

**通富微电子股份有限公司**

**可靠性试验报告**

TONGFU MICROELECTRONICS LTD.CO.,

RELIABILITY TEST REPORT

**题目:** 265客户QFN32NT4G-075-M-CU产品考核可靠性试验报告

(Subject) 265 customer QFN32NT4G-075-M-CU product reliability report

**目的:** 对265-N32G030-M-CU-GR-e3-MAP-QFN32 (QFN32NT4G-075-M-CU) 产品进行可靠性试验考核

(Purpose) Evaluate the reliability of 265-N32G030-M-CU-GR-e3-MAP-QFN32 (QFN32NT4G-075-M-CU)

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**产品信息:**

(LOT BACKGROUND INFORMATION)

客户 (Customer): 265

圆片型号 (Wafer Type): N/A

品名 (Sample Name): N32G030-M-CU-GR-e3-MAP-QFN32

封装形式 (Package): QFN32NT4G-075-M-CU

组装批号 (Assembly Lot): 1CH711650101

装片胶 (Epoxy): 9246LB5

框架 (Leadframe): QFN32MLGR

芯片尺寸 (Die Size): 2.268\*1.34mm

键合丝 (Wire): CLR-1A-0.8mil Pd

塑封料 (Molding Compound): EME-G631BQ

电镀成分 (Plating Component): Pure Sn

**试验结果:**

(Result)

PASS

日期: August 18, 2021

(Date)

作成 (Write By):

石微微

审核 (Review By):

