



MACRONIX INTERNATIONAL CO., LTD.

Product/Process Change Notice

PCN # P-1508-0002

Date: 2015/10/16

Dear Customer:

Please be informed that Macronix is going to add 2nd source assembly subcontractor to backup customer original approved assembly subcontractors for the 63CSP (9x11x1.0 mm) package products. The 2nd source assembly subcontractor is OSE located in Taiwan.

The detailed information about this change is described in the following pages. This process change has passed Macronix' qualification based on JEDEC standard, and the qualification report is attached below.

If you have any questions, concerns, or requests about this change, please contact your local Macronix Sales Representatives within 30 days, otherwise Macronix will assume customer received the PCN with no comments and the change is acceptable to the customer. Macronix follows JEDEC standards, in JESD-46D, it stipulates: ".....Lack of acknowledgement of the PCN within 30 days constitutes acceptance of the change".

Thank you.

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(Note: For the customers who receive Macronix PCNs via distributors, Macronix will assist the distributors to convey the PCNs to the customers. It is each distributor's responsibility to communicate and track the responses of each customers and report back to Macronix, the distributor shall assume full responsibilities if failed to do so.)

PCN No.: P-1508-0002

Issue Date : 2015/10/16

Subject: Adding a new assembly vendor– OSE, located in Kaohsiung, Taiwan, for 63CSP (9x11x1.0 mm) package products.

Affected Macronix Part No.: MX30LF1G18AC-XKI,MX30LF1G18SC-XKI,MX30LF1G28AC-XKI, MX30LF1G28SC-XKI,MX30LF1GE8AB-XKI,MX30LF2G18AC-XKI,MX30LF2G18SC-XKI, MX30LF2G28AB-XKI,MX30LF2G28SB-XKI,MX30LF4G18AC-XKI,MX30LF4G28AB-XKI, MX30LF4G28SB-XKI,MX30UF1G18AC-XKI,MX30UF2G16AB-XKI,MX30UF2G18AB-XKI, MX30UF2G26AB-XKI,MX30UF2G28AB-XKI,MX30UF2GE8AB-XKI,MX30UF4G16AB-XKI, MX30UF4G18AB-XKI,MX30UF4G26AB-XKI,MX30UF4G28AB-XKI,MX30UF4GE8AB-XKI, MX60LF8G18AC-XKI,MX60LF8G28AB-XKI

Package type: 63CSP (9x11x1.0 mm) package products

Change Category : New assembly vendor

Reason of Change: To increase 63CSP (9x11x1.0 mm) assembly capacity and flexibility.

Before Change :

Assembly vendor:

ASECL

After Change :

Assembly vendors:

ASECL

OSE

Product identification:

ASECL assembled IC marking vendor code: X

OSE assembled IC marking vendor code: B

Assessment of Change:

1. No impact to Form, Fit, Function.
2. OSE assembled 63CSP (9x11x1.0 mm) had passed internal Macronix's qualification based on JEDEC MSL level-3 standards and it is also Halogen-Free, and meets RoHS compliance (European RoHS Directive. 2011/65/EU).
* Attached is OSE assembled 63CSP (9x11x1.0 mm) package qualification report
3. OSE has been one of Macronix's high performing assembly vendors for other package types for a long time.

Schedule:

CS Sample available: 2015/10/31

Mass production: 2015/11/30



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OSE 63 ball CSP (9 x 11 x 1.0 mm) Package Qualification Report

1. PURPOSE:

To qualify new assembly subcontractor “OSE” for 63CSP (9 x 11 x 1.0 mm) package.

2. PACKAGE PROFILE:

ASSEMBLY HOUSE	OSE
PACKAGE	63 ball CSP (9 x 11 x 1.0 mm, ball pitch: 0.8 mm)
DIE SIZE	6898 x 7351 μm^2
DIE ATTACH	Nitto EM-760
SUBSTRATE	BT RESIN(2 Layer) (HF)
WIRE BOND MATERIAL	Au
MOLD COMPOUND	Sumitomo EME-E770
SOLDER BALL	Sn 96.5/ Ag 3.0 / Cu 0.5 (d: 0.45 mm)

3. QUALIFICATION ITEMS, TEST CONDITIONS, AND TEST FLOW:

3-1. QUALIFICATION ITEMS:

