



Product/Process Change Notice

PCN # P-1706-0014

Date: 2017/08/07

Dear Customer:

Please be informed that Macronix is going to add 2nd source assembly subcontractor to backup customer original approved assembly subcontractors for TSOP48 package products. The 2nd source assembly subcontractor is OSE.

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 J-STD-046, 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-1706-0014

Issue Date : 2017/08/07

Subject: Adding a new assembly vendor– OSE for TSOP48 package products.

Affected Macronix Part No.:

MX30LF4G18AB-TI
MX30LF2GE8AB-TI
MX30LF2G18AC-TI
MX30LF4G18AC-TI
MX30LF2G189C-TI

Package type: TSOP48 package products

Change Category : New assembly vendor

Reason of Change: To increase TSOP48 package assembly capacity and flexibility.

Before Change :

Assembly vendor:
ChipMOS
SPIL

After Change :

Assembly vendors:
ChipMOS
SPIL
OSE

Product identification:

OSE assembled IC marking vendor code: B
ChipMOS assembled IC marking vendor code: a
SPIL assembled IC marking vendor code: S

Assessment of Change:

1. No impact to Form, Fit, Function, Quality & Reliability.
2. OSE assembled TSOP48 package had passed Macronix's qualification based on JEDEC MSL level 3 standards and it is also Halogen-Free, and meets RoHS compliance.
* Attached is OSE assembled TSOP48 package qualification report.
3. OSE has been one of Macronix's high performing assembly vendors for a long time.

Schedule:

CS Sample available: 2017/08/30
Mass production: 2017/11/15.



OSE 48L TSOP(I) Package Qualification Report

1. PURPOSE:

To qualify new assembly subcontractor “OSE” for 48L TSOP(I) package.

2. PACKAGE PROFILE:

ASSEMBLY HOUSE	OSE
PACKAGE	48L TSOP(I) (12 x 20 mm)
DIE SIZE	6912 x 8750 μm^2
DIE ATTACH	Nitto EM-760 (Film)
LEAD FRAME	Copper, Double Ring Silver
WIRE BOND MATERIAL	Au
MOLD COMPOUND	Hitachi 9740HF
LEAD FINISH	Matte Sn

