



# 检验检测报告

## Testing Report

报告编号：SH2210140056A

试验名称：闷锁试验

试验样品：LKS32MC071

试验部门：失效分析工程处

苏试宜特（上海）检测技术股份有限公司  
Chinaisti (Shanghai) Testing Technology Co., Ltd.

地址：上海市浦东新区金丰路 455 号 2 号厂区

# 开锁试验报告

## Latch UP TEST REPORT

委托公司 : 南京凌鸥创芯电子有限公司  
Company  
公司地址 : 南京市栖霞区兴智路 6 号 兴智科技园 B 座 15 楼  
Address  
产品名称 : LKS32MC071  
Sample name LKS32MC071  
委托日期 : 2022 年 10 月 14 日  
Date Received Oct 14,2022  
完成日期 : 2022 年 10 月 17 日  
Date Tested Oct 17,2022

### 实验室认证体系 (Independent Testing Laboratory Certification System) :

本实验室为国家认可的检测实验室, 检测管理及技术均符合 CNAS-CL01: 2018 《检测和校准实验室能力认可准则》、CNAS-CL01-A003: 2019 《检测和校准实验室能力认可准则在电气检测领域的应用说明》

认可单位:中国合格评定国家认可委员会(CNAS) 认可证书号:L15758

CHINAISTI (SHANGHAI) TESTING TECHNOLOGY CO.,LTD is a CNAS-CL01: 2018,CNAS-CL01-A003: 2019 approved testing laboratory, certified by China National Accreditation Service for Conformity Assessment(CNAS).  
Certification Number: L15758

### 实验室证明事项 (We Hereby Certify That) :

对于本报告所载之测试项目及结果, 实验室保证由训练合格之专业技术人员负责执行, 并忠实及完整将各项试验结果记录于报告内。

The test(s) shown in the attachment were conducted according to the indicating procedures. We assume full responsibility for the accuracy and completeness of these tests and vouch for the qualifications of all personnel performing them.

|                          | 名称 (Name)         | 签名 (Signature) | 日期 (Date)        |
|--------------------------|-------------------|----------------|------------------|
| 检测员<br>Inspector         | 潘祥仁<br>Peter Pan  | 潘祥仁            | 2022 年 10 月 17 日 |
| 报告审核人<br>Report reviewer | 陈清珑<br>Larry Chen | 陈清珑            | 2022 年 10 月 18 日 |
| 报告批准人<br>Approver        | 李鹏云<br>Smile Li   | 李鹏云            | 2022 年 10 月 19 日 |

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2. 本报告仅对检送样品负责, 且分离使用无效。

This report refers only to the specimen(s) submitted to test, and is invalid if used otherwise.

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3. 本报告需加盖本公司印鉴及签名始生效。

This report is ONLY valid with the examination seal and signature of this institute.

4. 样品保存自报告签发日起 30 天。

The tested specimen(s) will only be preserved for thirty days from the date issued, if not collected by the applicant

# 报 告 内 容

## TABLE OF CONTENTS

|   |          |
|---|----------|
| <b>1 讯息 (INFORMATION)</b> .....                         | <b>2</b> |
| <b>1.1 案件讯息 (CASE INFORMATION)</b> .....                | <b>2</b> |
| <b>1.2 试验设备说明 (DESCRIPTION OF TEST EQUIPMENT)</b> ..... | <b>2</b> |
| <b>1.3 环境条件 (AMBIENCE CONDITION)</b> .....              | <b>2</b> |
| <b>1.4 参考文件 (REFERENCE DOCUMENT)</b> .....              | <b>2</b> |
| <b>1.5 测试要求 (TEST REQUIREMENT)</b> .....                | <b>2</b> |
| <b>2 试验结果 (TEST RESULTS)</b> .....                      | <b>3</b> |
| <b>2.1 结果汇整 (SUMMARY)</b> .....                         | <b>3</b> |
| <b>2.2 测试数据 (TEST DATA)</b> .....                       | <b>4</b> |

## 1 讯息 (INFORMATION)

### 1.1 案件讯息 (CASE INFORMATION)

| 试验样品<br>Test Sample | 批次号<br>LOT NO. | 封装<br>Package | 数量<br>Quantity |
|---------------------|----------------|---------------|----------------|
| LKS32MC071          | NA             | QFP48         | 3 pcs          |

### 1.2 试验设备说明 (DESCRIPTION OF TEST EQUIPMENT)

| 项目<br>Items | 设备/编号<br>Equipment/No. | 型号<br>Model              | 校准有效期<br>Calibration validity |
|-------------|------------------------|--------------------------|-------------------------------|
| 1           | 1603206                | KEYTEK ZAPMASTER MK2 768 | 2023年6月22日                    |

