

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

BOM	ASECL
Substrate Material	BT RESIN (2 Layer) (HF)
Die Attach Material	Henkel 2025D
Wire Bond Material	0.7mil Au
Molding Compound	Kyocera KE-G1250
Solder Ball	Sn 95.5/Ag 4.0/Cu 0.5 (d:0.45mm)

BOM	OSE
Substrate Material	BT RESIN (2 Layer) (HF)
Die Attach Material	Nitto EM-760
Wire Bond Material	0.7mil Au
Molding Compound	Sumitomo EME-E770
Solder Ball	Sn 96.5/Ag 3.0/Cu 0.5 (d:0.45mm)

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



MACRONIX INTERNATIONAL Co., LTD.
旺宏電子股份有限公司

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

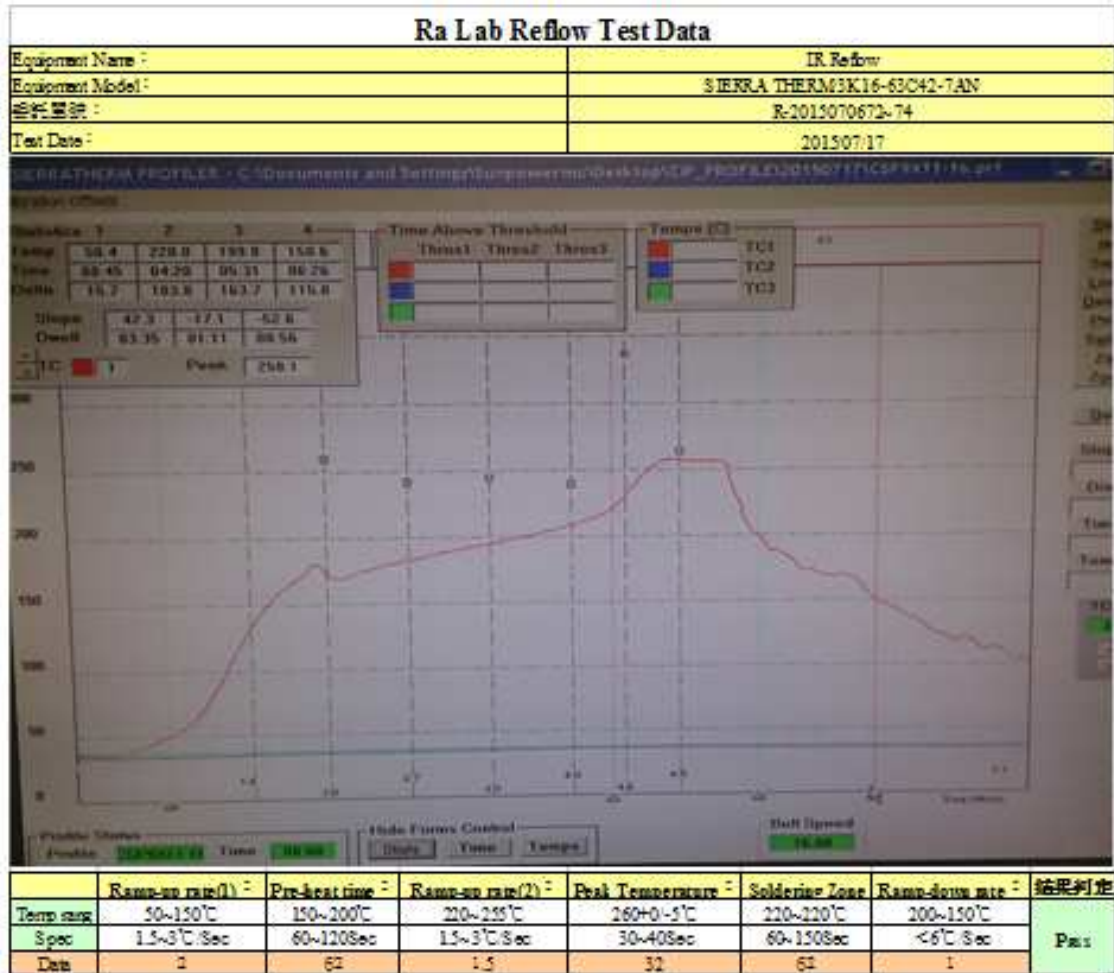
*Perform SAT examination before and after Preconditioning per JESD22-A112.



MACRONIX INTERNATIONAL CO., LTD.
旺 宏 電 子 股 份 有 限 公 司

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°C to peak temperature: 8 minutes max.

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



MACRONIX INTERNATIONAL Co., LTD.
旺 宏 電 子 股 份 有 限 公 司

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



MACRONIX INTERNATIONAL CO., LTD.
旺宏電子股份有限公司

6. ATTACHED FILE

6-1. SAT PHOTO

6-1-1. BEFORE PRE-CONDITION

<p>a1. Lot no# 8B850303A6-1:Topside of package</p>	<p>a2. Lot no# 8B850303A6-1:Through Scan View</p>
<p>b1. Lot no# 8B850303A6-2:Topside of package</p>	<p>b2. Lot no# 8B850303A6-2:Through Scan View</p>
<p>c1. Lot no# 8B850303A6-3:Topside of package</p>	<p>c2. Lot no# 8B850303A6-3:Through Scan View</p>



MACRONIX INTERNATIONAL CO., LTD.
旺宏電子股份有限公司

6-1-2. AFTER PRE-CONDITION

<p>a1. Lot no# 8B850303A6-1:Topside of package</p>	<p>a2. Lot no# 8B850303A6-1:Through Scan View</p>
<p>b1. Lot no# 8B850303A6-2:Topside of package</p>	<p>b2. Lot no# 8B850303A6-2:Through Scan View</p>
<p>c1. Lot no# 8B850303A6-3:Topside of package</p>	<p>c2. Lot no# 8B850303A6-3:Through Scan View</p>