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

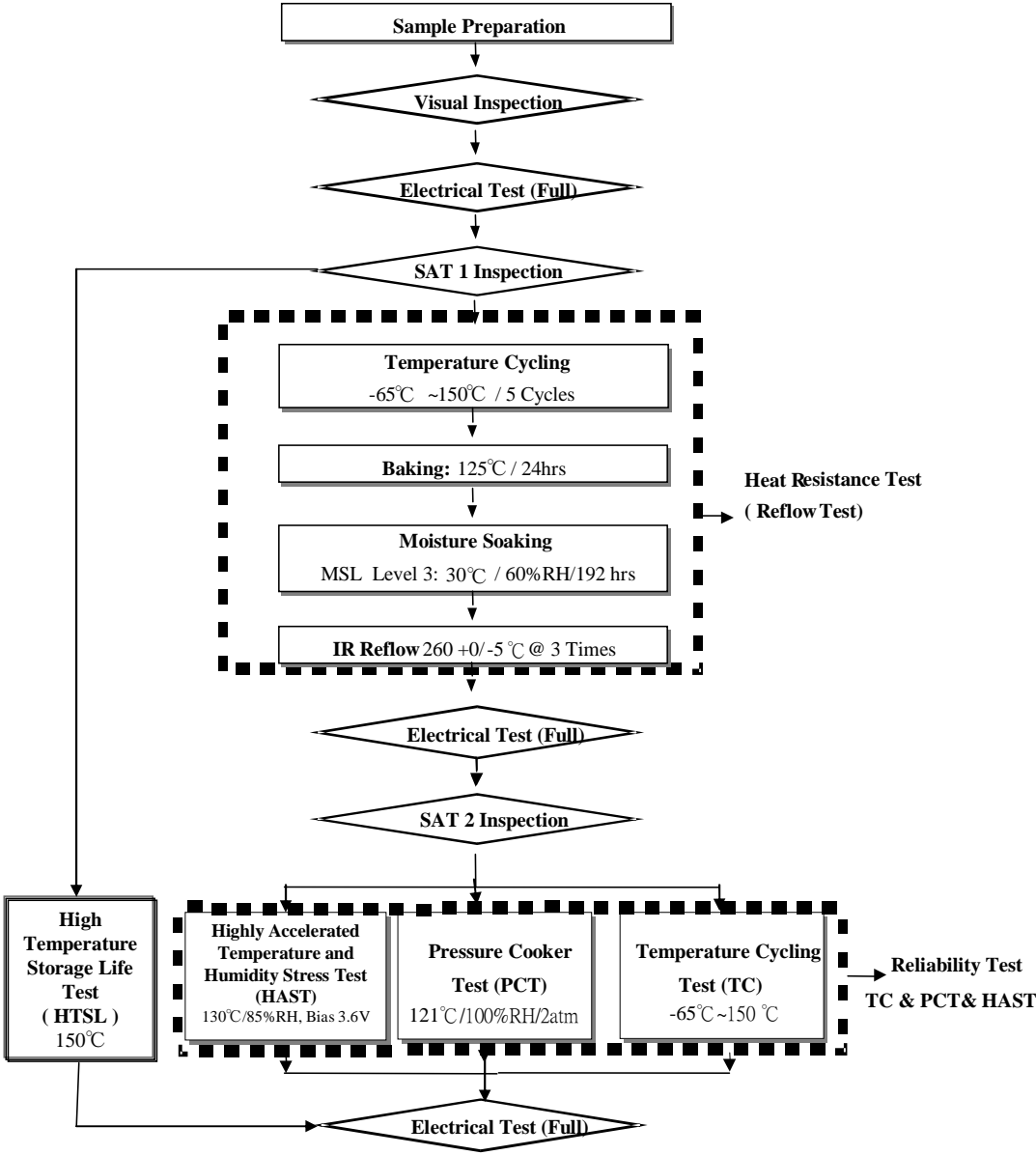
3-1. QUALIFICATION ITEMS:

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. Pressure Cooker Test	JESD22-A102	121°C / 100%RH / 2atm
3. Temperature Cycling Test	JESD22-A104	-65°C ~150°C
4. Highly Accelerated Temperature and Humidity Stress Test	JESD22-A110	130°C / 85% RH, Bias: 3.6V
5. High Temperature Storage Life Test	JESD22-A103	150°C
6. Solderability Test	JESD22-B102	<ul style="list-style-type: none"> ■ Steam aging 8hrs & Dipping Time \leq 5sec ■ Sn-Ag-Cu solder paste: 245°C ■ Sn-Pb solder paste: 235°C

