | |
|---|---|---|---|---|---|
| 客户： | 鈺緯科技 DIVA | 料号： | 3PD539D011D (P0279) | 试验日期： | 2025-3-11 |
| 日期代码： | 25 10 | 试验数量： | 6SET | 测量设备： | 3M 胶带 |
| 测量方法：参见：Qisda Display Product’ s PCB General Rule | | | | | |
| 判定标准： 防焊层及文字均不能脱落。 | | | | | |
| 备注： | | | | | |
| 测试结果：合格 | | | | | |

| 编 号 | 防焊附着力 | 文字附着力 | 判定 | |
|---|---|---|---|---|
| | | | 合格 | 不合格 |
| 1 · | □ 脱落 ■ 无脱落 | □ 脱落 ■ 无脱落 | √ | |
| 2 · | □ 脱落 ■ 无脱落 | □ 脱落 ■ 无脱落 | √ | |
| 3 · | □ 脱落 ■ 无脱落 | □ 脱落 ■ 无脱落 | √ | |
| 4 · | □ 脱落 ■ 无脱落 | □ 脱落 ■ 无脱落 | √ | |
| 5 · | □ 脱落 ■ 无脱落 | □ 脱落 ■ 无脱落 | √ | |

测试结果：合格

检测： 沈宇飞　　审核：柯敏

# 切片检查报告

## MICROSECTION INSPECTION REPORE

**PROD P/N**：2165AUTA0 **DATE CODE**：25 10 **SAMPLE SIZE**：2PCS

CUSTOMER：鈺緯科技 DIVA **CUST P/N**：3PD539D011D MICROSECTION NO：①
(P0279)

Requirement:(unit:um)

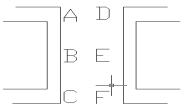
| HOLE WALL COPPER | Roughness | Tin thickess | S/M thickness |
|---|---|---|---|
| Min: ≥20um | Drill: \ | Hole wall: \ | Conductor surface:: ≥11.7um |
| Ave: ≥25um | Plating: \ | Surface: \ | Conductor corner: ≥3.81um |

HOLE WALL CROS-SECTION DATA

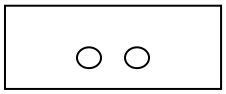
| HOLE WALL COPPER | | | | | | | ROUGHNESS | | TIN THK | |
|---|---|---|---|---|---|---|---|---|---|---|
| A | B | C | D | E | F | AVE | DR | PL | SUR | HOLE |
| 25.6 | 25.8 | 25.7 | 25.3 | 25.2 | 25.1 | 25.45 | \ | \ | \ | \ |
| 25.8 | 25.7 | 25.3 | 25.6 | 25.8 | 25.7 | 25.65 | \ | \ | \ | \ |
| \ | \ | \ | \ | \ | \ | \ | \ | \ | \ | \ |

| CONDUCTOR COPPER | | DIELECTRIC THICKNESS | | S/M THICKNESS | |
|---|---|---|---|---|---|
| LAYER NO. | RESULT | LAYER NO. | RESULT | CONDUCTOR SURFACE | CONDUCTOR CORNER |
| 1 L1 | 38.5 | | | 21.4 | 13.2 |
| 2 L2 | 37.4 | | | 16.6 | 9.8 |

孔铜测量位置




孔位



Disposition: Acc■ Rei □

Tested By: 沈宇飞 Date: 2025-3-11

Approved By: 王平 Date: 2025-3-11

昆 山 市 千 灯 华 新 线 路 板 厂

KUNSHAN CHINA THRIVE CIRCUIT BOARD FACTORY

# 可焊性测试报告

# SOLDERABILITY TEST REPORT

PROD P/N： 2165AUTA0 DATE CODE： 25 10

CUSTOMER P/N： 3PD539D011D (P0279) SAMPLE SIZE： 5PCS

CUSTOMER： 鈺緯科技 DIVA

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APPARATUS ：OVEN，SOLDER POT，THERMOMETER， GRADUATED MAGNIFIER 10X

FLUX： CH-1001 ETC

TEST CONDITION：BAKING TEMPERATURE： 106 ℃, TIME： 2 HOURS

SOLDERING TEMP： 260 ℃, TIME： 10 SECONDS.

TEST METHOD： FLOAT SOLDER

---

TEST RESULT

| ITEM（项目） | APPROVAL STANDARD(允许标准) | TEST RESULT （测试结果） |
|---|---|---|
| APPEARANCE OBSERVATION （外观观察） | 1、NO BLISTERS 、SHIFTING OF THE S/M （阻焊无起泡、脱落现象）<br>2、NO DISCOLOR 、SHIFTING OF THE LEGEND （文字无变色、脱落现象）<br>3、NO DELAMINATION、MEASLING OF THE BAORD（无爆板、白点）<br>4、NO BLOW-HOLE OF THE PTHs（无吹孔） | 1 阻焊无起泡、脱落现象<br>2 文字无变色、脱落现象<br>3 无爆板、白点<br>4 无吹孔 |
| SOLDERBILITY （吃锡性） | GOOD SOLDERBILITY OVER 95% （吃锡 95%以上良好） | 吃锡 100% |

Disposition: Acc ■ Rej □

Tested By: 沈宇飞 Date: 2025-3-11

Approred By: 王平 Date: 2025-3-11

QA26-C 02-2006

# 热应力测试报告
# THERMAL STRESS TEST REPORT

PROD P/N：2165AUTA0 DATE CODE：25 10

CUSTOMER P/N：3PD539D011D(P0279) SAMPLE SIZE：5PCS

CUSTOMER：鈺緯科技 DIVA

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APPARATUS：OVEN，SOLDER POT，THERMOCOUPLE INDICATOR，STOPWATCH，MICROSCOPE

FLUX：CH-1001

TEST CONDITION：BAKING TEMPERATURE：126 ℃, TIME：6 HOURS

SOLDERING TEMP：288 ℃, TIME 10 SECONDS.

TEST METHOD：DIP SOLDER

---

## TEST RESULT

| ITEM（项目） | APPROVAL STANDARD(允许标准) | TEST RESULT （测试结果） |
|---|---|---|
| APPEARANCE OBSERVATION （外观观察） | 1、NO BLISTERS 、SHIFTING OF THE S/M （阻焊无起泡、脱落现象）<br>2、NO DISCOLOR 、SHIFTING OF THE LEGEND （文字无变色、脱落现象）<br>3、NO DELAMINATION、MEASLING OF THE BAORD（无爆板、白点） | 1、阻焊无起泡、脱落现象<br>2、文字无变色、脱落现象<br>3、无爆板、白点 |
| MICROSECTION OBSERVATION（切片观察） | 1、NO COMER CRACK （无崩角）<br>2、NO RUPTURE OF THE PLATING(镀层无断裂） | 1、无崩角<br>2、镀层无断裂 |
|  | | |

Disposition: Acc ■ Rej □

Tested By:沈宇飞 Date:2025-3-11

Approved By:王平 Date:2025-3-11

昆 山 市 千 灯 华 新 线 路 板 厂

KUNSHAN CHINA THRIVE CIRCUIT BOARD FACTORY

# 塞孔报告

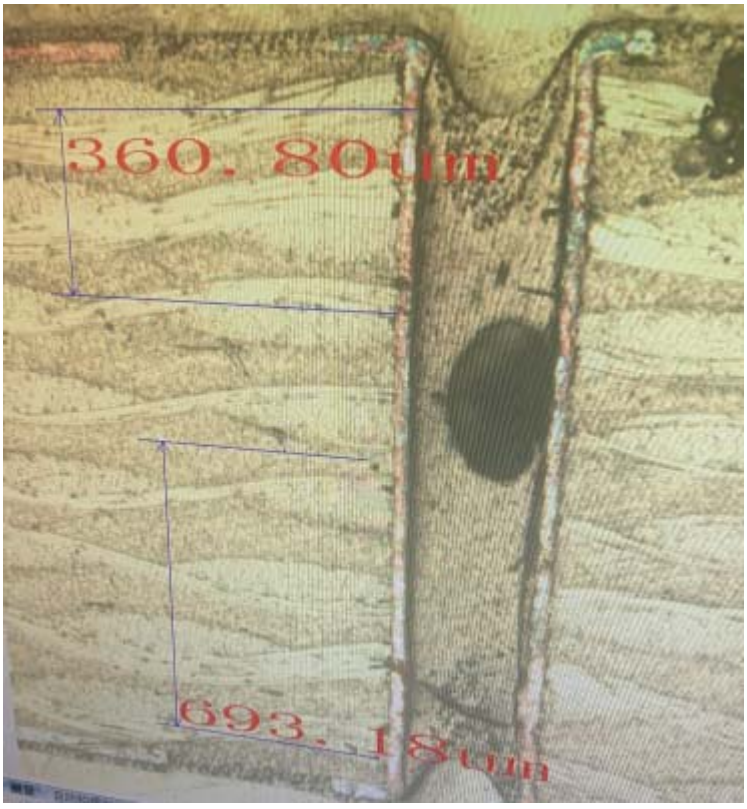
# Plugged Test Via Hole

PROD P/N: 2165AUTA0 DATE CODE: 25 10

CUSTOMER P/N: 3PD539D011D (P0279) SAMPLE SIZE: 1PCS

CUSTOMER: 鈺緯科技 DIVA

| plugged of test via(min. 60%) | spec | actual | |
|---|---|---|---|
| | ＞600um | 1053.98 | um |




Disposition: Acc ■ Rej □

Tested By: 沈宇飞 Date: 2025-3-11

Approved By: 柯敏 Date: 2025-3-11

QA26-C 02-2006

# PCB Material Supplier List

以下是 Display 2008-09-27 的 PCB 素材板合格供应商清单，请 PCB 厂商遵循。如果需导入新的板材厂商，必须在 Qisda 核实并加入这张 PCB Material Supplier List 表格后方可使用。

| PCB Material Type | Supplier/Material |
|---|---|
| FR-1 (1L) | 斗山 (DS) |
| FR-1 (1L) | 长春 (L) |
| FR-1 (1L) | 长兴 (EC) |
| FR-1 (1L) | 建韬 (Kingboard) |
| FR-4 (2L-6L) | 南亚 (NAYA) |
| FR-4 (2L-6L) | 联鑫 |
| FR-4 (2L-6L) | 台光 (EMC) |
| FR-4 (2L-6L) | ISOLA |
| FR-4 (2L-6L) | 建韬 (Kingboard) |
| FR-4 (2L-6L) | 联茂 (ITEQ) |
| FR-4 (2L-6L) | 斗山 (DS) |
| FR-4 (2L-6L) | 腾辉 |
| CEM-1 (1L) | 斗山 (DS) |
| CEM-1 (1L) | 长春 (L) |
| CEM-1 (1L) | 长兴 (EC) |
| CEM-1 (1L) | 建韬 (Kingboard) |
| CEM-1 (1L) | 南亚 (NAYA) |

Supplier:

