

可靠性试验报告

Reliability Test Report

委托方	合肥聆思
Consigner	
产品型号	KBR98002
Part Number	
产品批号	NPS2149073N-01
Lot Number	
封装形式	QFN-14L-1.6X2.0X0.55-A_P0.4
Package type	
检验性质	转量产可靠性验证
Test Nature	
接样日期	2021/12/24
Receive Date	
检测日期	2021/12/27~2021/02/23
Test Duration	

编制:
Prepared by
日期:
Date

孙文燕

2022/03/15

审核:
Checked By
日期
Date

卢浩

2022/03/16

批准:
Approved By
日期
Date

郑静

2022/03/25

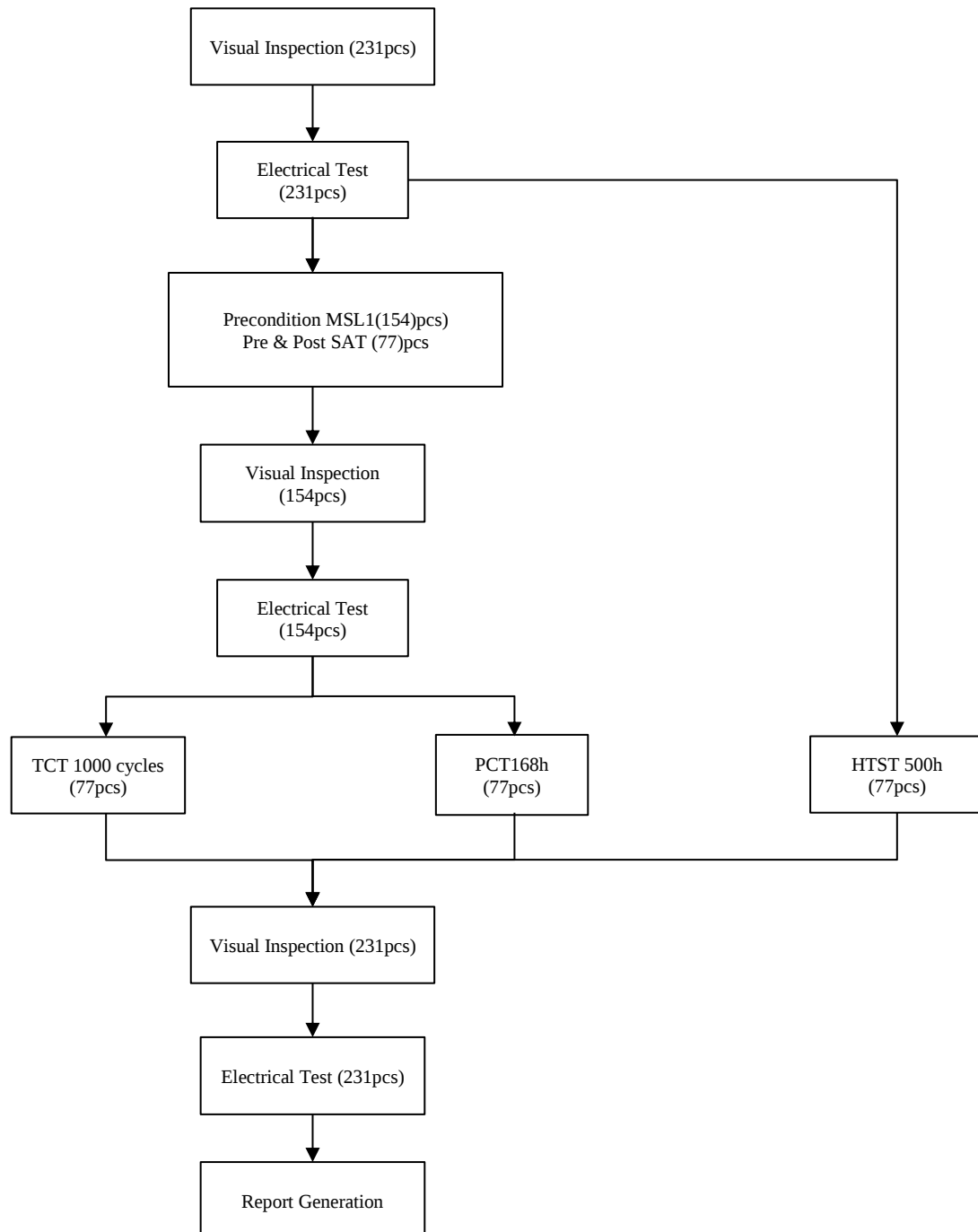


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试验流程图 Test Flow Figure



可靠性试验报告

Reliability Test Report

1. 目的 Purpose

KBR98002A转量产可靠性验证

Reliability verification for KBR98002 mass production

2. 可靠性试验 Reliability Test

2.1. 样品信息 sample Information

产品型号 Part Number	产品批号 Lot Number	封装形式 Package Type	试验数量 Sample Size
KBR98002	NPS2149073N-01	QFN-14L-1.6X2.0X0.55-A_P0.4	231

2.2. 材料信息 Material information

序号 NO	材料名称 Material name	信息 Information
1	引线框架 L/F	QFN-14L-1.6X2.0X0.55-A_P0.4
2	焊线 Wire	NA
3	料饼 Compound	CEL-9220HF13
4	粘胶 Bonding Material	NA
5	芯片型号 Chip Number	98002A
6	芯片尺寸 Chip Size	1680X1280um

2.3. 试验汇总 Test Summary

2.3.1 试验环境条件 Test environment conditions

温度Temp: 21.2℃~25.8℃

湿度Humi: 56.8%RH~62.1%RH

2.3.2 试验结果 Test Result

试验项目 Test Items	试验条件 Test condition	数量 S.S	判定 Acc/Re	SAT Result	外观 VI Result		电性测试 FT Result	
					Fail	Pass	Fail	Pass
Precondition MSL1	Bake: 125°C, 24h Soak:85°C, 85%RH,168h Reflow: 260°C, 3times	231	0/1	PASS	0	231	0	231