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



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

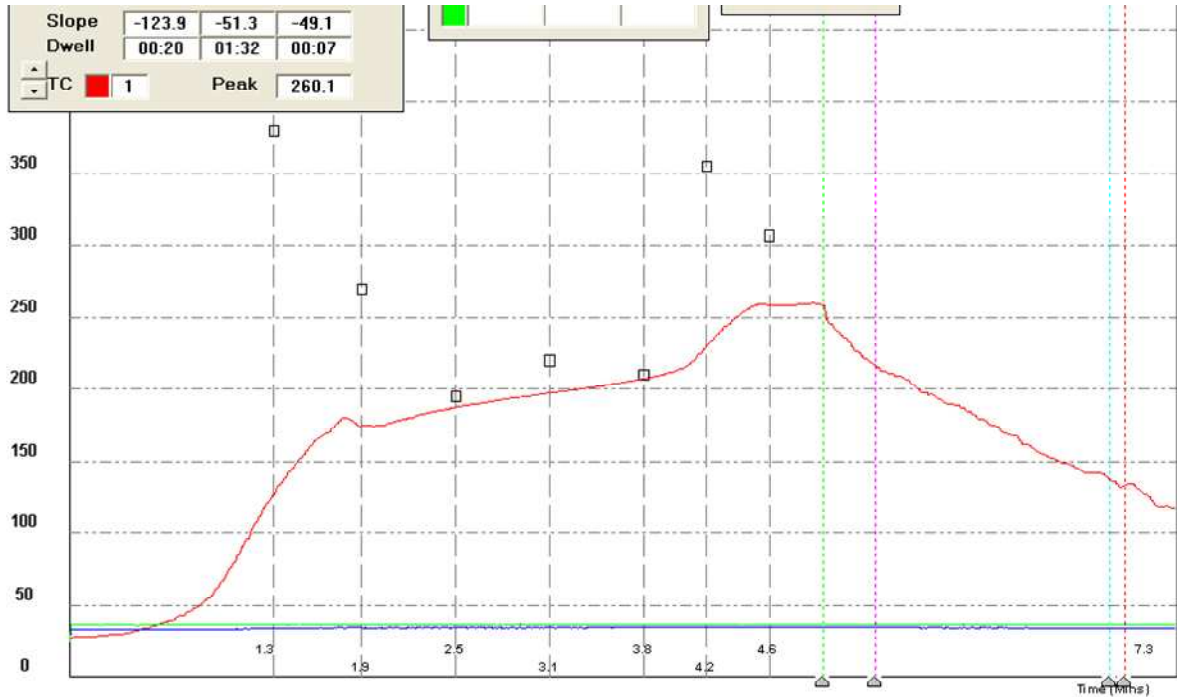




3-2-1. REFLOW PROFILE

Ra Lab Reflow Test Data

Equipment Name :	IR Reflow
Equipment Model :	SIERRA THERM/3K16-63C42-7AN
委託單號 :	R-2017042740~42
Test Date :	2017/05/08



Profile Status		Hide Forms Control			Belt Speed		
Profile	48TSOP-2	Time	00:00	Stats	Time	Temps	17.00
	Ramp-up rate(1) :	Pre-heat time :	Ramp-up rate(2) :	Peak Temperature :	Soldering Zone	Ramp-down rate :	結果判定
Temp rang	50~150°C	150~200°C	217~255°C	260+0/-5°C	217~217°C	255~217°C	Pass
Spec	1.5~3°C/Sec	60~120Sec	1.5~3°C/Sec	30~40Sec	60~150Sec	<6°C/Sec	
Data	2.6	110	1.67	30	73	2.01	

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.

3-2-2. CRITERIA

LTPD= 3%, PCT 96 hours and TC 500 cycles & HAST 96 hours & HTSL 500 hours.