# 单层板信赖性测试项目

| | 测试项目 | 测试方法 | 抽样频率 |
|---|---|---|---|
| 1 | 剥离强度 | IPC-TM-650 2.4.28.1 | 1PCS /每客户机种/每季度 |
| 2 | 离子污染度测试 | < 6.0 μg NaCL / inch | 1PCS /每客户机种/每季度 |
| 3 | 冷热冲击 | (-65℃/60 分~125℃/60 分)<br>1 循环<br>共 100 循环试验 | 1PCS /每客户机种/每季度 |
| 4 | SIR 测试 | 85℃ @ 85%RH, X96hrs @ 50V bias | 1PCS /每客户机种/每季度 |
| 5 | 耐湿性 | 40℃ @ 90%RH, 1000H | 1PCS /每客户机种/每季度 |

# 多双层板信赖性测试报告

| | 测试项目 | 测试方法 | 抽样频率 |
|---|---|---|---|
| 1 | 离子污染度测试 | < 6.0 μg NaCL / inch | 1PCS/每客户机种/季度 |
| 2 | Peel Strength 测试 | IPC-TM-650 2.4.8 | 1PCS/每客户机种/季度 |
| 3 | 耐湿性测试 | IPC-TM-650 2.6.3 | 1PCS/每客户机种/季度 |
| 4 | SIR 测试 | 85℃ @ 85%RH, X96hrs @ 50V bias | 1PCS/每客户机种/季度 |
| 5 | thermal shock 测试 | IPC -TM-650. 2.6.7.2 | 1PCS/每客户机种/季度 |
| 6 | 温度循环测试 | IPC-TM-650 2.6.3 | 1PCS/每客户机种/季度 |

KB

# 產 品 技 術 資 料

TECHNICAL INFORMATION

# KB-6160（ANSI：FR-4）

## 覆銅箔環氧玻纖布層壓板

### 特 點

- 優異的尺寸穩定性
- 優良的耐熱性能和機械性能
- 耐漏電起痕指數（CTI150V/175V/300V/600V）
- 符合 IPC-4101B 的規範要求

### Features

- Excellent dimensional stability
- Excellent heat resistance and mechanical properties
- CTI value150V/175V/ 300V / 600V
- IPC-4101B specification is applicable .

### 應用領域

- 電腦、攝像機、儀器儀錶、通訊設備等

### Application

- Computer , VCR, Instrumentation, Communication equipment etc.

### General Properties 一般特性

| Test Item<br>測試項目 | Unit<br>單位 | Test Method<br>(IPC-TM-650)<br>測試方法 | Test Condition<br>處理條件 | Spec<br>（IPC-4101B）<br>規格值 | Typical Value<br>典型值 |
|---|---|---|---|---|---|
| Peel Strength (1OZ)<br>銅箔剝離強度 | N/mm | 2.4.8 | 125℃ | ≥0.7 | 1.70 |
| | | | Float 288℃ / 10Sec | ≥1.05 | 1.75 |
| Thermal stress<br>熱應力 | Sec | 2.4.13.1 | Float288℃/unetched | ≥10 | 60<br>No delamination |
| Bow / Twist<br>彎弓度/翹曲度 | % | 2.4.22.1 | A | ≤ 1.0 | 021 / 0.39 |
| Flexural Strength<br>抗彎強度 | $N/mm^2$ | 2.4.4 | Warp | ≥415 | 560 |
| | | | Fill | ≥345 | 410 |
| Flammability<br>燃燒性 | Rating | UL94 | UL94 | UL94 V-0 | V-0 |
| Glass Transition (Tg)<br>玻璃化转变温度 | ℃ | 2.4.25 | E-2/105（DSC） | ≥130 | 135 |
| Surface Resistance<br>表面電阻 | MΩ | 2.5.17.1 | C-96/35/90 | $\geq 1.0\times10^4$ | $1.0\times10^6$ |
| Volume Resistance<br>體積電阻 | MΩ-cm | 2.5.17.1 | C-96/35/90 | $\geq 1.0\times10^6$ | $1.0\times10^8$ |
| Dielectric Constant<br>介電常數 | — | 2.5.5.2 | Etched/@1 MHZ | ≤5.4 | 4.5 |
| Loss Tangent<br>介質損耗 | — | 2.5.5.2 | Etched/@1 MHZ | ≤0.035 | 0.022 |
| Arc Resistance<br>耐電弧性 | Sec | 2.5.1 | D-48/50+D-0.5/23 | ≥60 | 125 |
| Moisture Absorption<br>吸水率 | % | 2.6.2.1 | D-24/23 | ≤0.80 | 0.12 |
| Z-Axis Expansion<br>A-轴热膨胀系数 | ppm/℃ | 2.4.24 | E-2/105 TMA | — | 48/284 |
| Comparative Tracking Index<br>相比漏電起痕指數 | V | IEC 112 | Etched/0.1%$NH_4Cl$ | AABUS | 150 /175<br>300 / 600 |

Remarks: 可提供不同 CTI 等級的板材 The CCL may offer different CTI grade.
Specimen Thickness: 1.6 mm 1/1 樣品厚度：1.6 mm 1/1
A=Maintain original shape,do not make handling 保持原樣,不作處理
C= Temperature and humidity conditioning 在恒溫恒濕的空氣中處理
E=Temperature conditioning 在恒溫的空氣中處理
D= Temperature conditioning immersion in distilled water. 浸在恒溫的水中處理

KB

# 產 品 技 術 資 料

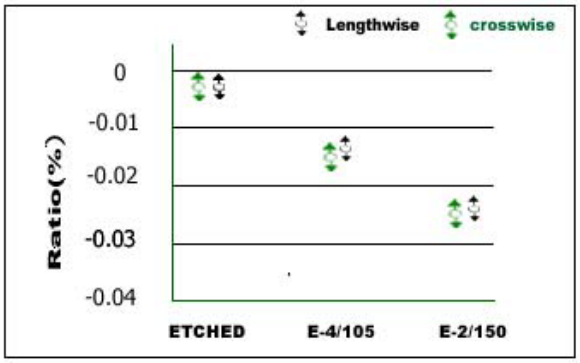
TECHNICAL INFORMATION

# KB-6160（ANSI：FR-4）

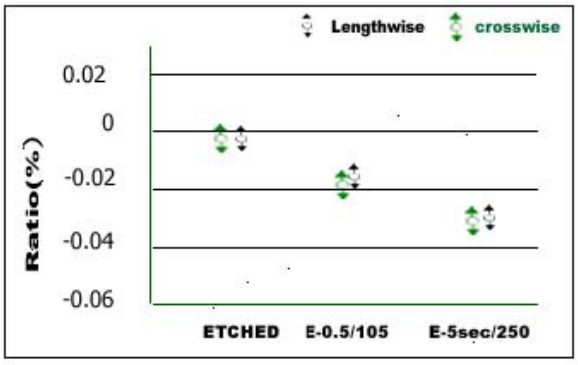
## 覆銅箔環氧玻纖布層壓板

### Speciality Chart 板材特性圖

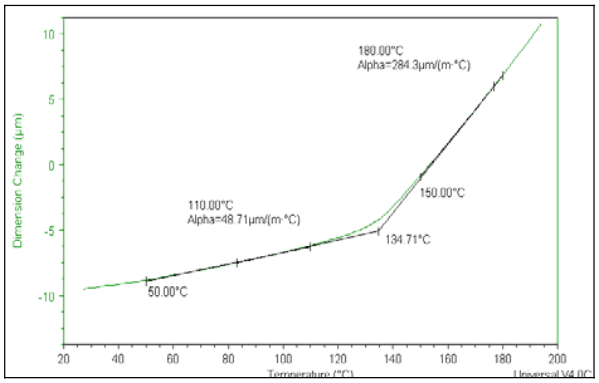
Dimensional stability　尺寸穩定性



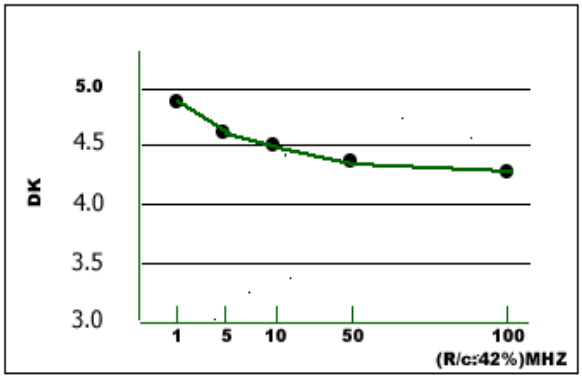

Dimensional stability–PCB process （size:360*310mm）




Thermal expansion of Z-direction (test by TMA)




Dielectric constant　介電常數




### Purchasing Information / 採購資訊

| Base colour<br>基板顏色 | Thickness<br>厚度 | Copper Cladding<br>銅箔厚度 | Regular Size（mm）<br>常規尺寸 | CTI Value<br>CTI 值 |
|---|---|---|---|---|
| 白色 white | 0.5mm ~<br>3.5mm | 18 μ m,<br>35 μ m,<br>70 μ m. | 1020*1220mm （40″*48″）<br>1067*1220mm （42″*48″）<br>915*1220mm （36″*48″）<br>1041*1245mm （41″*49″） | 150V/175V<br>300V/600V |

Note: Other sheet size and thickness could be available upon request.
可根據客戶要求提供其他尺寸和厚度.

ONLINE CERTIFICATIONS DIRECTORY

# ZPMV2.E227809
# Wiring, Printed - Component

Enhanced searching capability for this category can be found in UL's iQ Family of Databases (iq.ul.com).

