

# Testing and Innovation Center

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## Solderability Test report

Futaijie technology development (Shenzhen) Co., Ltd  
Testing and Innovation Center  
No.2, 2nd Donghuan Road, 10th Yousong Industrial District,  
Longhua, Shenzhen, Guangdong, China

Client:	ICKEY
Add. of Client:	Room402, Fuji-Xerox F building, Yinxing Technology park, NO. 1301 Guangang Road, Guanlan Street, Longhua district, ShenZhen City
Manufacturer:	TI
Sample Type:	IC
Model / PN:	LM4041DIM3-1. 2/NOPB
Sample Qty.:	5
Date Received:	2020/9/21
Date Tested:	2020/9/21

Approved by: \_\_\_\_\_

Checked by: 刘建锦

Prepared by: Frank Zhang

Seal of testing center

Date Reported:



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## Test Report

### 1. Test Result

	Test Item	Sample Qty.	Test Date	Test Result
1	Solderability (wetting balance)	5 pcs	2020/09/21	Fail

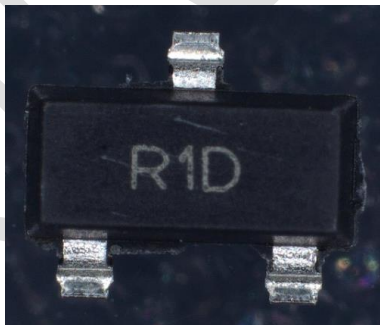

Summary: No damage of the sample, no obvious abnormality.

Remark: Pass: The test results meet the standard / customer judgment requirements

Fail: The test results do not meet the standard / customer judgment requirements

N.A.: Not applicable

### 2. Sample Description

Item	Appearance
Top View	
Bottom View	

### 3. Test Purpose

To judge the solderability of components.



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## 4. Test Equipment

Item	Equipment	Supplier	Model	Validity period of calibration
1	Wetting balance	XIMEI	MUSTIII	2021.4.21

## 5. Laboratory Ambience Condition

Temperature:  $25 \pm 5^{\circ}\text{C}$ 

Relative humidity: (25~85) %RH

## 6. Test Condition

- 1) Wetting Temperature:  $245^{\circ}\text{C} \pm 5^{\circ}\text{C}$
- 2) Wetting Time:  $5 \pm 0.5$  Seconds
- 3) Immersion and withdrawal speed: 1mm/s
- 4) Immersion depth: 0.1mm
- 5) Dipping angle:  $90^{\circ}$
- 6) Flux: Rosin mildly activated flux(RMA, 0.2%Cl)
- 7) Solder alloy: Ecosol TSC(Sn96.5Ag3.0Cu0.5)



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## 7. Reference Document

The Solderability test method conforms to IEC 60068-2-69 2007, and the process shows as follows:

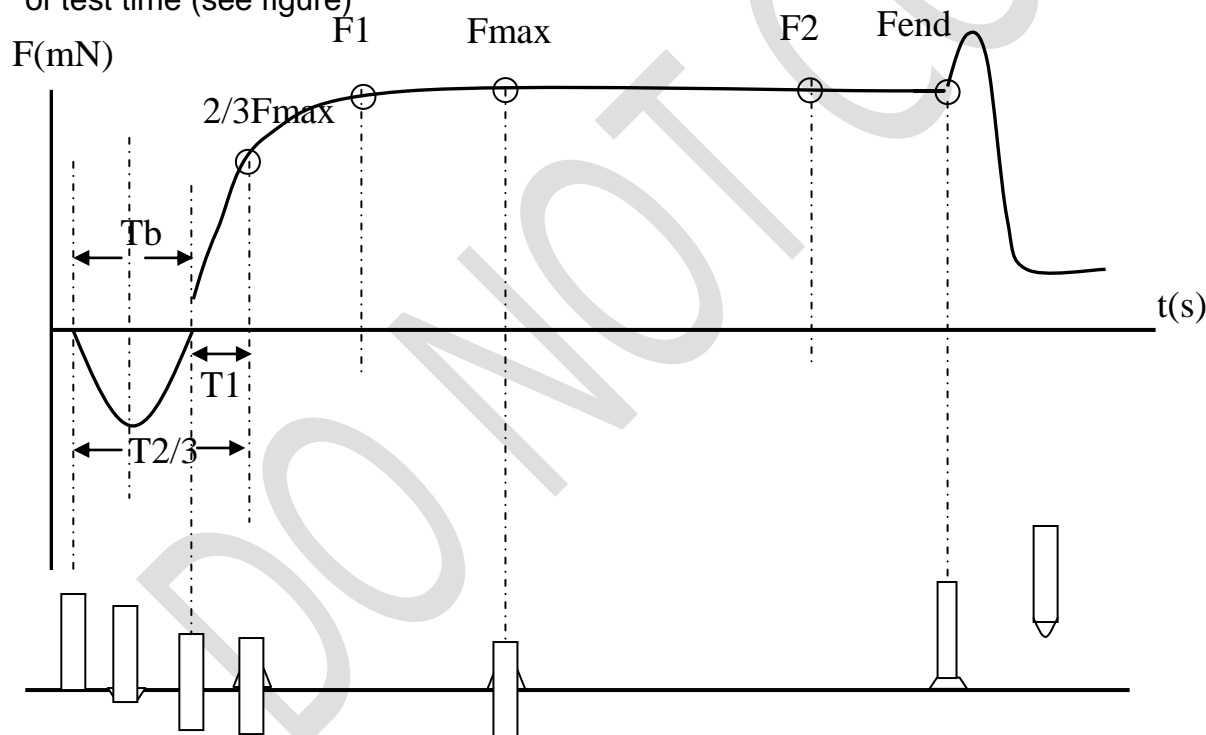
After applying the liquid flux to the specimen termination and mounting the specimen in a suitable holder, the specimen is suspended from a sensitive balance. The specimen termination is brought into contact with the cleaned surface of a solder bath and immersed to the prescribed depth. The resultant forces of buoyancy and surface tension acting upon the immersed termination are detected by a transducer and converted to a signal which is continuously monitored as a function of time, and displayed on a computer screen.