Test Item	Reference	Test Condition
1. Heat Resistance Test: Reflow Test	JEDEC J-STD-020	MSL: Follow JEDEC MSL Level 3 (30°C/60%RH, 192hrs)
2. Temperature Cycling Test	JESD22-A104	-65°C ~ 150°C
3. Highly Accelerated Temperature and Humidity Stress Test	JESD22-A110	130°C / 85% RH
4. High Temperature Storage Test	JESD22-A103	@150°C

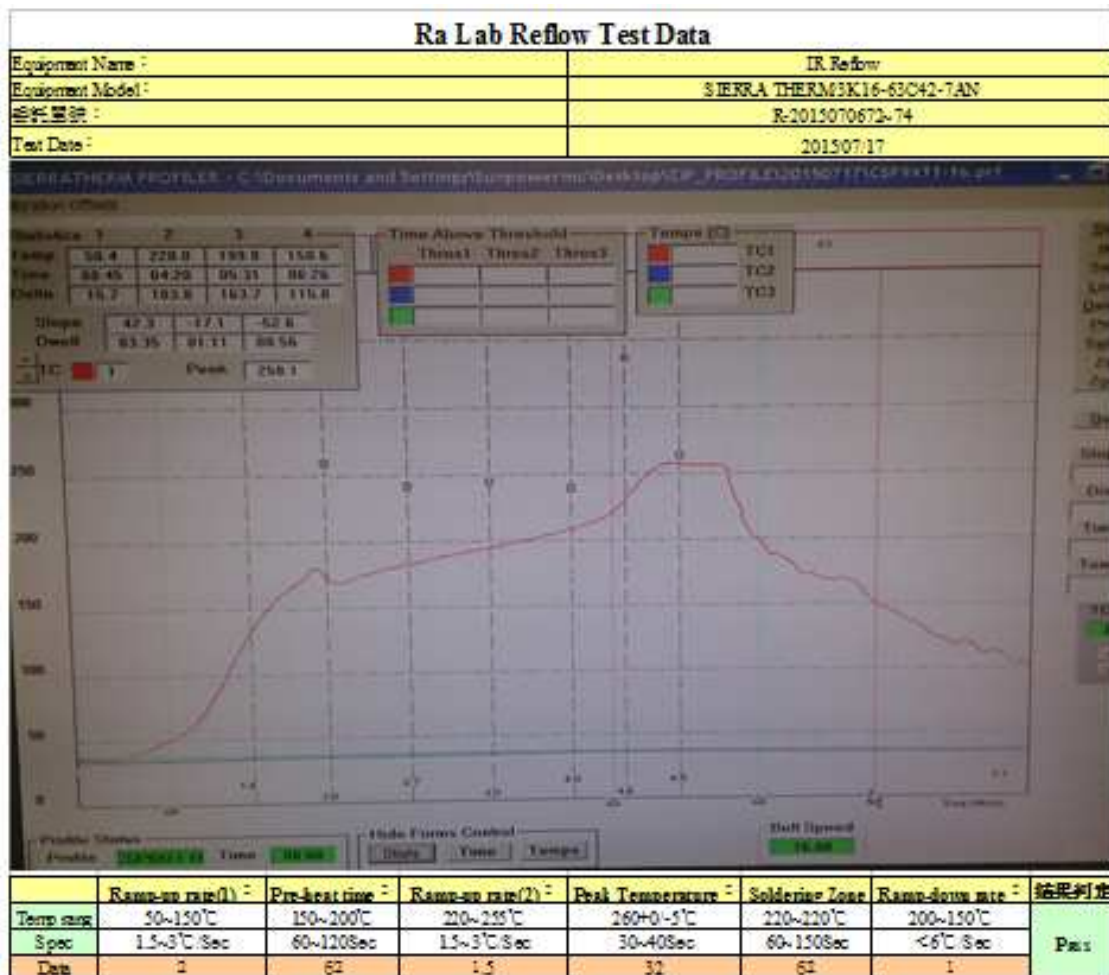
*Perform SAT examination before and after Preconditioning per JESD22-A112.



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3-2. HEAT RESISTANT TEST (REFLOW TEST) AND RELIABILITY TEST FLOW

3-2-1. REFLOW PROFILE



Note 1: Subject the samples to 3 cycles of the above defined reflow conditions

Note 2: Time 25℃ to peak temperature: 8 minutes max.

Note 3: The time between reflows shall be 5 minutes minimum and 40 minutes maximum.



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3-2-2. CRITERIA:

LTPD= 3%, TCT 500 cycles & HAST 96 hours & HTST 500 hours.