Page Bottom

## Wiring, Printed - Component

See General Information for Wiring, Printed - Component

**KUNSHAN HUAXIN CIRCUIT BOARD CO LTD** E227809
7 QIAN YANG HWY
QIANDENG TOWN
KUNSHAN, JIANGSU 215341 CHINA

| | Cond Width | | | | Max | | | Max | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Min | Cond | | Area | Solder | | Oper | | Meets | C |
| | Min | Edge | Thk | SS/ | Diam | Limits | | Temp | Flame | UL796 | T |
| Type | mm(in) | mm(in) | mic(mil) | DS | mm(in) | C | sec | C | Class | DSR | I |
| **Multilayer printed wiring boards.** | | | | | | | | | | | |
| **HS-2** | 0.075 (0.003) | 0.23 (0.009) | 17 (0.67) Int:34 | DS | 38.1 (1.5) | 260 | 5 | 130 | V-0 | ▲ | - |
| **HS-3** | 0.075 (0.003) | 0.12 (0.005) | 17 (0.67) Int:34 | DS | 38.1 (1.5) | 288 | 5 | 130 | V-0 | ▲ | - |
| **HX-M** | 0.15 (0.006) | 0.43 (0.017) | 17 (0.67) | DS | 25.4 (1.0) | 260 | 7 | 130 | V-0 | All | * |
| **HX-M (I)** | 0.21 (0.008) | 0.21 (0.008) | 17 (0.67) Int:102 | DS | 25.4 (1.0) | 260 | 7 | 130 | V-0 | All | * |
| **HX-N** | 0.15 (0.006) | 0.43 (0.017) | 17 (0.67) | DS | 12.7 (0.5) | 260 | 7 | 130 | V-0 | All | * |
| **HXF-M** | 0.10 (0.004) | 0.12 (0.005) | 17 (0.67) Int:34 | DS | 25.4 (1.0) | 260 | 10 | 130 | V-0 | All | - |
| **Single layer printed wiring boards.** | | | | | | | | | | | |
| **HX-S** | 0.15 (0.006) | 0.43 (0.017) | 17 (0.67) | DS | 25.4 (1.0) | 260 | 7 | 130 | V-0 | All | * |
| **HX-S (I)** | 0.14 (0.006) | 0.42 (0.017) | 17 (0.67) | DS | 25.4 (1.0) | 260 | 7 | 130 | V-0 | - | * |
| **HX-S (II)** | 0.14 (0.006) | 0.42 (0.017) | 17 (0.67) | DS | 25.4 (1.0) | 260 | 7 | 130 | V-0 | All | * |
| **HX-S (III)** | 0.21 (0.008) | 0.21 (0.008) | 17 (0.67) Int:102 | DS | 25.4 (1.0) | 260 | 7 | 130 | V-0 | All | * |
| **HX-SA** | 0.20 (0.008) | 0.60 (0.024) | 17 (0.67) | DS | 25.4 (1.0) | 260 | 7 | 120 | V-0 | All | * |
| **HX-SB** | 0.20 (0.008) | 0.40 (0.016) | 17 (0.67) | DS | 25.4 (1.0) | 260 | 7 | 130 | V-0 | All | * |
| **HXF-S** | 0.10 (0.004) | 0.12 (0.005) | 17 (0.67) | DS | 25.4 (1.0) | 260 | 10 | 130 | V-0 | ▲ | - |
| **JHS-S** | 0.15 (0.006) | 0.15 (0.006) | 17 (0.67) | DS | 25.4 (1.0) | 260 | 7 | 130 | V-0 | All | - |

* - CTI PLC is marked on individual board.

Marking: Company name or trademark  , type designation and Recognized Component Mark,  . May be followed by a suffix to denote factory identification.

Last Updated on 2009-09-17

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Questions? Notice of Disclaimer Page Top

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An independent organization working for a safer world with integrity, precision and knowledge.