TCT	-65°C~150°C, soak mode3, 30min/cycle, 1000cycle	77	0/1	NA	0	77	0	77
PCT	121°C, 100%RH,168h	77	0/1	NA	0	77	0	77
HTST	150°C, 500h	77	0/1	NA	0	77	0	77

备注：电性测试结果由试验委托方提供结果并保证

Remark: Electrical test result was proved and guaranteed by consigner

2.4. 试验描述 Test Description

2.4.1. Precondition MSL1

◆ 试验方法 Test Method

JESD22-A113H-2016 Preconditioning of Nonhermetic Surface Mount Devices Prior to Reliability Testing

◆ 试验条件 Test Condition

Step 1: Bake => 125°C, 24h

Step 2: Soak=> 85°C/85%RH, 168h

Step 3: reflow => 260°C, 3 times

◆ 试验日期 Test Duration

2021.12.27 ~ 2022.01.04

2.4.2. TCT (TEMP. Cycles Test)

◆ 试验方法 Test Method

JESD22-A104E-2014Temperature Cycling

◆ 试验条件 Test Condition

-65°C ~ 150°C, soak mode 3,30min/cycle, 1000 cycles

◆ 试验日期 Test Duration

2022.01.25 ~ 2022.2.23

2.4.3. PCT (Accelerated Moisture Resistance - Unbiased Autoclave)

◆ 试验方法 Test Method

JESD22-A102D Accelerated Moisture Resistance - Unbiased Autoclave

◆ **试验条件 Test Condition**

121°C, 100%RH, 168h

◆ **试验日期 Test Duration**

2022.01.28 ~ 2022.02.04

2.4.4. HTST (High Temp. Storage Test)

◆ **试验方法 Test Method**

JESD22-A103E-2015 High Temperature Storage Life

◆ **试验条件 Test Condition**

150°C, 500h

◆ **试验日期 Test Duration**

2021.12.24 ~ 2022.01.14

3. 结论 Conclusion

- (1) KBR98002A 产品MSL1前后SAT扫描未发现明显异常（见附录一）；

There is no obvious abnormality by SAT before and after precondition MSL1;