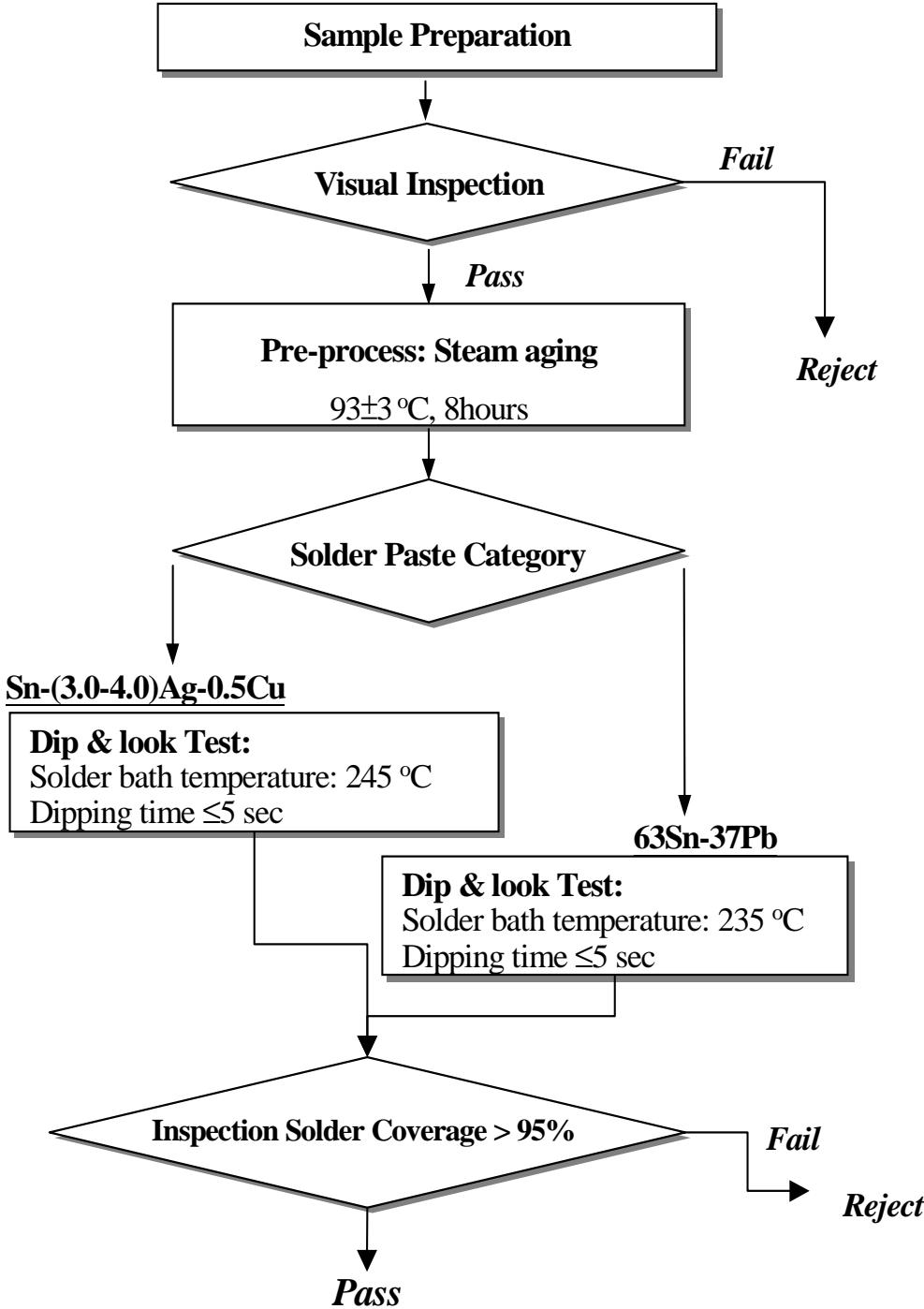
3-2-3. REFERENCE SPECIFICATION

5650-0901: ASSEMBLY RELIABILITY QUALIFICATION SPEC



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3-3. SOLDERABILITY TEST FLOW





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4. RESULTS

4-1. HEAT RESISTANCE TEST and RELIABILITY TEST RESULTS

PRODUCT	6306		
LOT#	8B243600B5	8B243600B6	8B243600B7
DATE CODE	B1713	B1713	B1714
SAT 1	0/22	0/22	0/22
PRECON	0/231	0/231	0/231
SAT 2	0/22	0/22	0/22
PCT 96 HRS	0/77	0/77	0/77
TC 500 CYC	0/77	0/77	0/77
HAST 96 HRS	0/77	0/77	0/77
HTSL 500 HRS	0/45	0/45	0/45

FAIL / SAMPLE SIZE

4-2. SOLDERABILITY TEST RESULTS:

Matte Sn Plating

Plating Material	Matte Sn		
Solder Paste Material	Sn-(3.0-4.0)Ag-0.5Cu		
INSPECTION	0/5	0/5	0/5

FAIL / SAMPLE SIZE

Plating Material	Matte Sn		
Solder Paste Material	63Sn-37Pb		
INSPECTION	0/5	0/5	0/5