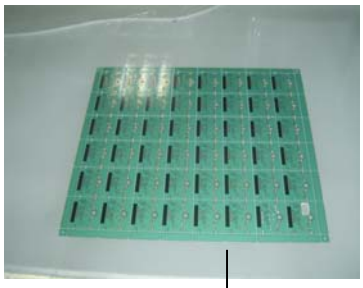


# Part Packing Specification

华新料号:2165AUTA0

明基料号： 3PD539D011D(P0279)
4H.6HT26.S02

包装方法及流程如下：



每SET有36PCS组成



每一小包真空包装 25 SET,
共900PCS.均为同一周期。



每箱包装8包,共7200PCS



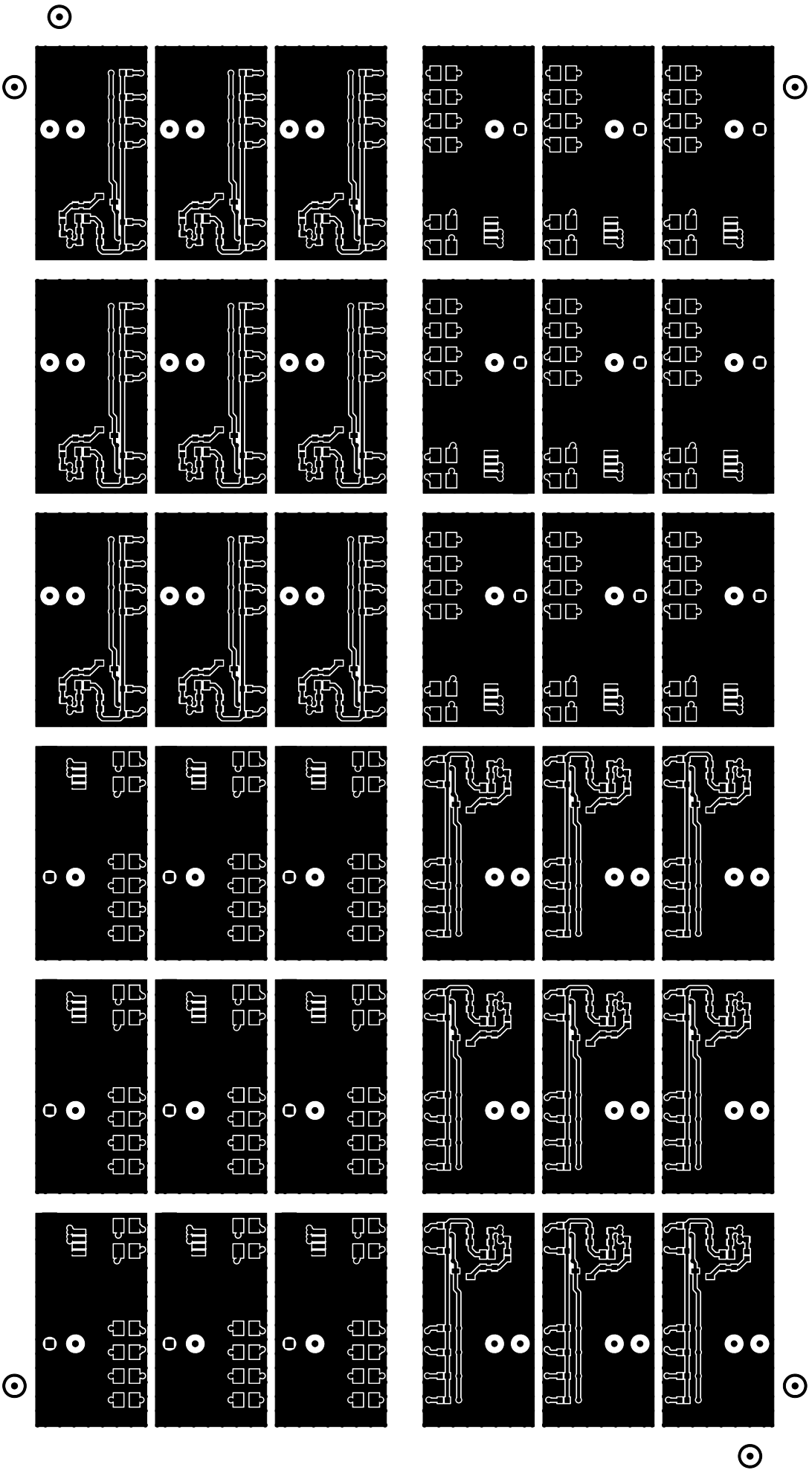
包装好后用透明胶带封箱

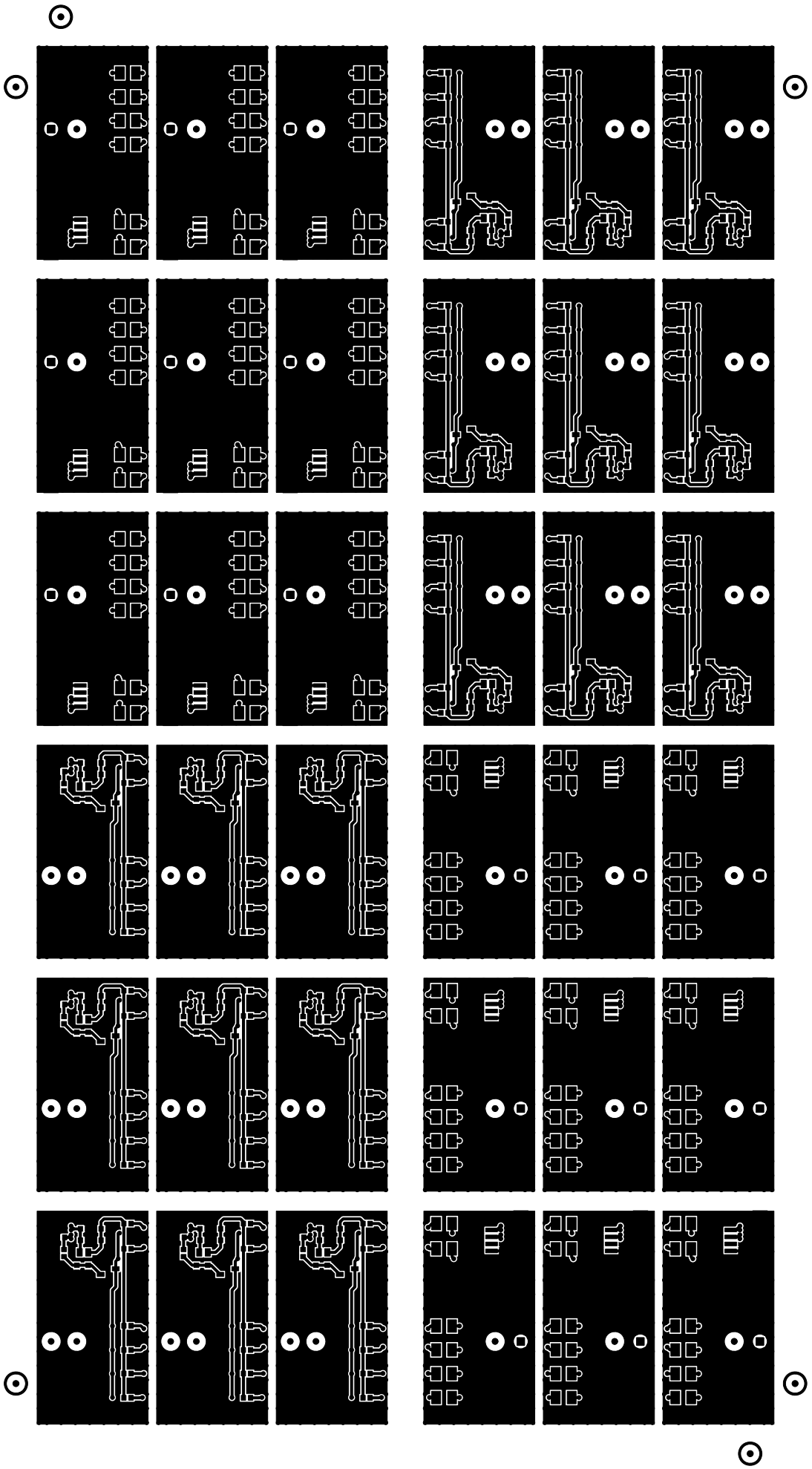


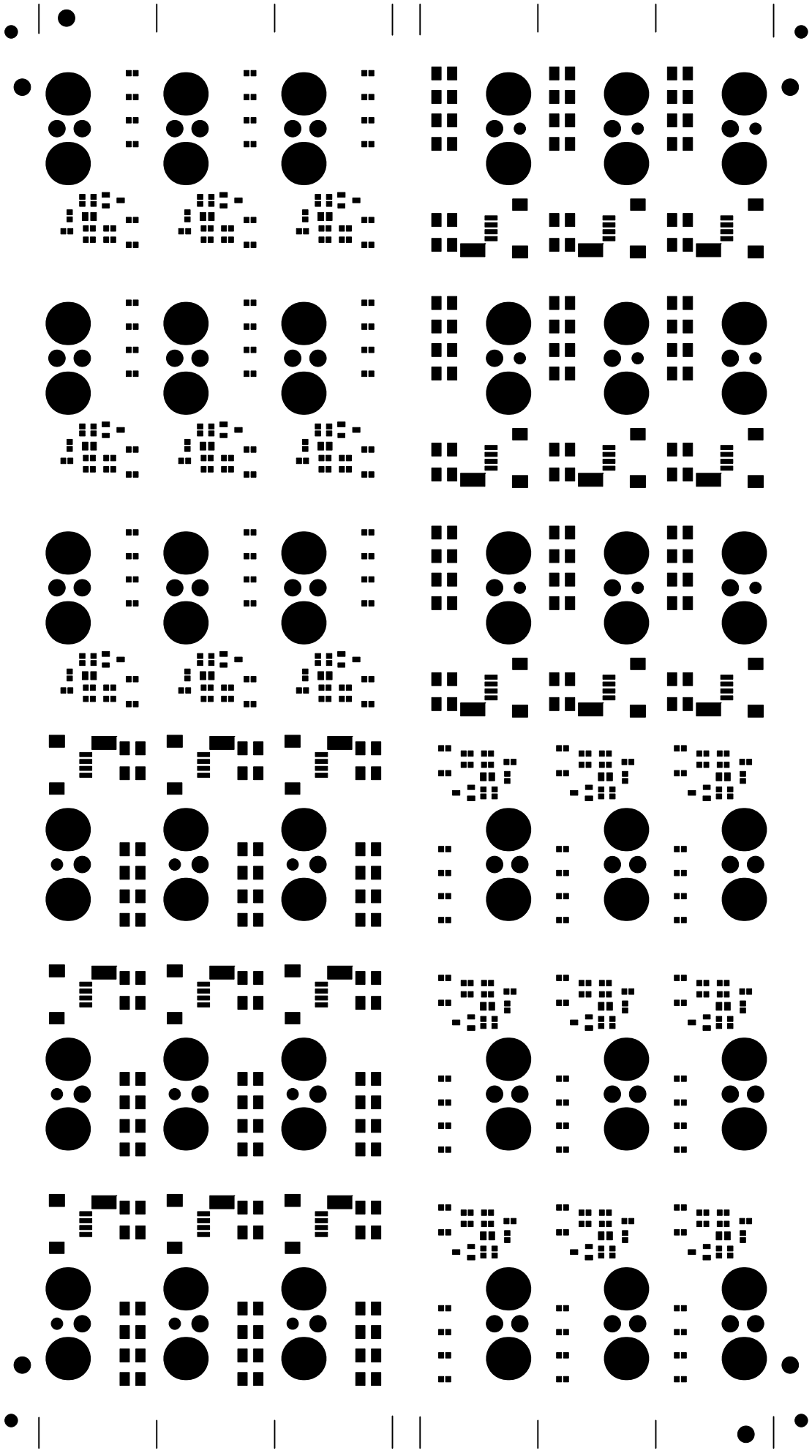
贴标签和GP标识。

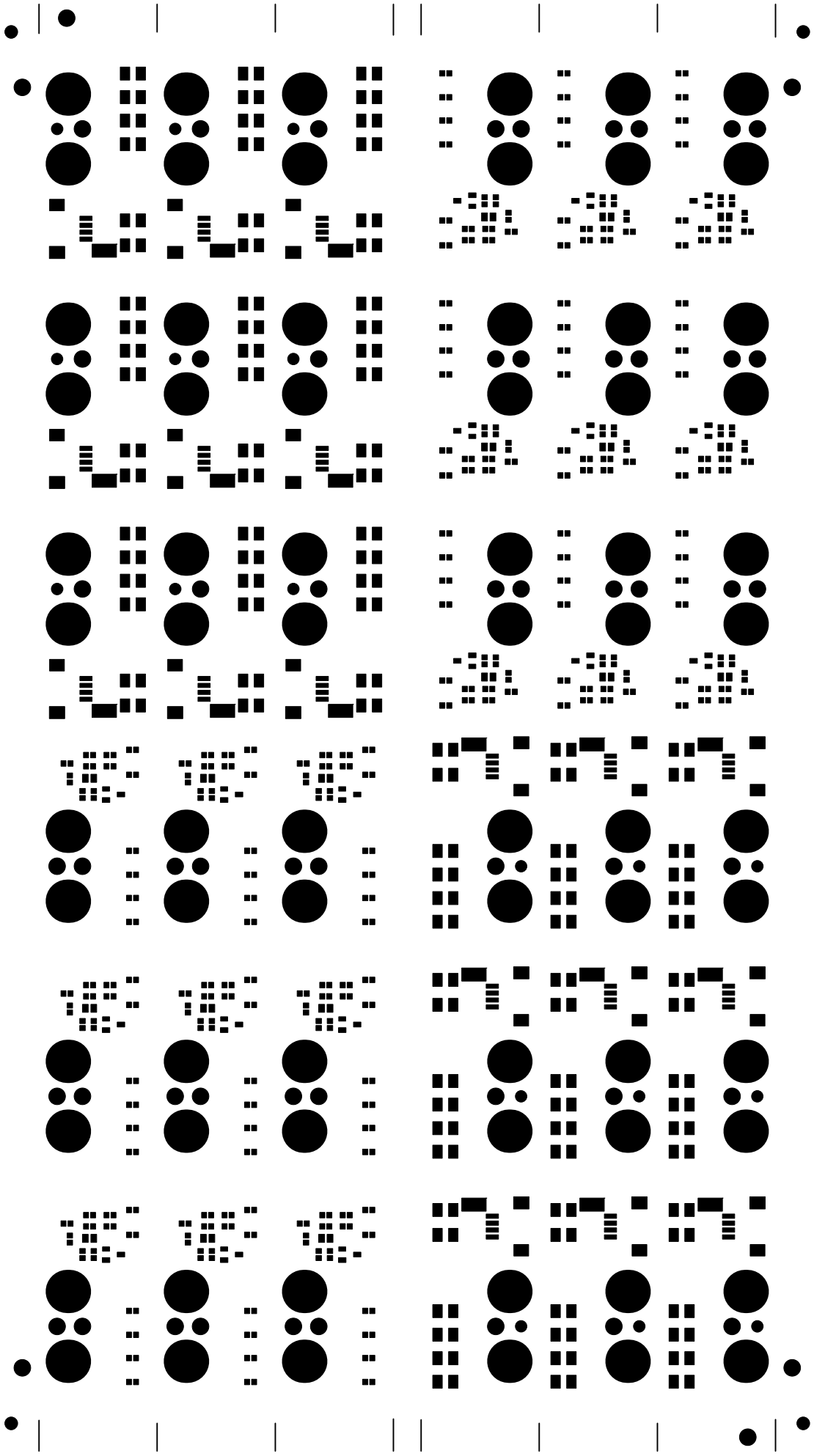
检查：沈宇飞
日期：2025-3-11

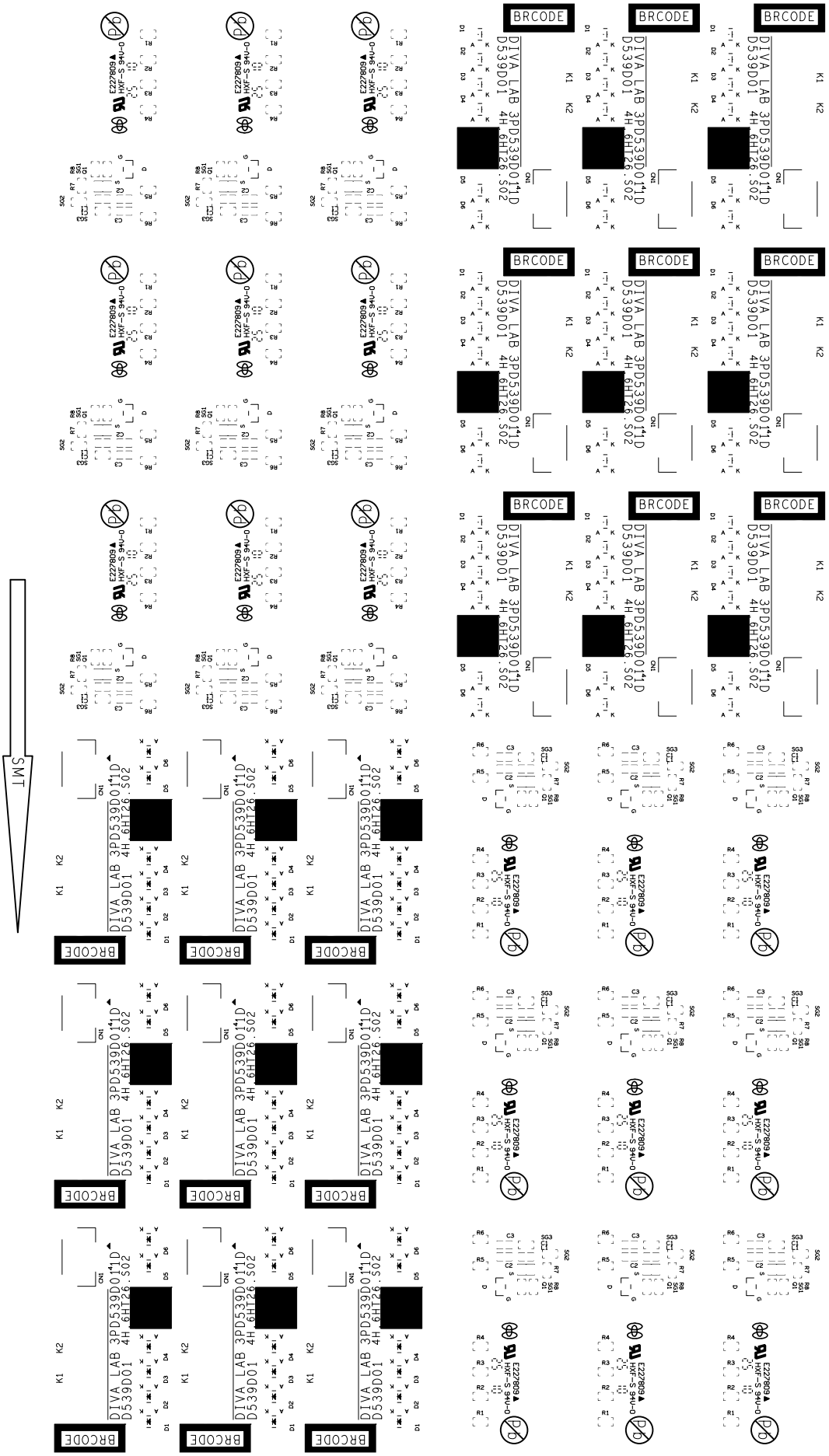
审核：柯敏
日期：2025-3-11