吴卫华

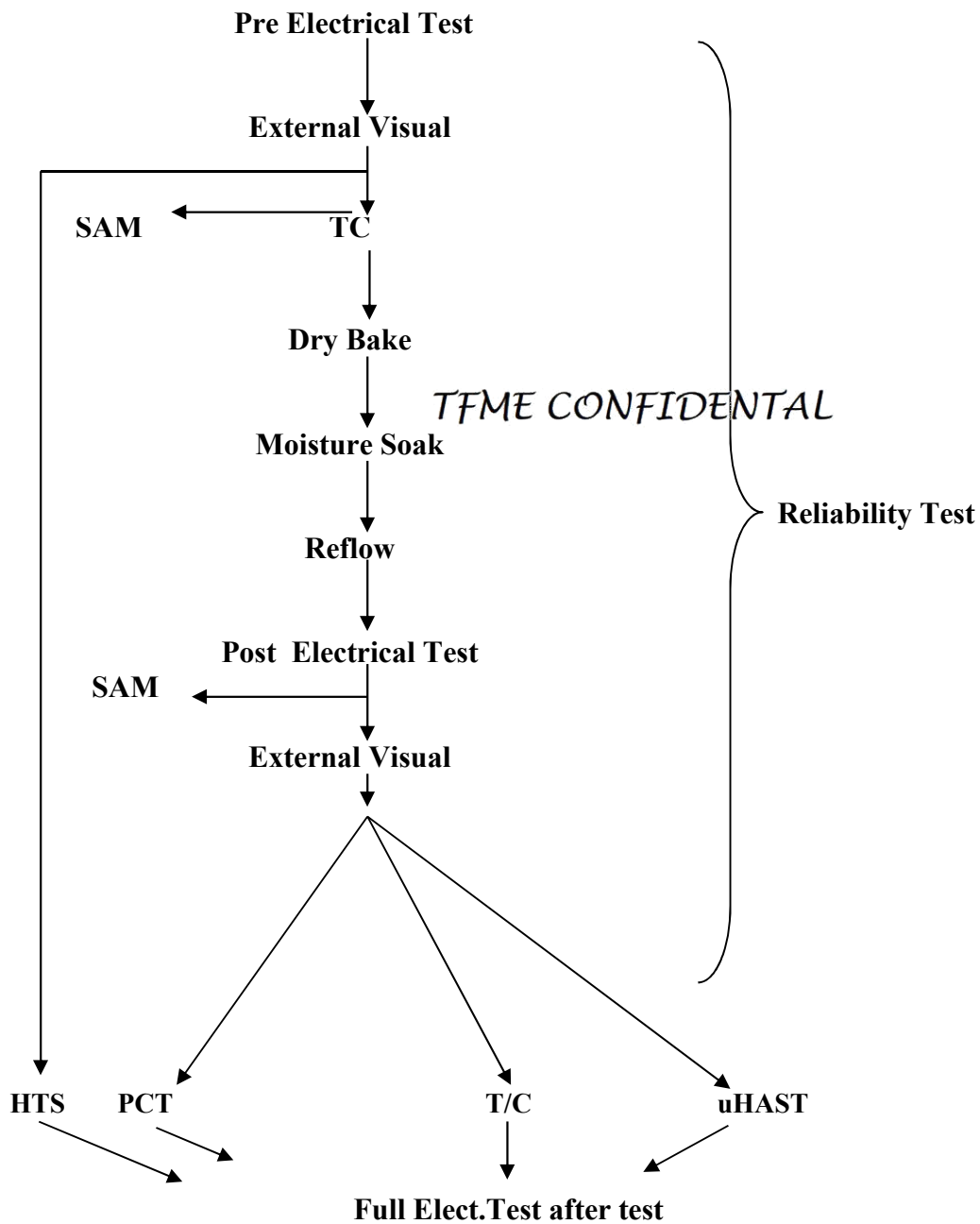
报告编号: RQ2021062423

(Report No.)

批准 (Authorize):

平来

## Test Flow



Solderability:

Preconditioning: Steam Aging 245°C Sn:Ag:Cu

试验结果:

(Summary Results)

No.	Test Item		Result	Page
1	Time Zero Elec.test		0/330	4,5,6,7,8,9,10
2	External Visual		0/330	
3	Precondition L3	Time Zero SAM (50 MHz)	OK	4,5,6,9,10
4		T/C(-65℃(+0/-10)~+150℃(+10/-0)0.5h/c 5c)	Include PCT&T/C&uHAST	
5		Dry Bake (125(-0/+5)℃/24hrs)		
6		Moisture Soak (30±2℃/60±3%RH/192hrs)		
7		Reflow (260℃(min)/3cls)		
8		POST Precon.Elec. Test	0/231	
9		Post precon. SAM (50 MHz)	OK	
10		External Visual	0/231	
11	PCT (121±2℃/2atm/168hrs(-0/+5h)		0/77	4
12	T/C (-65℃(+0/-10)~+150℃(+10/-0) 0.5h/c 500cls)		0/77	5
13	uHAST (130±2℃/85±5%RH/96hrs)		0/77	6
14	HTS (150(-0/+10)℃/1000hrs)		0/77	7
15	Solderability		0/22	8,9

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## 可靠性试验和结果

(Reliability Test and Result)

### 1 预处理 (PCT)

条件(Conditions):

温度循环(T/C)	-65℃ (+0/-10) ~ +150℃ (+10/-0) 0.5h/c5c
前烘(Dry Bake)	125 (-0/+5) °C /24hrs
吸湿(Moisture Soak)	30±2°C /60±3%RH/192hrs
回流(Reflow)	260°C (min) /3cls

电测试(Electrical Test):

预处理前后(Pre and Post Rreconditioning)

样品数(Sample Size):

77units

Ac/Re:

0/1 **TFME CONFIDENTIAL**

结果(Results):

预处理前(Pre Pre.): 0/77

预处理后(Post Pre.): 0/77

外观检查(Visual Readouts):

预处理前后(Pre and Post Preconditioning)

样品数(Sample Size):

77units

Ac/Re:

0/1

结果(Results):

预处理前(Pre Pre.): 0/77

预处理后(Post Pre.): 0/77

### 2 预处理后高压蒸煮试验(Preconditioning Autoclave Test)

条件(Conditions):

121±2°C /2atm/168hrs (-0/+5h)

样品数(Sample Size):

77units

Ac/Re:

0/1

结果(Results):