FAIL / SAMPLE SIZE

5. CONCLUSION: PASS

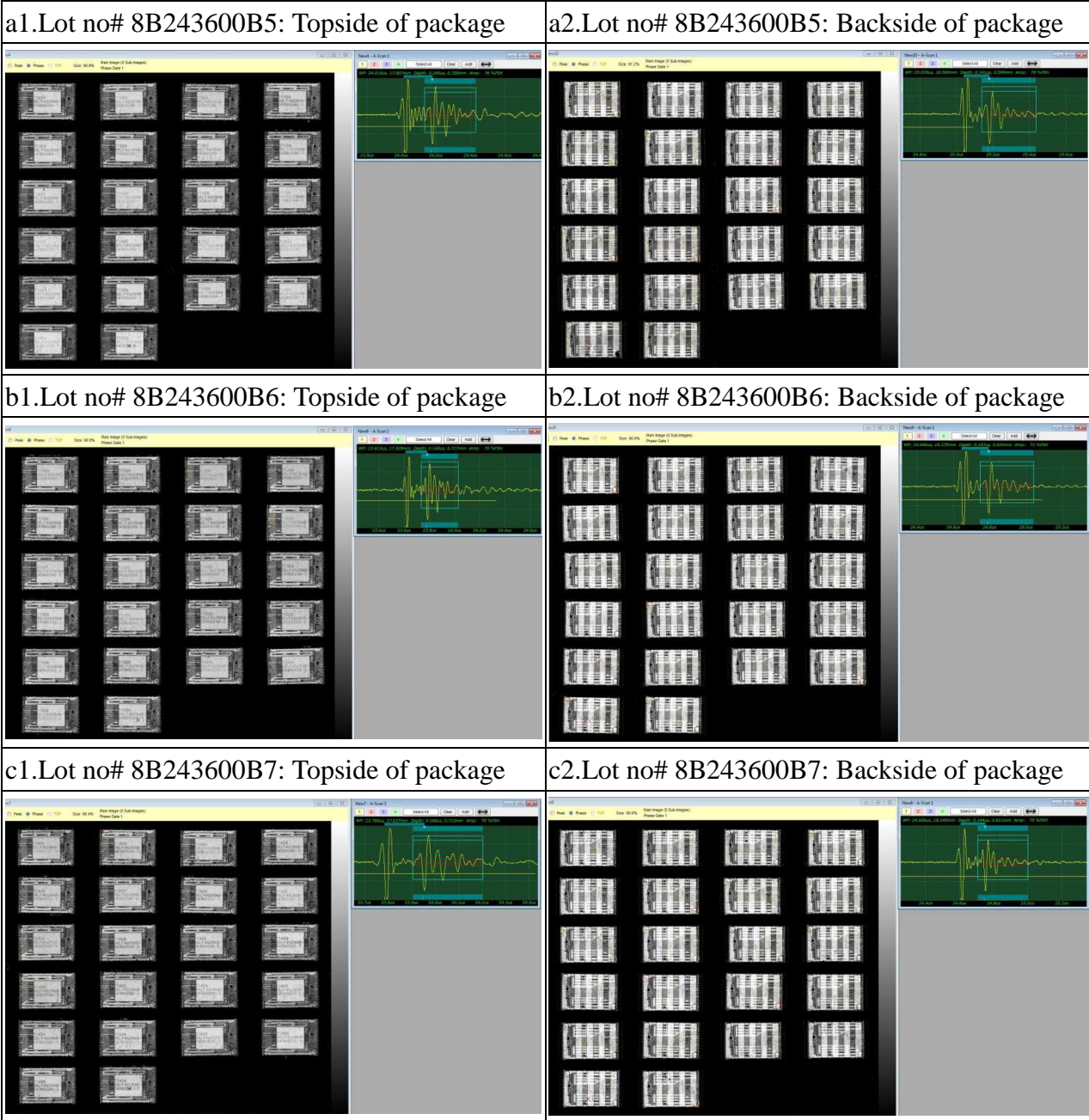


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6. ATTACHED FILE:

6-1. SAT PHOTO

6-1-1. BEFORE PRE-CONDITION



6-1-2. AFTER PRE-CONDITION