3-2-3. REFERENCE SPECIFICATION:

5650-0901: ASSEMBLY RELIABILITY QUALIFICATION SPEC

4. RESULTS

4-1. HEAT RESISTANCE TEST and RELIABILITY TEST RESULTS

PRODUCT	6311		
LOT#	8B850303A6-1	8B850303A6-2	8B850303A6-3
DATE CODE	B1524	B1524	B1525
	0/22	0/22	0/22
PRECON	0/180	0/180	0/180
SAT 2	0/22	0/22	0/22
TCT 500 CYC	0/77	0/77	0/77
HAST 96 HRS	0/77	0/77	0/77
HTST 500 HRS	0/45	0/45	0/45

FAIL / SAMPLE SIZE

5. CONCLUSION: PASS

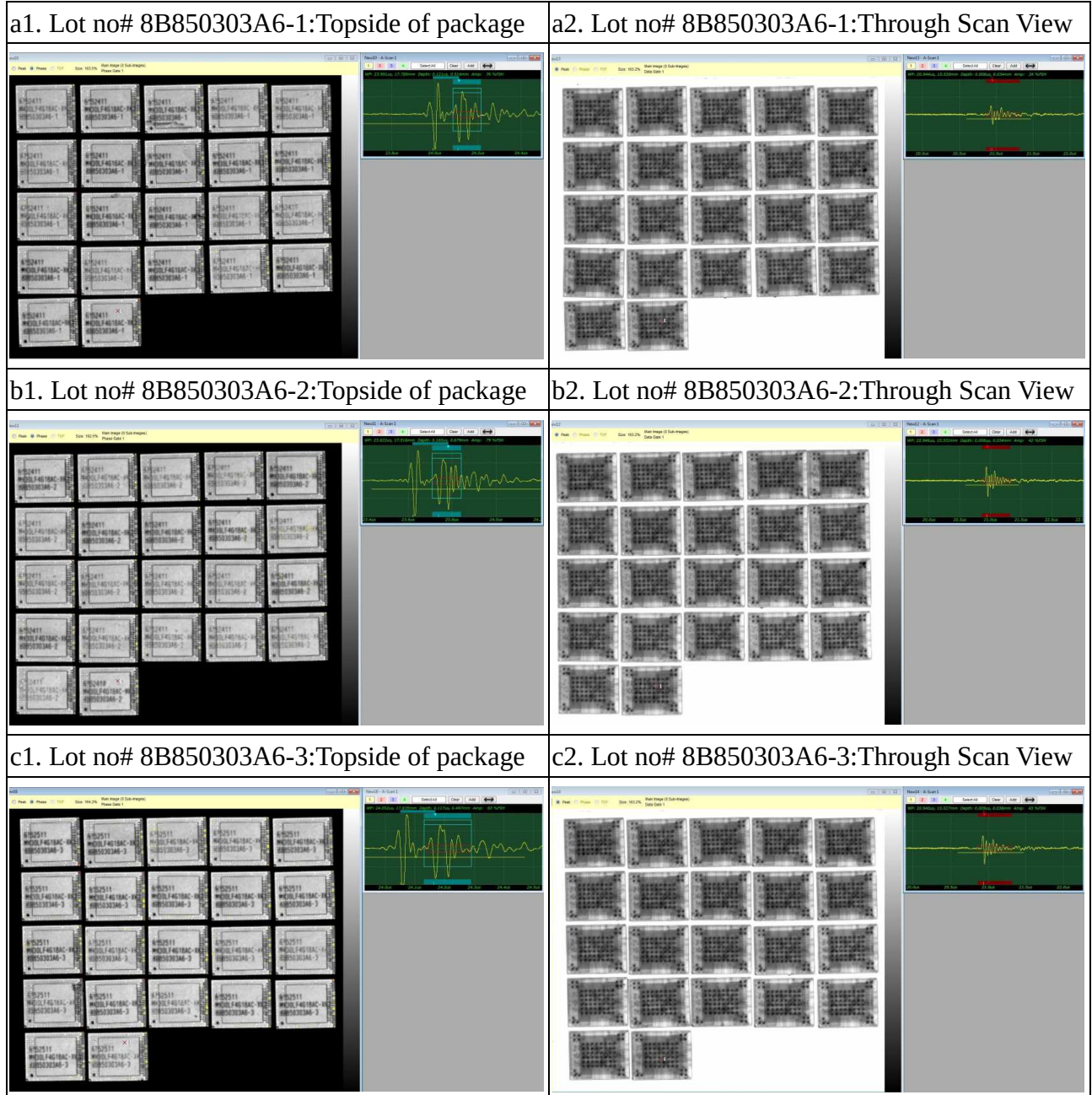


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6. ATTACHED FILE

6-1. SAT PHOTO

6-1-1. BEFORE PRE-CONDITION