试验后(After Test): 0/77

外观检查(Visual Readouts):

试验后(After Test)

样品数(Sample Size):

77units

Ac/Re:

0/1

结果(Results):

试验后(After Test): 0/77

## 可靠性试验和结果

(Reliability Test and Result)

### 1 预处理 (T/C)

条件(Conditions):

温度循环(T/C)  $-65^{\circ}\text{C} (+0/-10) \sim +150^{\circ}\text{C} (+10/-0) 0.5\text{h/c} 5\text{c}$   
前烘(Dry Bake)  $125 (-0/+5)^{\circ}\text{C} / 24\text{hrs}$   
吸湿(Moisture Soak)  $30 \pm 2^{\circ}\text{C} / 60 \pm 3\% \text{RH} / 192\text{hrs}$   
回流(Reflow)  $260^{\circ}\text{C} (\text{min}) / 3\text{cls}$

电测试(Electrical Test):

预处理前后(Pre and Post Rreconditioning)

样品数(Sample Size):

77units

Ac/Re:

0/1

结果(Results):

预处理前(Pre Pre.): 0/77

预处理后(Post Pre.): 0/77

外观检查(Visual Readouts):

预处理前后(Pre and Post Preconditioning)

样品数(Sample Size):

77units

Ac/Re:

0/1

结果(Results):

预处理前(Pre Pre.): 0/77

预处理后(Post Pre.): 0/77

### 2 预处理后温度循环试验(Preconditioning Temperature Cycle Test)

条件(Conditions):

$-65^{\circ}\text{C} (+0/-10) \sim +150^{\circ}\text{C} (+10/-0) 0.5\text{h/c} 500\text{cls}$

样品数(Sample Size):

77units

Ac/Re:

0/1

结果(Results):

试验后(After Test): 0/77

外观检查(Visual Readouts):

试验后(After Test)

样品数(Sample Size):

77units

Ac/Re:

0/1

结果(Results):

试验后(After Test): 0/77

## 可靠性试验和结果

(Reliability Test and Result)

### 1 预处理 (uHAST)

条件(Conditions):

温度循环(T/C)	-65℃ (+0/-10) ~ +150℃ (+10/-0) 0.5h/c5c
前烘(Dry Bake)	125 (-0/+5) °C /24hrs
吸湿(Moisture Soak)	30±2°C /60±3%RH/192hrs
回流(Reflow)	260°C (min) /3cls

电测试(Electrical Test):

预处理前后(Pre and Post Rreconditioning)

样品数(Sample Size):

77units

Ac/Re:

0/1 **TFME CONFIDENTIAL**

结果(Results):

预处理前(Pre Pre.): 0/77

预处理后(Post Pre.): 0/77

外观检查(Visual Readouts):

预处理前后(Pre and Post Preconditioning)

样品数(Sample Size):

77units

Ac/Re:

0/1

结果(Results):

预处理前(Pre Pre.): 0/77

预处理后(Post Pre.): 0/77

### 2 预处理后uHAST试验(Preconditioning uHAST Test)

条件(Conditions):

130±2°C /85±5%RH/96hrs

样品数(Sample Size):

77units

Ac/Re:

0/1

结果(Results):

试验后(After Test): 0/77

外观检查(Visual Readouts):

试验后(After Test)

样品数(Sample Size):

77units

Ac/Re:

0/1

结果(Results):

试验后(After Test): 0/77

## 可靠性试验和结果

(Reliability Test and Result)

### 1 高温储存试验(High Temperature Storage Test)

条件(Conditions): 150 (-0/+10) °C / 1000hrs

样品数(Sample Size): 77units

Ac/Re: 0/1

结果(Results): 试验后(After Test): 0/77

外观检查(Visual Readouts): 试验后(After Test)

样品数(Sample Size): 77units

Ac/Re: 0/1

结果(Results): 试验后(After Test): 0/77

## 可靠性试验和结果

(Reliability Test and Result)