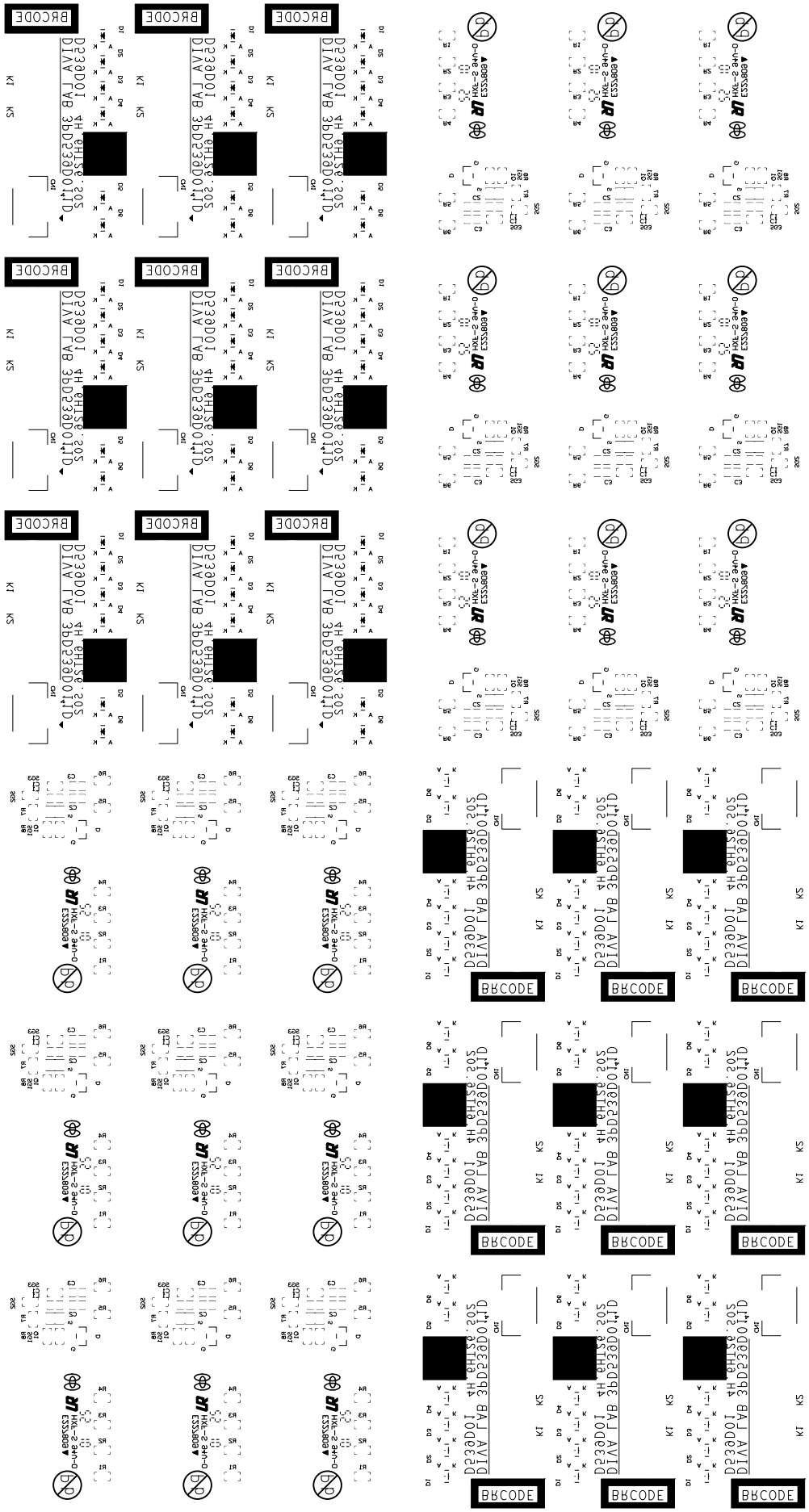




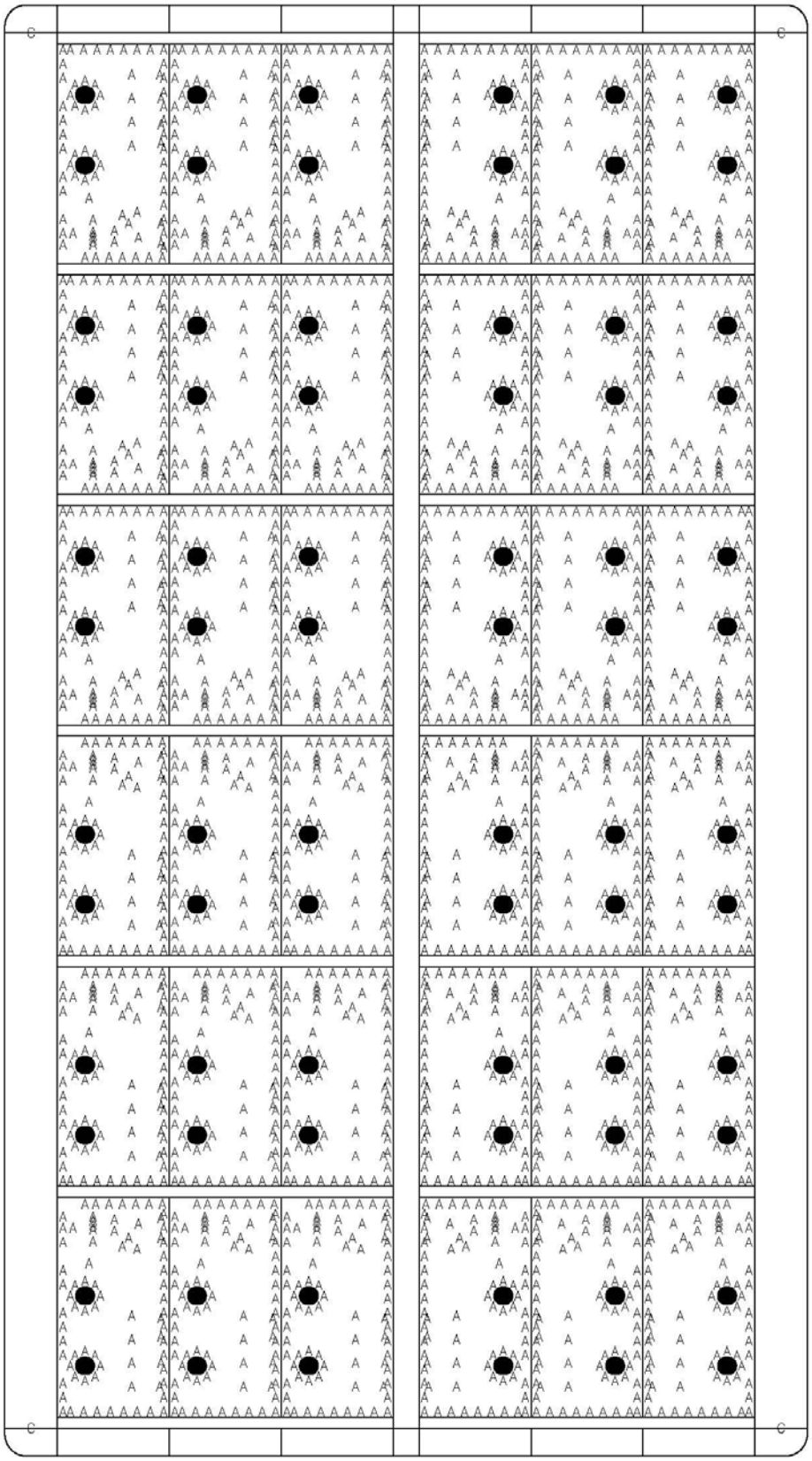





SM1
BRCODE
DIVA LAB 3PD539D011D
D539D01 4H 6HT26.S02
K1 K2
CN1
D1 D2 D3 D4 D5 D6
R1 R2 R3 R4 R5 R6 R7 R8
C1 C2 C3
SG1 SG2 SG3
E227809▲
HXF-S 94V-0

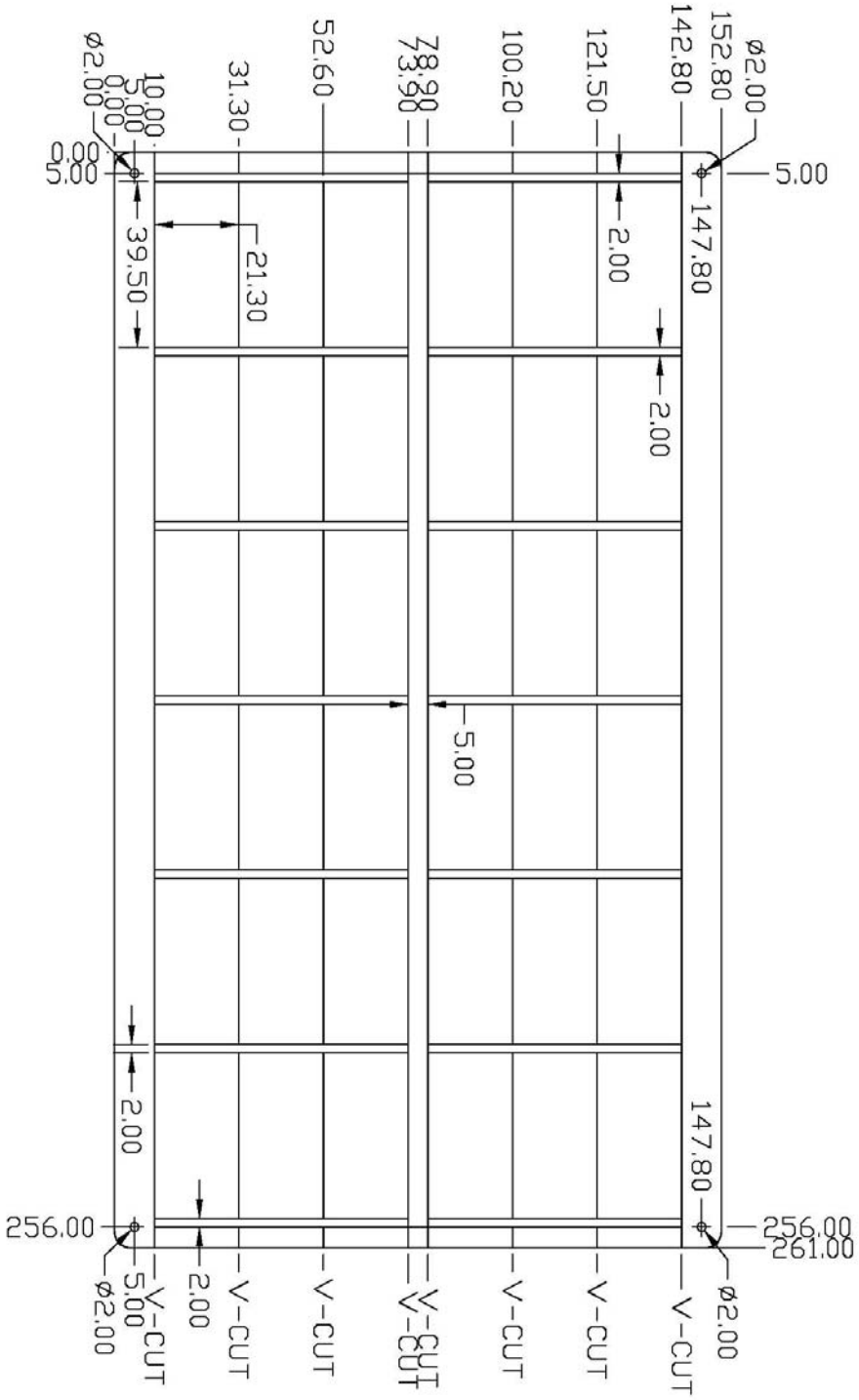


CAM350 PRO V 7.5.1 : Thu Dec 19 09:02:29 2024 - 2.cam



TOOL CHART

| No. | Size(mm) | Count | Legend |
|---|---|---|---|
| 4 | 0.30 | 2880 | A |
| 6 | 1.60 | 144 | B |
| 7 | 2.00 | 4 | C |
| 8 | 3.20 | 216 | D |
| | Total | 3244 | |