### 1.3 环境条件 (AMBIENCE CONDITION)

|  |                                  |                            |              |
|--|----------------------------------|----------------------------|--------------|
| 标准要求温度<br>Required temperature         | 25 <sub>5</sub> <sup>±3</sup> °C | 实际温度<br>Actual temperature | 22.3~22.9°C  |
| 标准要求相对湿度<br>Required relative humidity | 55± 10 %RH                       | 实际湿度<br>Actual humidity    | 51.0~56.2%RH |

### 1.4 参考文件 (REFERENCE DOCUMENT)

| 项目<br>Items | 依据标准<br>Standards |
|-------------|-------------------|
| 1           | JESD78F : 2022    |

### 1.5 测试要求 (TEST REQUIREMENT)

|                            |   |
|----------------------------|---|
| TRIGGER CURRENT            | : 50mA~200mA; STEP:50mA(±);   |
| V SUPPLY OVER VOLTAGE TEST | : 5.5V~7.0V,STEP:1.0V(+)  |
| PULSE DURATION             | : 10 ms   |
| TEST TEMPERATURE           | : ROOM TEMPERATURE  |
| SAMPLE QUANTITY            | : 3 pcs   |
| FAILURE CRITERIA           | : If absolute Inom is < 25 mA, then absolute Inom + 10mA is used; Or<br>If absolute Inom is > 25 mA, then > 1.4X absolute Inom is used; |

## 2 试验结果 (TEST RESULTS)

### 2.1 结果汇总 (SUMMARY)

| Trigger Mode                          | Test Pin | Sample Quantity | Tested Result | V or I Limits | JESD78F: 2022<br>I Trigger : Class <u>IA</u>  |
|---------------------------------------|----------|-----------------|---------------|---------------|---|
| I Trigger (+)                         | IO5V     | 3               | PASS +200mA   | +7V           | Temperature Classification:<br>CLASS I<br>For Latch-up test at room temperature<br>Class I A :<br>Positive I-Test : $\geq 100\text{mA}$<br>Negative I-Test : $\geq 100\text{mA}$<br>Overvoltage Test : 1.5 x VDD or MSV,<br>whichever is less<br>Class I B :<br>If immunity level A cannot be achieved<br><br>CLASS II<br>For Latch-up test at maximum-rate<br>ambient temperature<br>Class IIA :<br>Positive I-Test : $\geq 100\text{mA}$<br>Negative I-Test : $\geq 100\text{mA}$<br>Overvoltage Test : 1.5 x VDD or MSV,<br>whichever is less<br>Class IIB :<br>If immunity level A cannot be achieved |
| I Trigger (-)                         | IO5V     |                 | PASS -200mA   | -2V           |   |
| Over Volt Test<br>V <sub>supply</sub> | VDD5.0V  |                 | PASS +7.0V    | +600mA        |   |

| Group | Pin List |
|-------|----------|
| VDD   | 4        |
| IO5V  | 1-2,6-48 |
| GND   | 3        |

## 2.2 测试数据 (TEST DATA)

| I Trigger (Positive) |                                  |             |             |
|----------------------|----------------------------------|-------------|-------------|
| Tested Pin           | Sample No. & Failed current (mA) |             |             |
|                      | #L1                              | #L2         | #L3         |
| 1                    | PASS +200mA                      | PASS +200mA | PASS +200mA |
| 2                    | PASS +200mA                      | PASS +200mA | PASS +200mA |
| 6-48                 | PASS +200mA                      | PASS +200mA | PASS +200mA |

| I Trigger (Negative) |                                  |             |             |
|----------------------|----------------------------------|-------------|-------------|
| Tested Pin           | Sample No. & Failed current (mA) |             |             |
|                      | #L1                              | #L2         | #L3         |
| 1                    | PASS -200mA                      | PASS -200mA | PASS -200mA |
| 2                    | PASS -200mA                      | PASS -200mA | PASS -200mA |
| 6-48                 | PASS -200mA                      | PASS -200mA | PASS -200mA |

| Over Voltage Test for $V_{supply}$ |                              |            |            |
|------------------------------------|------------------------------|------------|------------|
| Tested Pin                         | Sample No. & Failed Volt (V) |            |            |
|                                    | #L1                          | #L2        | #L3        |
| 4                                  | PASS +7.0V                   | PASS +7.0V | PASS +7.0V |

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