The wetting speed and the extent of wetting are derived from the force against time curve.

Evaluation of resultant graph curves from testing of microelectronic leads.:

The criteria for acceptable solderability during the evaluation of the recordings are:

- That the recorded signal trace crosses the zero balance point at or before 0.59 seconds of test time.
- That the recorded signal trace reaches two-thirds of its maximum value in 1 second or less of test time (see figure)



Tb-----Zero cross time

T2/3-----Time to 2/3Fmax

F1-----Wetting force at 2 s

Fmax-----Maximum wetting force

Sb-----Fend/Fmax

T1-----Wetting up time

2/3Fmax----2/3 of Max force

F2-----Wetting force at 5 s

Fend-----End wetting force



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## 8. Criteria of Judgment

 $T_b < 0.60s$  ;  $T_{2/3} < 1.0s$  ;

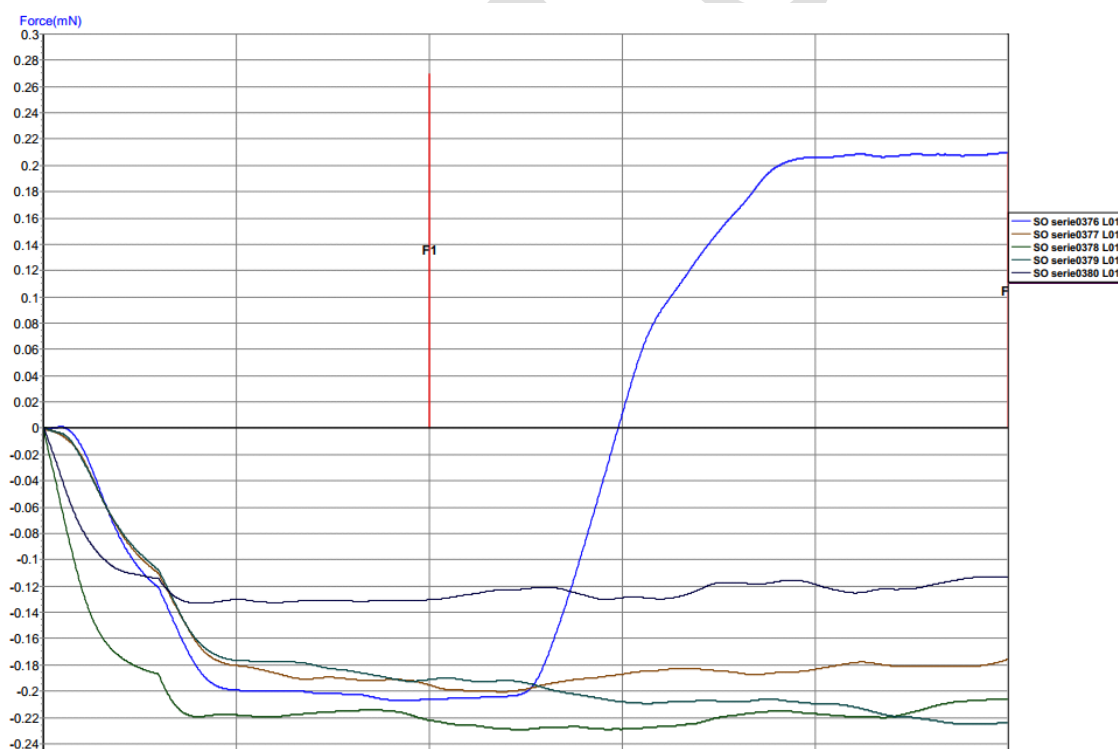
(Reference:  $F_1 \geq 0.21mN$  at 2 sec and  $F_2 \geq 0.17mN$  at 5 sec.).