ø2.00
152.80
142.80
121.50
100.20
78.90
73.90
52.60
31.30
10.00
5.00
0.00
ø2.00
0.00
5.00
5.00
147.80
2.00
2.00
39.50
21.30
5.00
2.00
147.80
256.00
256.00
261.00
ø2.00
V-CUT
V-CUT
V-CUT
V-CUT
V-CUT
V-CUT
V-CUT
2.00
5.00
ø2.00

# “Qisda 與 Diva 合作的 EMS 機種”

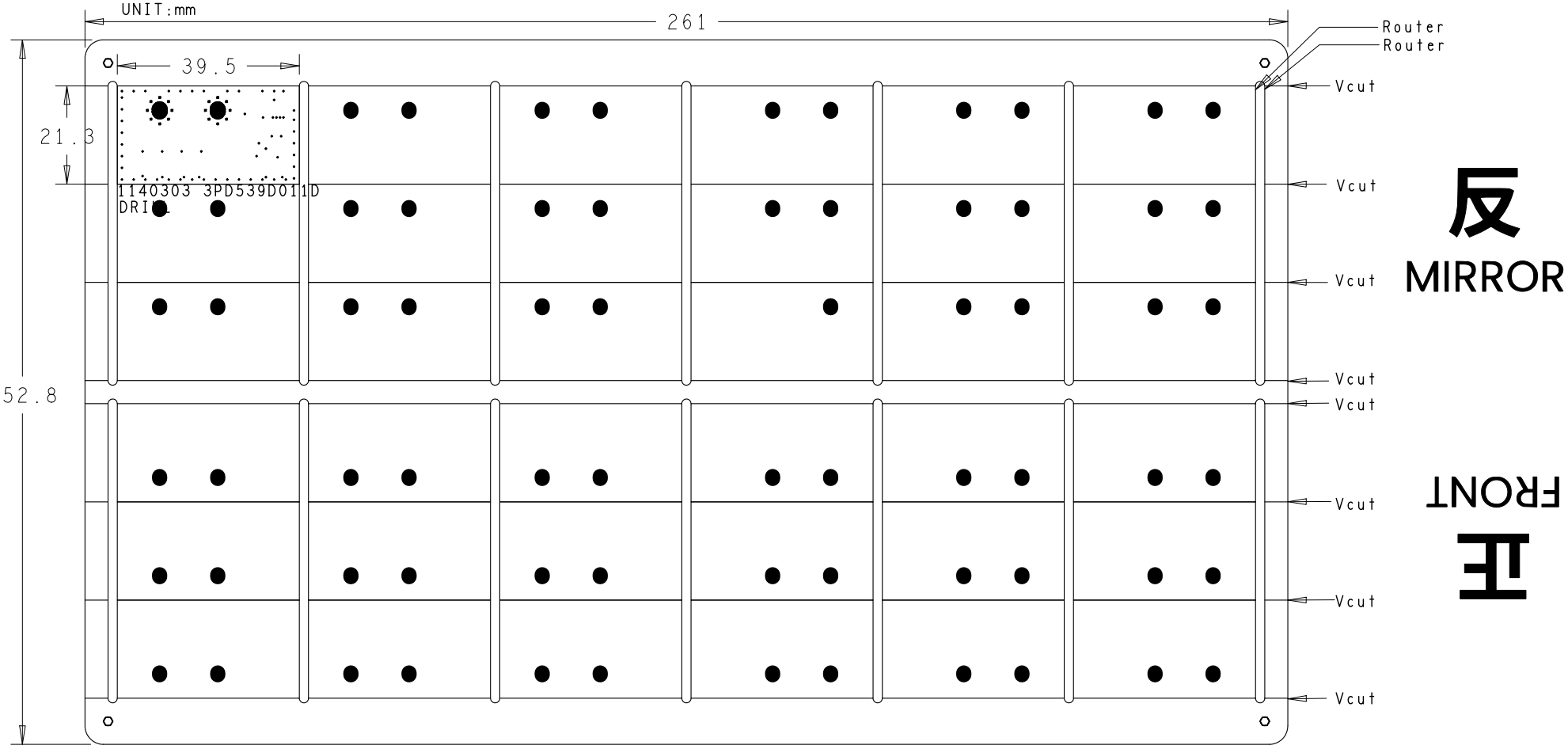
Printing information

| | | | |
|---|---|---|---|
| DIVA | Layer:NCDRILL_LEGEND | Part No.:4H.6HT26.S02 | |
| | Filename:LED BD | Date:03-03-25 | Rev.:1 |
| | Model No.:RGT2422AMII | Sheet 7 of 9 | |
| | Doc. No.: 9J.6HT5P.000-Q30-305-002 | | |

| Layer | Side |
|---|---|
| L1 | Top |
| L2 | Bottom |
| L3 | |
| L4 | |
| L5 | |
| L6 | |
| L7 | |
| L8 | |
| L9 | |
| L10 | |

| | | |
|---|---|---|
| CTI value:XXXXXX | Tg:Normal TG | |
| Material(LAM) | FR-4 | |
| Thickness | 1.6 mm | |
| PCS(W*L) | 21.3 X 39.5 mm | |
| PNL(W*L) | 152.8X261mm+-0.127mm | |
| PCB Utility Rate | XX.XX % | |
| Impedance control | XXX ohm | |
| Surface Finishes | ENIG | |
| PCS/PNL | 36 / 1 | |
| V-Cut: x8 | Router: x14 | |
| SXX Printing | Top White | Bottom White |
| AXX Printing | Top White | Bottom White |
| JR Q’ty | JRxx/xxx | |
| JW Q’ty | JWxx/xxx | |
| Other | N/A | |

| DRILL CHART: TOP to BOTTOM | | | |
|---|---|---|---|
| ALL UNITS ARE IN MILS | | | |
| FIGURE | FINISHED_SIZE | PLATED | QTY |
| · | 10.0 | PLATED | 64 |
| · | 12.0 | PLATED | 16 |
| ○ | 79.0 | NON-PLATED | 4 |
| ◎A | 142.0x126.0 | PLATED | 2 |




CAM350 PRO V 7.5.1 : Tue Mar 11 10:27:40 2025 - (Untitled)

# Sample Acknowledgement
# 样 品 承 认 书

| | | | |
|---|---|---|---|
| Customer (顾客名称) | **鈺緯科技 DIVA** | Customer P/N (顾客料号) | 3PD539D011D (P0279) |
| KCTC P/N (华新料号) | 2165AUTA0 | Sample QTY. (样板数量) | 3SET |
| INSP. Date (检查日期) | 2025-3-11 | Acknowledgement Date (确认日期) | 2025-3-11 |

| Customer Acknowledgement Result (客户确认结果) | | | |
|---|---|---|---|
| ☐ PASS (合格 ) ☐ REJ (不合格) ☐Rework Sample (再做样) ☐Requst Corrective , See Remark (需改善, 见备注)。 | | | |
| Should Requst Corrective the items when batch produce (批量生产时应改善事项): | | | |
| Remark (备注): | | | |
| Approved by (批准) | | Date (日期) | |

| | Inspection by (检查) | Verified by (审核) | Approved by (批准) |
|---|---|---|---|
| 签名 (Signature) | 沈宇飞 | 柯敏 | 王平 |
| 日期 (Date) | 2025-3-11 | 2025-3-11 | 2025-3-11 |

# 昆 山 市 华 新 线 路 板 有 限 公 司

KUNSHAN CHINA THRIVE CIRCUIT BOARD CO LTD

| 技术数据 TECHNICAL DATA（BOM） | | | |
|---|---|---|---|
| 1 | 产品品种 product type | | 双面板/多层板 |
| 2 | 基板材料 base material | | FR-4 |
| 3 | 成品尺寸 finished board size | | |
| | 最大成品板尺寸 S/S MAX | | 261×152.8 mm |
| 4 | 成品孔径直径 finished hold dia | | |
| | 最小圆孔直径 min hold dia | | 0.30 mm |
| | 最小异型孔宽度 min abmormity hold dia | | 3.20 mm |
| 5 | 导线宽度和导线间距 conductor width & space | | |
| | 最小导线宽度 min.width | | 0.508 mm |
| | 最小导线间距 min.space | | 0.254 mm |
| 6 | 阻焊油墨种类 solder mask options | | |
| | 丝印光固油墨 | | NA |
| | photic cure solder mask | | 海田 |
| | 颜色 colour | | 哑光黑色 |
| 7 | 文字印刷 legend printing | | |
| | 文字印刷颜色 legend printing colour | | 白色 |
| | 字符最小宽度 min.legend width | | 0.127 mm |
| 8 | 表面处理 surface treatment | | 化学镍金 |
| | 镍厚≥2.54UM;金厚≥0.05UM | | 镍厚 2.55UM;金厚 0.055UM |
| 9 | 电检测 electronic testing | | |
| | 测试方法 method | | 双面测试 |
| | 最大可测试尺寸 max.testing panel size | | 450×380 mm |
| 10 | V 形槽 “V” CUT | | |
| | 深度误差 depth tolerance | | ±0.08 mm |
| | 定位槽精度 positioning tolerance | | ±0.127 mm |
| 11 | 外形加工公差 profile tolerance | | ±0.127 mm |
| 12 | 翘曲度 D/S and ML warp | | < 0.55% |
| 13 | 光绘 laser photoop lotter system | | |
| | 最大绘图面积 max.plot.area | | 660×508 mm |
| | 精度 accruacy | | 8000×4000 |
| | 重复精度 repeatability | | 0.0127 mm |
| 14 | 绝缘电阻 insulation resistance | | $1\times10^{10}$ |
| 15 | 抗剥强度 peel strebgth | | > 1.4N/MM |
| 16 | 阻焊剂硬度 solder mask abrasion | | > 5H |
| 17 | 耐热冲击 thermal strength | | 288℃±5℃ 10sec |
| 18 | 可燃性 falmmability | | 94V-0 |
| 19 | 通断测试电压 E-test voltage | | 150V~250V |
| | | | |