### 1 预处理(Solderability)

条件(Conditions): ①蒸汽老化(Steam ageing) 93 (+3/-5) °C/8hrs±15min

外观检查(Visual Readouts): 预处理前后(Pre and Post Preconditioning)

样品数(Sample Size): 22units

Ac/Re: 0/1

结果(Results): 预处理前(Pre Pre.): 0/22

预处理后(Post Pre.): 0/22

### 2 预处理后易焊性试验(Preconditioning Solderability Test)

条件(Conditions): Sn:Ag:Cu=96.5:3.0:0.5/245±5°C/5±0.5s

外观检查(Visual Readouts): 试验后(After Test)

样品数(Sample Size): 22units

Ac/Re: 0/1

结果(Results): 试验后(After Test): 0/22

### 备注(Remark):

焊料类型(Solder): 锡银铜(SnAgCu) J-STD-006

助焊剂(Flux): MS-002D02

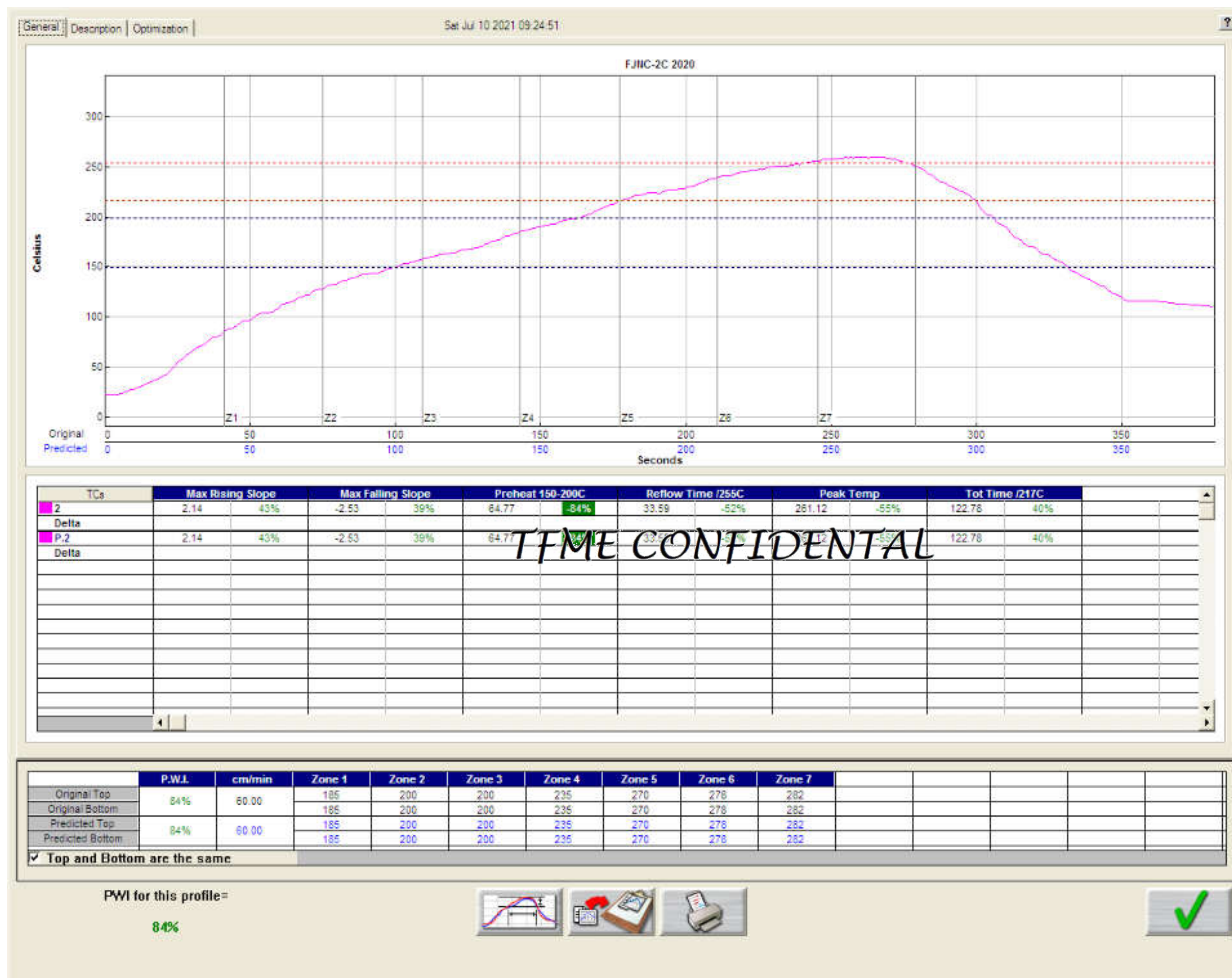
清洗液(Lotion): 无水乙醇(Absolute Alcohol)