- (2) KBR98002A 产品可靠性试验后FT测试Pass;

KBR98002A Product FT Test Pass after Reliability Test;

- (3) KBR98002A 产品易焊性试验爬锡面积大于95%，结果Pass（见附录二）。

The solder area of KBR98002A product is more than 95% in the solderability test, and the result is Pass (see Appendix two)

附录一：超声波检测报告

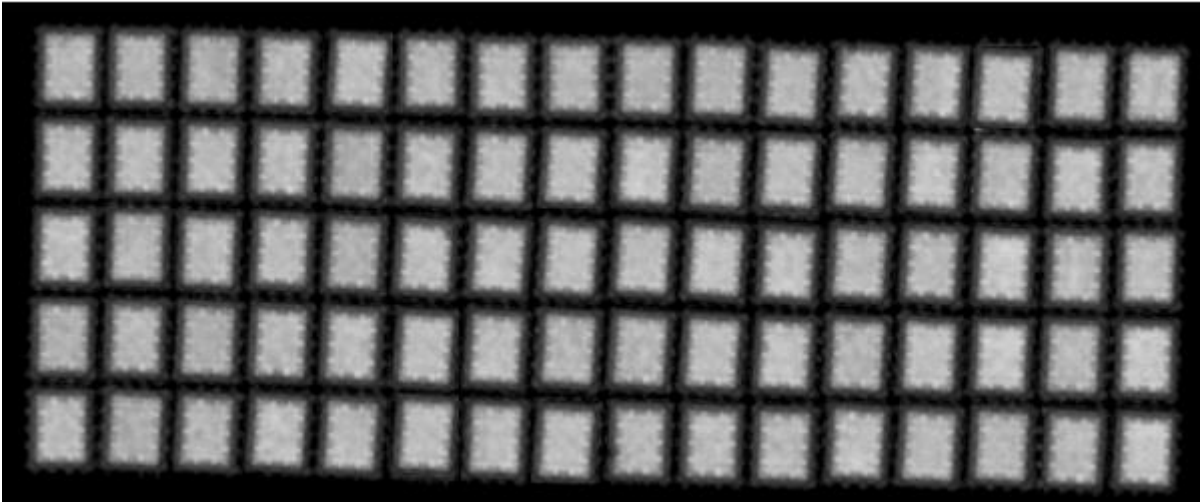
Appendix One: C-SAM Detection Report

1. 产品检测信息 Product & Inspection Information

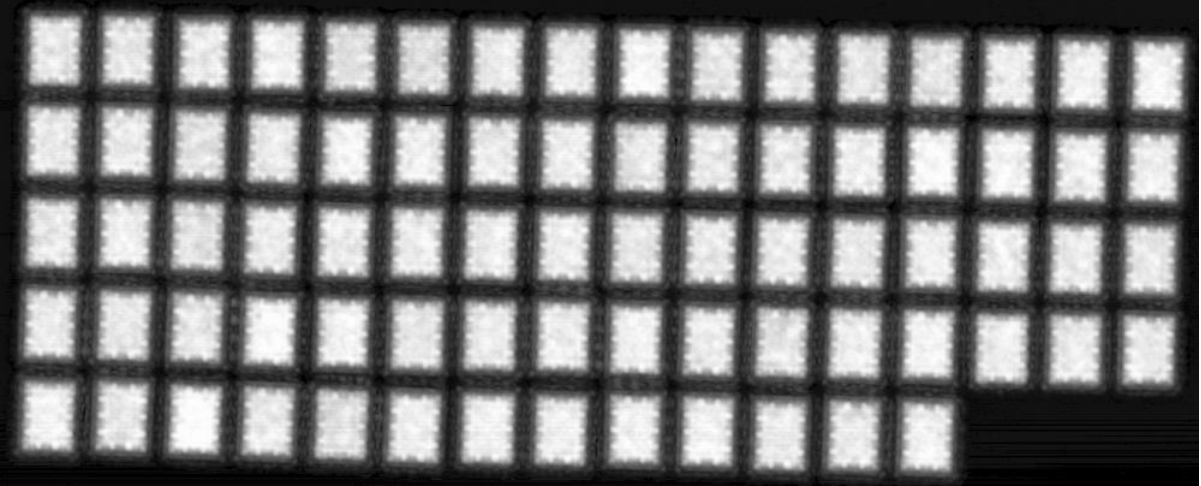
产品型号 Part Number	产品批号 Lot Number	封装形式 Package Type	试验数量 Sample Size
KBR98002	NPS2149073N-01	QFN-14L-1.6X2.0X0.55-A_P0.4	77
检测者 Detector	日期 Date	探头频率 Transducer frequency	—
孙文燕	12月28日	35MHz	