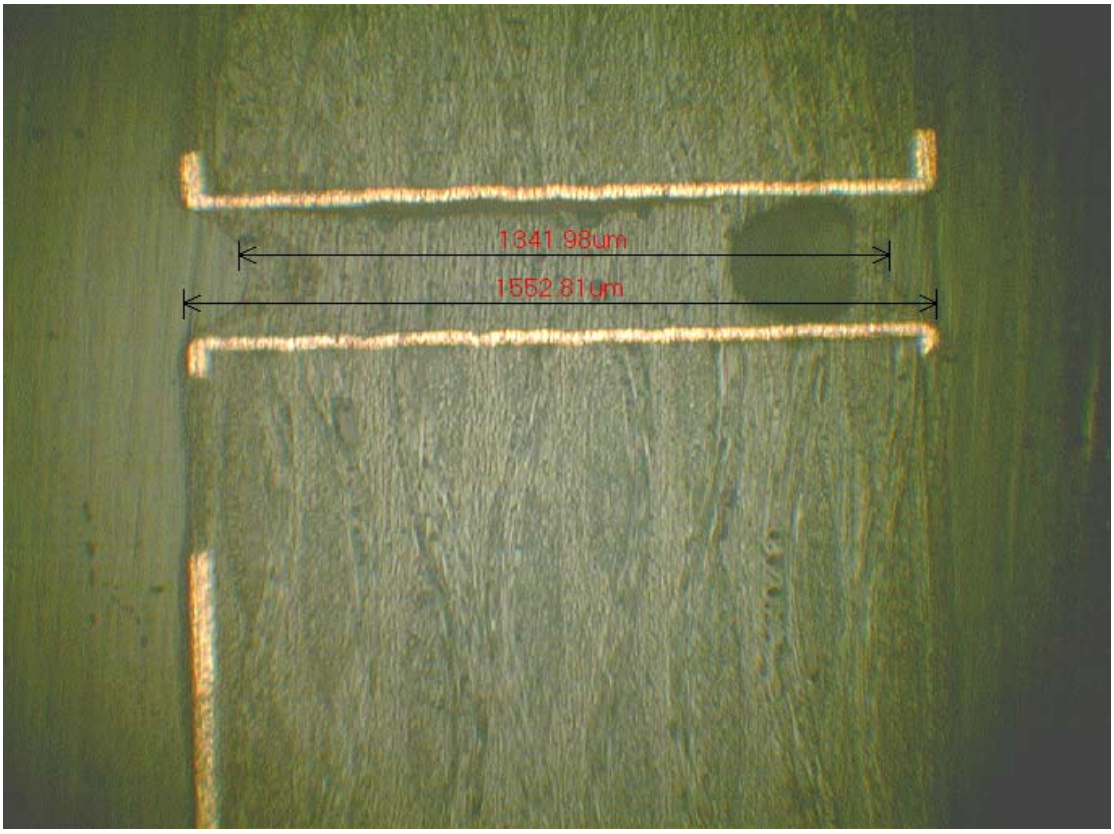
# 昆山市华新电路板有限公司

# 塞孔切片报告

PROD　　P/N：　2165AUTA0　　DATE　CODE：　25 10

CUSTOMER P/N: 3PD539D011D（P0279）　SAMPLE SIZE：　1PCS

CUSTOMER：　鈺緯科技 DIVA　　塞孔饱满度：　86%



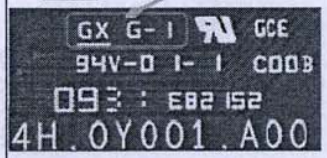

Disposition:　　Acc■　　Rej □

测试员：　沈宇飞　　审核：　王平

# Qisda Display Product's PCB General Rule

| No. | Final Surface Finish | Spec. | Checking Area | Vendor Check |
|---|---|---|---|---|
| A-1 | Sn/Ag/Cu (Sn/Cu) Thickness(HASL) | 120 μ" ~ 600 μ" | BGA / SMD IC Pad | OK |
| A-2 | Electroless Nickel /Immersion Gold Thickness ( If no specified ) | Au : 2 ~ 6 μ" / Ni : >110 μ" | BGA / SMD IC Pad | OK |
| A-3 | OSP Thickness | 0.25 ~ 0.45 μm (Ref. Page 8/9 , H01/H02) | PCB trace / pad | OK |
| A-4 | Immersion Silver Thickness | 6.5 ~ 16μ" (Ref. Page 8/9, H03/H04) | BGA / SMD IC Pad | OK |
| A-5 | Immersion Tin Thickness | ≧35 μ" | BGA / SMD IC Pad | OK |
| A-6 | Plated Gold Thickness | Au : ≧30 μ" / Ni : > 110 μ" | Gold Finger | OK |
| A-7 | Conductor Width / Pad / Spacing Tolerance ( Spec. > 10 mil. ) | ± 15 % ( If No Specified ) | Conductor / Pad | OK |
| A-8 | Conductor Width / Pad / Spacing Tolerance ( Spec. ≦ 10 mil. ) | ± 10 % ( If No Specified ) | Conductor / Pad | OK |
| A-9 | Connector wing pad 間距 tolerance | ≦ 10 % ( If No Specified ) | Wing pad 間距 | OK |
| A-10 | Holes Registration ---- PTH hole (Minimum annular ring ) | ≧ 6 mil ( If No Specified ) | PTH | OK |
| A-11 | Holes Registration ---- Via hole (Minimum annular ring ) | > 1 mil ( If No Specified ) | Via | OK |
| A-12 | Hole Roughness | ≦ 0.75 mil.( If no specified ) | BGA via /Via/PTH | OK |
| A-13 | Wicking | < 4.0 mil | Hole / PTH | OK |
| A-14 | Hole Diameter Tolerance (If no specified ) | PTH : ± 3 mil. , Un-plated : ± 2 mil. | PTH / BGA via | OK |
| A-15 | Internal Layer Foil ( If no specified ) | 1 OZ | PTH / BGA via | OK |
| A-16 | External Layer Foil ( If no specified ) | 0.5 OZ | PTH / BGA via | OK |
| A-17 | Cleanliness ( Ionic contamination ) | < 6.0 μg NaCl / inch²; (HASL ≦9.0μg NaCl / inch²) | PCB | OK |
| A-18 | Adding radius of finished board 4 corners. | R x 79 mil ( R x 2 mm ) | Panel's corners | OK |
| A-19 | 材料方向 | Core 需與 PP 同一方向 | PCB | OK |
| A-20 | PCB outline dimension tolerance | ± 0.127 mm | Outline | OK |

| No. | Final Surface Finish | Spec. | Checking Area | Vendor Check |
|---|---|---|---|---|
| B-1 | Solder Mask color | 1. GP Halogen free PCB : 藍色<br>2. The others : 綠色 (If gerber file no specified) | Solder mask | Ok |
| B-2 | Solder Mask Coating Thickness ( If no specified ) | 1. Min. 0.46 mil, & Min. > 0.15 mil at the edge of trace.<br>2. 不得有漏銅/假性漏銅現象 | Conductor / Trace | Ok |
| B-3 | BGA & Non BGA via | 除非Gerber file 防焊層開口定義有指定該via禁止綠漆塞孔外（如噴錫孔, 電測用孔—），所有Via Holes 需兩面塞綠漆(不得假性露銅/不能具有錫蝕性) | Via | Ok |
| B-4 | Solder resist coverage | 不容許綠漆/文字/標示漆沾附於孔環及 Pad 上，及禁止侵犯流入或殘留於 PTH 孔壁處 | Pad / PTH | Ok |
| B-5 | V-Cut Thickness --- Support ( If no specified ) | 1/3 板厚±0.08 mm( 板厚≧1.6 mm);<br>0.45 mm ±0.08 mm( 板厚<1.6 mm) | Support | Ok |
| B-6 | V-Cut Angle | 30°, 45° ( If No Specified ) | V Cut | Ok |
| B-7 | Gold Finger Beveling Angle ( Θ) | 30 ± 2° ( If No Specified ) | Gold Finger | Ok |
| B-8 | Finish Board Thickness Tolerance | ±9 % ( If no specified ) | PCB thickness | Ok |
| B-9 | Dielectric Thickness | > 3.5 mil ( If no specified ) | Dielectric | Ok |
| B-10 | 焊錫面零件腳位置如有特別之標示如套加白漆圓圈 | 標示之白漆圓圈內經與零件 Pad 防焊漆外緣之間隙 ≧ 0.3mm<br>(線材位置不適用) | Component Pad | Ok |
| B-11 | Copper Purity<br>Elongation and Tensile Strength<br>( If no specified ) | Purity > 99.5% pure,<br>Tensile strength > 36,000 PSI [248 MPa],<br>Elongation > 12%. | PTH | Ok |

| No. | Final Surface Finish | Spec. | Checking Area | Vendor Check |
|---|---|---|---|---|
| B-12 | 客戶或本公司 Logo Marking | 除非 Gerber 有明列,否則禁止加入 | PCB Marking | ok |
| B-13 | The other Marking<br><br>(如果 PCB gerber file 上對本項目有定義, 請 PCB 廠遵循該 gerber 上之定義，如其未做明確定義，則遵循本規定) | 1. 需 Marking Date Code<br>2. 需 Marking PCB 耐燃等級(如94V-0)<br>3. 需 Marking PCB 製造廠 Brand/Logo<br>4. 需 Marking 本公司 PCB 料號<br>5. 需 Marking UL 安規標記(如圖 1 所示)及其號碼 (如 EXXXXXX)<br>6. 需 Marking UL Type designation 標記(如圖 4 所示)<br> 圖 1  圖 2<br>7. 需 Marking e1 標記( 如圖 2 所示 )<br>8. 如為 Halogen free 無鹵素板材, 需 Marking "HF" 標記 (如圖 3 所示)<br> 圖 3<br>圖4 (UL type designation)<br><br>以上之標示/標記禁止印刷於廢材上 | PCB Marking | ok |