速度(Speed): 25±6mm/s

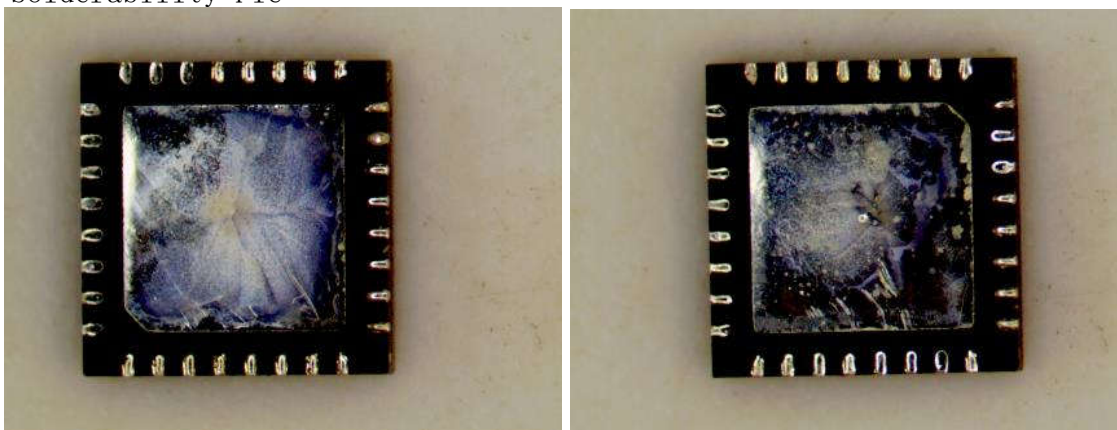
检查倍数(Magnification): 10X-30X



## Reflow Profile

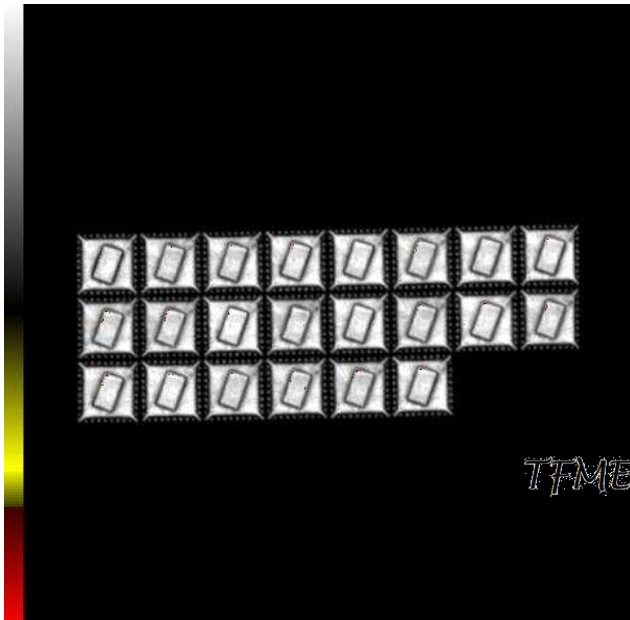


## Solderability Pic



超声波扫描图(Pics of SAM)

before Pre



after Pre



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