2. 扫描检测结果 Detection Description

2.1 预处理前超声波扫描图片 CSAM picture before precondition MSL1

C-Scan Picture	检测情况 Description
 	MSL1试验前SAT扫描未发现明显异常

2.2 预处理后超声波扫描图片 CSAM picture after precondition MSL1

C-Scan Picture	检测情况 Description
 	MSL1试验 后SAT扫描 未发现明显 异常

附录二：可焊性试验

Appendix Two: Solderability

◆ 试验方法 Test Method

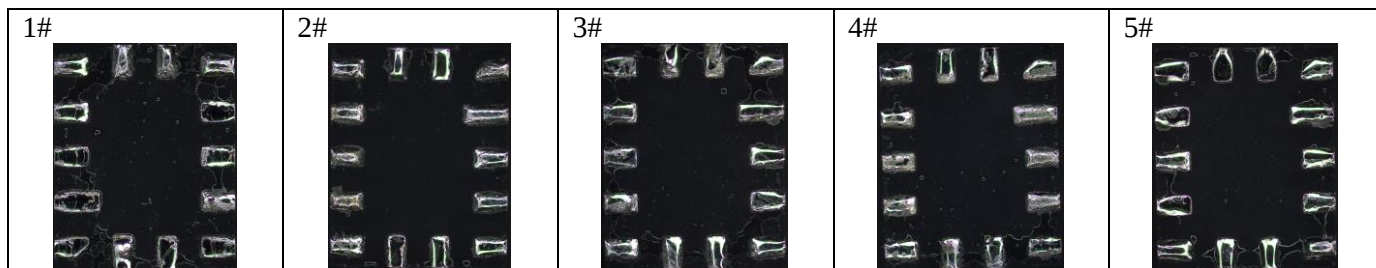
JEDEC J-STD-002E Solderability

◆ 试验条件 Test Condition

93°C, 100%RH, 8h

◆ 试验日期 Test Duration

2022.2.24 ~ 2022.2.25



附录三：试验/检测设备

Appendix Three: Test/Inspection Device

型号 Type	名称 Name	编号 No.
SPZT-50PFM	低倍体式显微镜Low magnification stereo microscope	NA
UYT-202	高温试验箱 Aging Tester	FA003
UH-225A	恒温恒湿试验箱 Temp. & Humi. Tester	FA002
SIK300	全热风回流焊 Reflow tester	2RF001
SONIX-ECHO LS™ SAM	扫描声学显微镜 Scanning Acoustic Microscope	3MD002
EC-25EXH	快速温变试验箱 Thermal Cycle Test System	FA009
EHS-222MD	高加速寿命试验箱 Highly Accelerated Stress Tester	FA005
UT-80A	高低温恒温试验箱 Programmable TEMP. Tester	FA004

---The end---