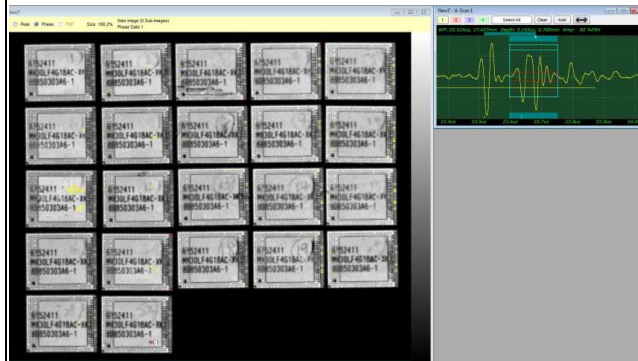




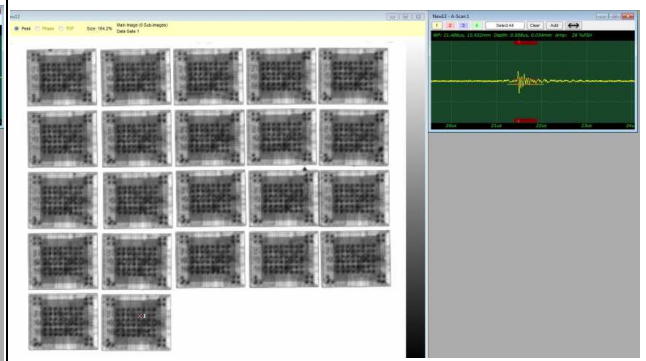
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6-1-2. AFTER PRE-CONDITION

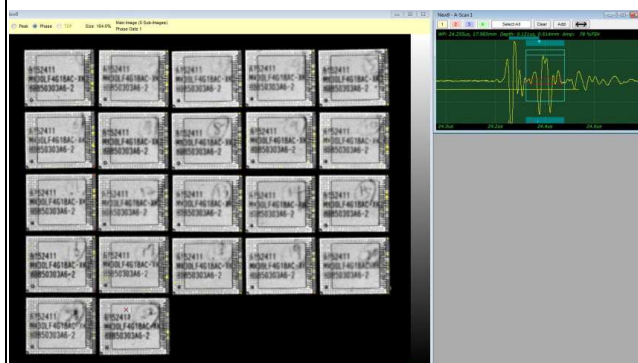
a1. Lot no# 8B850303A6-1:Topside of package



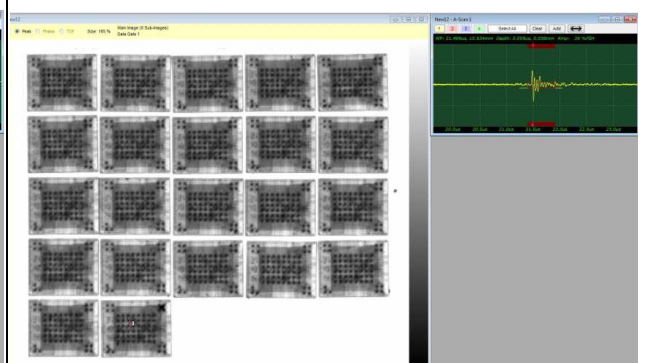
a2. Lot no# 8B850303A6-1:Through Scan View



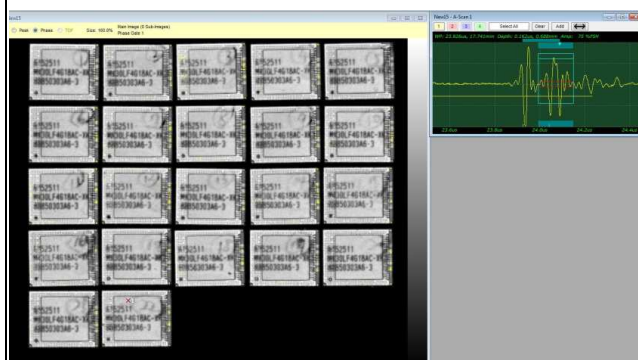
b1. Lot no# 8B850303A6-2:Topside of package



b2. Lot no# 8B850303A6-2:Through Scan View



c1. Lot no# 8B850303A6-3:Topside of package



c2. Lot no# 8B850303A6-3:Through Scan View