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| No. | Final Surface Finish | Spec. | Checking Area | Vendor Check |
|---|---|---|---|---|
| C-1 | Gold Finger Board Edge | IPC -A- 600G Class-II (if No Specified) | Board Edge | ok |
| C-2 | Gold Finger Surface | IPC -A- 600G Class-II (if No Specified) | Contact Finger | |
| C-3 | Base Material Surface / Surface Plating | IPC -A- 600G Class-II (if No Specified) | Board Surface | |
| C-4 | Holes Plated Through | IPC -A- 600G Class-II (if No Specified) | Hole / PTH | |
| C-5 | Conductive Patterns ( Definition/Dimensional ) | IPC -A- 600G Class-II (if No Specified) | Conductor / Trace | |
| C-6 | Dielectric Material | IPC -A- 600G Class-II (if No Specified) | Dielectric | |
| C-7 | Conductors / Traces / Pads / Lands / Ground / Voltage Planes | IPC -A- 600G Class-II (if No Specified) | Conductor / Pad | |
| C-8 | Solder Mask Surface | IPC -A- 600G Class-II (if No Specified) | PCB Surface | |
| C-9 | Marking / Legend | IPC -A- 600G Class-II (if No Specified) | PCB | |

| No. | Copper Foil | Internal layer foil thickness | External conductor thickness | PTH copper thickness , [mil ] | | Blind vias thickness copper, ( mil ) | | Buried vias thickness, copper ( mil ) | | Vendor Check |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Min. | Avg. | Min. | Avg. | Min. | Avg. | |
| D-1 | 3/8 OZ | > 0.33 mil | > 1.0 mil | > 0.80 | ≧ 0.90 | > 0.45 | > 0.55 | > 0.65 | > 0.75 | ok |
| D-2 | 1/2 OZ | > 0.49 mil | > 1.40 mil | | | | | | | |
| D-3 | 1.0 OZ | > 0.98 mil | > 1.80 mil | | | | | | | |
| D-4 | 2.0 OZ | > 2.35 mil | > 3.15 mil | | | | | | | |
| D-5 | Final finish board open test | | ≦ 50Ω ( If no specified ) | | Final finish board short test | | | > 10MΩ ( If no specified ) | | |

| No. | Raw material requirement for Pb-free ( Laminate/ Prepreg ) | | Vendor Check |
|---|---|---|---|
| E-1 | Normal Tg( If No Specified ) | Tg > 140 , Td > 310 ℃ , T260 > 30 min , T288 > 5 min | ok |
| E-2 | Mid Tg ( If No Specified ) | Tg > 150 , Td > 335 ℃ , T260 > 40 min , T288 > 10 min | |
| E-3 | Hi Tg ( If No Specified ) | Tg > 170 , Td > 350 ℃ , T260 > 50 min , T288 > 20 min | ok |

| No. | Base material | PCB Laminate/Prepreg / Ink / Paint spec. for Halogen free | | | | | | | | Vendor Check |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Tg (℃) | Td (℃) | T260 (min.) | T288 (min.) | T300 (min.) | Chlorine (dppm) | Bromine (dppm) | Chlorine + Bromine (dppm) | ok |
| E-4 | Normal Tg FR4 Halogen free | > 140 | > 335 | > 35 | > 10 | - | < 900 | < 900 | < 1500 | ok |
| E-5 | Mid Tg FR4 Halogen free | > 150 | > 340 | > 40 | > 15 | - | < 900 | < 900 | < 1500 | ok |
| E-6 | Halogen free Ink /Solder resist | - | - | - | - | - | < 900 | < 900 | < 1500 | ok |
| E-7 | Halogen free Paint | - | - | - | - | - | < 900 | < 900 | < 1500 | ok |
| E-8 | PCB finish board (Halogen free Normal Tg) | > 140 | > 335 | > 35 | > 10 | - | < 900 | < 900 | < 1500 | ok |
| E-9 | PCB finish board (Halogen free Mid Tg) | > 150 | > 340 | > 40 | > 15 | - | < 900 | < 900 | < 1500 | ok |

| PCB Reliability test items by PCB vendor | |
|---|---|
| Must | Item F1, F2, F3, F4, F5, F6, , G2, G3, G4, G5, G8, G10, G11 |
| TBD | Item G1, G2, G5, G6, G7, G9, G10 |

ok

| No. | Item | Test Method | Spec. | Test Freq. | Sampling Size | vendor check |
|---|---|---|---|---|---|---|
| F-1 | S/M Adhesion | IPC-TM-650 2.4.28.1 | No Peel Off , No Flaking | Per D/C Lot ( If No Specified ) | Per D/C Lot x 1 pcs. ( If No Specified ) | OK |
| F-2 | Bow And Twist | IPC-TM-650 2.4.22 | Twist : < 0.50 %<br>Bow : < 0.50 %<br>"量測方式請參考 Page 9/9" | | | |
| F-3 | Surface Plating Adhesion | IPC-TM-650 2.4.1 | No Peel Off , No Flaking | | | |
| F-4 | Thermal Stress (Float Solder) | IPC-TM-650 , 2.6.8.<br>288 ℃ x 10 Sec. -->20 ℃ x 10 Min. -->x 4 Cycles | 1. Resistance change < 10 %<br>2. No Plating Crack / Break<br>No voids , No Delamination<br>No Separation ,No blistering<br>No Measling , | | | |
| F-5 | Outline dimension | | Follow Gerber | | | |
| F-6 | Impedance Control ( If No Specified ) | IPC-TM-650 2.5.5.7. | Characteristic impedance ± 8 %<br>Differential impedance ± 10 % | | 100 % | |

| No. | Item | Test Method | Spec. | Test Freq. | Sampling Size | vendor check |
|---|---|---|---|---|---|---|
| G-1 | Dielectric Withstanding Voltage | IPC-TM-650 2.5.7. DC : 500 +15 / -0 V . 30 sec | No Leakage / Sparkling . No Breakdown Between Test Layer | 1. 次/半年<br>2. F.A.I. Of new Model ( If No Specified ) | 1片 / Model ( If No Specified ) | ok |
| G-2 | Volume Resistivity | IPC-TM-650 2.5.17 C/96/35/90 | >1.0 x $10^{13}$ Ω-cm | | | |
| G-3 | Peel Strength | IPC-TM-650 2.4.8 | 0.5 OZ > 6 lb / inch . 1.0 OZ > 8 lb / inch . 2.0 OZ > 10 lb / inch | | | |
| G-4 | Bonding Strength | IPC-TM-650 2.4.21 | > 500 lb / inch² | | | |
| G-5 | 玻璃轉換溫度 | IPC – TM-650 2.4.24 | Tg ≧ Spec. , △ Tg ≦ 4℃ | | | |
| G-6 | Porosity Of Gold Plating | IPC-TM-650 , 2.3.24 70% HNO3 Vapor x 30 Min. | < 8 defects / cm² ( By x 15 ~ 20 Scope ) | | | |
| G-7 | Rework Simulation | IPC-TM-650 2.4.36 | No Delaminating / Separation , No Land Lifting | | | |
| G-8 | Surface Resistivity | IPC-TM-650 2.5.17 C/96/35/90 | >1.0 x $10^{10}$ Ω | | | |
| G-9 | Electro -migration | Bellcore GR-78-core 13.2.7 : 85℃@ 85%RH , x 500hrs @ 50V bias , Test voltage : 100VDC | 1. Bellcore GR-78-Core 13.2.7 2. Option inspection(30X) should no evidence of whisker growth | | | |
| G-10 | Thermal Shock | IPC-TM-650 2.6.7.2 -65 ℃x 30 Min. ---> 125 ℃x 30 Min. ---> ( > 500 cycles ) 溫度變化須於 2分鐘內完成 | 1. Resistance change < 10 % 2. No Plating Crack / Break No voids , No Delaminating No Separation .No blistering No Measling , | | | |
| G-11 | Ionic contamination | IPC-TM-650 2.3.25 Test liquid > 45 M Ω, x 15 Mn. | < 6.0 µg NaCl / inch² , (HASL ≦ 9.0µg NaCl / inch²) | 1. 次/季<br>2. FAI of new model | | |

| NO. | OSP chemical solution type for PCB surface finish | | | Vendor Check |
|---|---|---|---|---|
| | OSP chemical solution supplier | OSP chemical solution type | OSP thickness | |
| H01 | Shikoku Chemicals Corp. | Glicoat - SMD(F2) / SMDF2(LX) / SMD(F2)-Plus | 0.25 μm ~ 0.40 μm | ok |
| H02 | Cookson Electronics ( Enthone Inc. ) | Entek Plus CU – 106 HT / Entek Plus CU - 106A(X)HT | 0.30 μm ~ 0.45 μm | |

| NO. | Immersion Ag chemical solution type for PCB surface finish | | | Vendor Check |
|---|---|---|---|---|
| | **Imm Ag chemical solution supplier** | **Imm Ag chemical solution type** | **Imm Ag thickness** | |
| H03 | Mac Dermid | Sterling™ Silver (75097# , 75098#) | 10~ 16 μ" (1.5 x1.5 /2 x 2 mm pad ) 6.5 ~8 μ" ( 5 x 5 mm 以上 pads ) | ok |
| H04 | Cookson Electronics ( Enthone Inc. ) | Alpha STAR # | 10~ 14 μ" (1.5 x 1.5 / 2 x 2 mm pad ) 6 ~ 8 μ" ( 5 x 5 mm 以上 pads ) | |

* PCB must be packaged by vacuum within 12 hrs while OSP/Imm Ag is finished

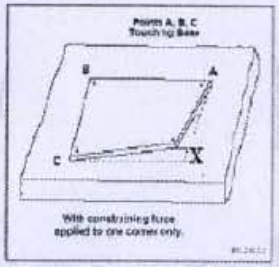
** PCB 於 HASL / OSP / Imm Ag Process 最多只能進行二次（含重工）

| No. | Solderability test ( Insp. In per D/C Lot x 2 pcs.) | | | Vendor Check |
|---|---|---|---|---|
| | Product type | Test Method | Spec. | |
| I-01 | Pb-free | Reflow x 2 times ( Peak temp. Avg. > 245 ℃, above 217 ℃ time Avg . > 50 sec. ) -----> Wave soldering( 250 ~ 255 ℃ x 2.2~2.6 sec. ) | 1. Wetting > 100 %<br>2. All PTH Solder fill up x 100 % | ok |

*** The composition of Pb-free solder alloy to be used in test shall be : Sn-Ag-Cu (SAC305)**

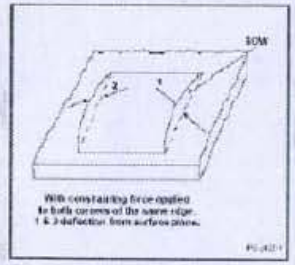
*** The fux for solderability test shall be a standard activated rosin flux (Type ROL1)**

| PCB 出貨之檢驗項目即應附之檢驗及量測報告 | | | | | | | | | Vendor Check |
|---|---|---|---|---|---|---|---|---|---|
| 01 | Internal Layer Foil Thickness | 04A | Sn Thickness(HASL) | 04C | ENIG Thickness | | | | OK |
| 02 | External Conductor Thickness | 04C | Plated Gold Thickness | 04D | Immersion Tin Thickness | | | | |
| 03 | PTH Copper Thickness ( BGA via /via) | 04E | OSP Thickness | 04F | Immersion Silver Thickness | | | | |
| 05 | Solder Mask Coating Thickness | 06 | Conductor Width / Spacing Tolerance | | | | | | |
| 07 | Finish Board Thickness Tolerance | 08 | Hole Roughness (Via / PTH) | | | 09 | Wicking | | |
| 10 | Thermal Stress | 11 | Solderability | 12 | S/M Adhesion | 13 | Bow And Twist | | |
| | | | | | | | | | |




**Measuring method of PCB Twist**

X : < $\overline{AC}$ (PCB/Panel 對角線長) x 0.5 %




**Measuring method of PCB Bow**

1 + 2 : < (PCB/Panel 邊線長) x 0.5 %

Check By 吳文霞

Approval By 郭官生