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# **RELIABILITY TEST REPORT**

Report No: < K200304016>

Log-in Date : 2020/02/25 Report Date : 2020/03/03

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Report No.:

K200304016

Version: 01

## **MA-tek Milestone**, Accreditation & Certificates

MA-tek is a company with ISO 9001, IECQ 17025 and ISO 27001 certifications and is the only lab in Taiwan awarded the Industrial Excellence Award by the IDB (2008). MA-tek's method of dimension measurement of analytical data can be traced back to the NIST Standard (National Institute of Standard and Technology).

- 2004 Certified by ISO 9001 and IECQ 17025.
- 2006 Elected as the Distinguished Enterprise by the Industry Development Bureau (IDB).
- 2006 Awarded #32 in the Taiwan Top 50 and #157 in the Asia Top 500 Fastest Growing Companies by Deloitte.
- 2008 Awarded the best performance company of Industrial Excellence Award by the Economy Ministry's Industry Development Bureau (IDB).
- 2009 Listed on the Taiwan OTC market (3587)
- 2012 Awarded #474 in the Asia Top 500 Fastest Growing Companies by Deloitte.
- 2013 A+ companies in Taiwan by Global Views Monthly Magazine.
- 2015 Certified by ISO 27001.







ISO/IEC 27001

**IECQ 17025** 

ISO 9001



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Report No.: K200304016

Version: 01

## **MA-tek Core Team**

### ■ CEO - Dr. Yong-Fen Hsieh



More than 20 years of experience in various fields of IC(Si), TFT-LCD, LED(III-V, II-VI), LCOS, GaAs, and Ge/ Metal contacts system.

Specialized in TEM analysis, fault isolation/failure analysis, analytical lab operation, quality management (QE, QA, QS, TQM), and materials-related fundamental research.

### ■ MA - Dr. J.C. Hu



More than 10 years of experience in various fields of Advanced IC exploratory & processing, LED, PV, industry, international technology collaboration, materials analysis.

Specialized in TEM, HRTEM, EDX, EELS, PFA and SEM related analysis, materials science, applied chemistry.

### ■ FA - Max Kuo



More than 10 years of experience in IC EFA (EMMI, OBIRCH, LCD, etc.) and PFA (Structure and Process diagnosis) analysis.

Specialized in fault isolation/failure analysis, SEM, chemical analysis, FA total solution consulting and coordination.

### RA - Woody Chuang



More than 20 years of experience in PCB, CCL, FCCL, FPCB and Server ODM/OEM.

Specialized in PCB/FPCB related reliability test and failure analysis, server component reliability research and material analysis.

### ■ SA - Ming-Ching Huang



More than 10 years of experience in surface analysis of IC(Si), TFT-LCD, LED, LCOS, GaAs, and solar cells.

Specialized in SIMS, Auger, ESCA/XPS, Scanning Capacitance Microscopy, Atomic Force Microscopy, Magnetic Field Microscopy, and SRP.



Report No.: K200304016

Version: 01

# Contents

1	Bacl	Background Information			
	1.1		ormation		
	1.2		nquiry		
	1.3 Pass/Fail Criteria				
2	Test		nary		
3	Testing Items, Conditions, and Raw Data				
	3.1	Surface I	nsulation Resistance Test		7
		3.1.1	Test System		7
		3.1.2	Test Method and Condition		7
		3.1.3	Test Results		8
		314	Pictures of Surface Insulation Resistance Test		ç

Page: 4



Report No.: K200304016

Version:

## **Background Information**

#### **Client Information** 1.1

TOCALO & HAN TAI TW CO., LTD

User Name: Lily Lin

TEL: +886-3-758-0791 Ext.1075

#### 1.2 **Testing Inquiry**

Model Name	Test Item	Quantity
20200221-A		
20200221-B	Surface Insulation Resistance Test	3 pcs
20200221-C		1

#### 1.3 Pass/Fail Criteria

N/A



Page: 5



Report No.: K200304016 Version: 01

## **Testing Summary**

Test Item	Condition	Model Name	Judgment
	Test Voltage: 10 V	20200221-A	
Surface Insulation	Current Range : 500 uA	20200221-B	N/A
Resistance Test	Thickness: 10 um	20200221-C	3.00
	Test Time: 60 Sec	20200221	



4F, No. 1, Jinshan 7th St., Hsinchu City, Taiwan 300, R.O.C.

Report No.: K200304016

Version: 01

# 3 Testing Items, Conditions, and Raw Data

## 3.1 Surface Insulation Resistance Test

### 3.1.1 Test System

Brand/Model No.	Calibration Date
Agilent / 4339B	2018/11/23~2020/05/23

## 3.1.2 Test Method and Condition

Specification: The test based on Customer's specification.

Environmental Temperature and Humidity: 25°C±5°C / 55%R.H±10%

Test Condition:

Test	Condition	
Surface Insulation Resistance Test	Test Voltage	10 V
	Current Range	500 uA
	Thickness	10 um
	Test Time	60 Sec





Report No.: K200304016

Version: 01

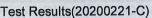
### 3.1.3 Test Results

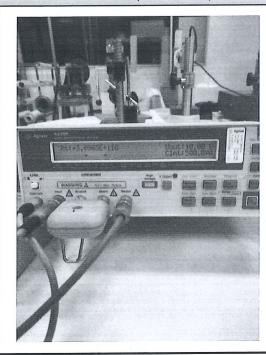
Test Result below to table:

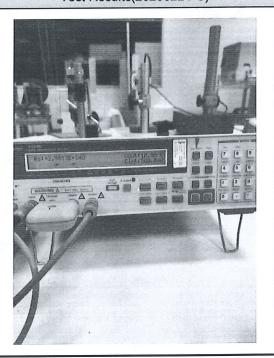
Electrical verification will be conducted by client.

Sample name	Vout	Clmt	Rs
20200221-A	10.00 V	500.0 uA	+3.0903E+11Ω
20200221-B		Overcurrent	
20200221-C	10.00 V	500.0 uA	+2.9813E+14Ω
			-(00000001 6)

Test Results(20200221-A)







>0>002) |-B旅港|製稿点线出。 2020022|-B 林電量30 1、精品一厚薄石均。

2. 請求協理,: 樣品有去卷測,但因樣品 20200221一日問題,無法後出,此樣需要 計量是否里的。



Page: 8



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Report No.: Version:

01

K200304016

### 3.1.4 Pictures of Surface Insulation Resistance Test







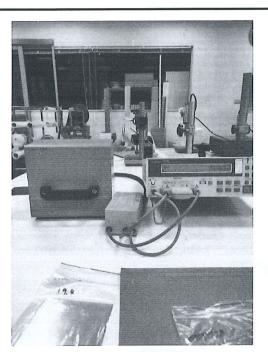
Page: 9



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Report No.: K200304016

Version: 0



**Test Setup** 



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Page: 10