## 9. Test Data

### Sample 1-5

Sample No.	Tb	Fmax	F1	F2	T2/3	Result
Sample 1	2.979	0.210	-0.206	0.210	3.444	Retarded wetting
Sample 2	0.000	-0.176	-0.195	-0.176	4.998	Non-wetting
Sample 3	0.000	-0.206	-0.222	-0.206	4.965	Non-wetting
Sample 4	0.000	-0.224	-0.191	-0.224	4.992	Non-wetting
Sample 5	0.000	-0.113	-0.130	-0.113	5.010	Non-wetting

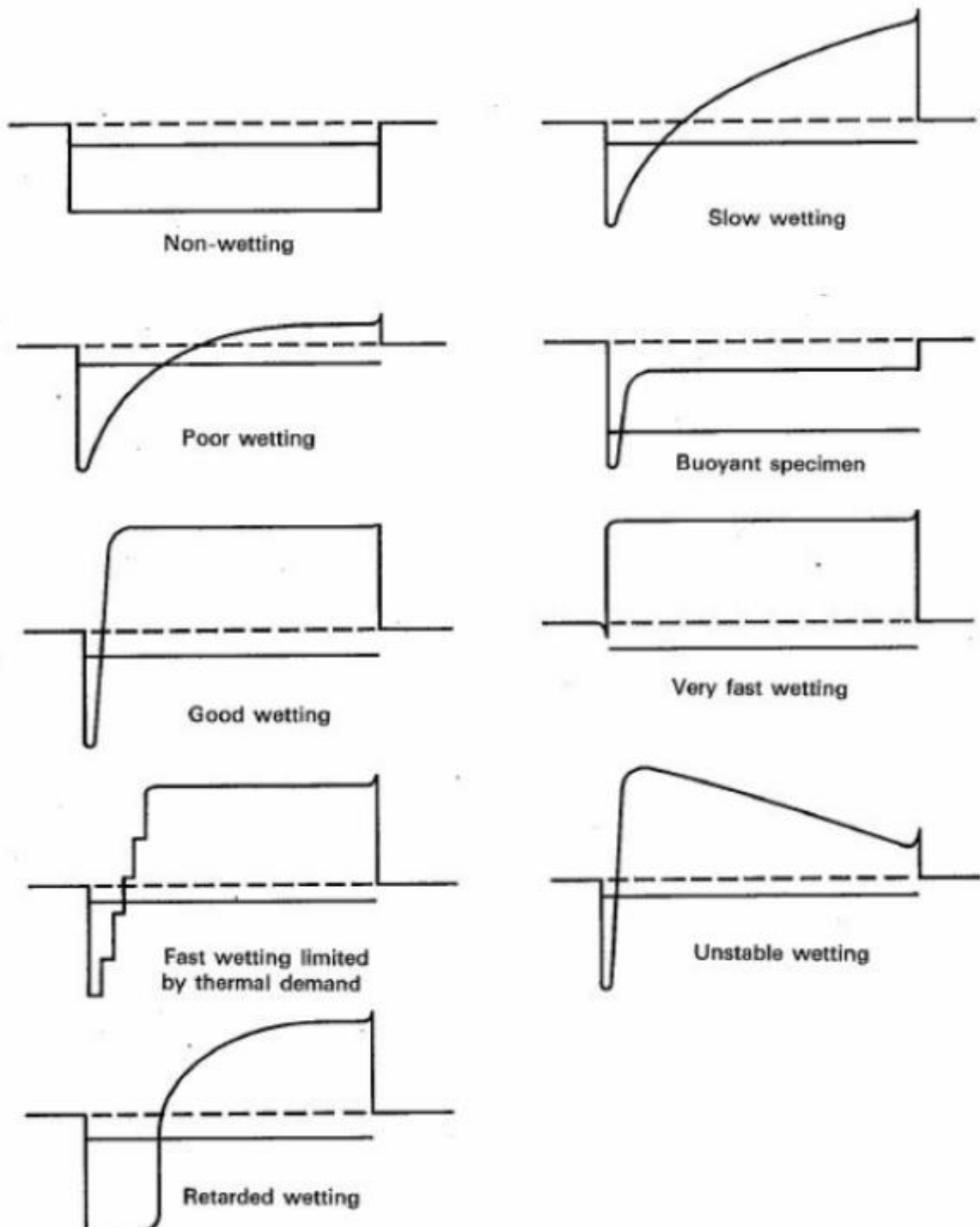
### Test profiles



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## Appendix



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\*\*\*\*\*End\*\*\*\*\*

