



PRODUCT AND PROCESS CHANGE NOTIFICATION
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ISSUE DATE: 04-Jun-2013
NOTIFICATION: 15408
TITLE: S912XEP TSMC11 FAB QUAL and Cu wire QUAL for TSMC3/11 parts
in FSL-KLM-FM
EFFECTIVE DATE: 02-Sep-2013

DEVICE(S)

MPN
MC9S12XEP100CAG
MC9S12XEP100CAL
MC9S12XEP100MAG
MC9S12XEP100MAL
MC9S12XEP768CAL
MC9S12XEP768MAG
S912XEP100J4CAG
S912XEP100J4CAL
S912XEP100J4MAG
S912XEP100J4MAL
S912XEP100J4VAG
S912XEP100J4VAGR
S912XEP100J5CAG
S912XEP100J5CAGR
S912XEP100J5MAG
S912XEP100J5MAGR
S912XEP100J5MAL
S912XEP100J5MALR
S912XEP100J5VAG
S912XEP100J5VAGR
S912XEP100J5VAL
S912XEP100J5VALR
S912XEP100W0MAG
S912XEP100W0MAGR
S912XEP100W0MAL
S912XEP100W0VAG
S912XEP100W0VAGR

S912XEP100W1MAG
S912XEP100W1MAGR
S912XEP100W1MAL
S912XEP100W1MALR
S912XEP100W1VAG
S912XEP100W1VAGR
S912XEP768J2VAG
S912XEP768J4MAG
S912XEP768J4MAGR
S912XEP768J5CAG
S912XEP768J5CAGR
S912XEP768J5MAG
S912XEP768J5MAGR
S912XEP768J5MAL
S912XEP768J5MALR
S912XEP768J5VAG
S912XEP768J5VAGR
S912XEP768J5VAL
S912XEP768J5VALR
S912XEP768W0MAG
S912XEP768W1MAG
S912XEP768W1MAGR

AFFECTED CHANGE CATEGORIES

- ASSEMBLY PROCESS
- FAB SITE

DESCRIPTION OF CHANGE

Freescale is announcing the introduction of Taiwan Semiconductor Manufacturing Company Fab 11 (TSMC11) Washington, USA as primary wafer manufacturing location for the S912XEP100 and S912XEP768 family of products.

TSMC11 has been qualified with Copper wirebond material. As a result, a change from Gold to Copper Wire has been qualified for Taiwan Semiconductor Manufacturing Company Fab 3 (TSMC3), Hsin-Chu, Taiwan sourced material.

The change to Cu wire also includes a change in leadframe flag type. Products currently utilizing an X-Flag will convert to a Solid Flag. This leadframe flag change enables a robust Cu wirebond process.

The part number of the mold compound will be updated per the table below. The new part number indicates a tightening of the mold compound specifications for use with Copper (Cu) wire.

Current Mold Compound	MC Hitachi 9200HF10M
Updated Mold Compound	CEL-9200HF10M Cu Wire

FSL-KLM-FM is the current qualified assembly site.

An update to this notification containing qualification results will be issued upon successful completion of TSMC3 and TSMC11 qualification for Advanced Semiconductor Engineering Chung Li (ASE CL), Taiwan as an assembly site for 144LQFP package.

To provide dual sourcing opportunities and to mitigate supply issues, customers are required to convert orders to the flex part numbers with Bill of Material (BOM) containing both TSMC3 and TSMC11 material. For customers requiring single fab material, only TSMC11 part numbers are available. Conversions will take place at the end of the 90 day PCN expiration.

REASON FOR CHANGE

The Fab manufacturing site capacity expansion to TSMC11 as the primary site will improve Freescale's ability to meet customer demand, while still maintaining the ability to provide backup supply from the original Fab (TSMC3) in case of emergency or demand surges.

The transfer from Gold to Copper wire is required to mitigate against raw material cost increases.

ANTICIPATED IMPACT OF PRODUCT CHANGE(FORM, FIT, FUNCTION, OR RELIABILITY)

There is no impact to form, fit, function or reliability. Reliability is equivalent or improved.

Freescale will consider specific conditions of acceptance of this change submitted within 30 days of receipt of this notice on a case by case basis. To request further data or inquire about the notification, please enter a [Service Request](#).

For sample inquiries - please go to www.freescale.com

QUAL DATA AVAILABILITY DATE: 30-Apr-2013

QUALIFICATION STATUS: COMPLETED

QUALIFICATION PLAN:

Freescale Semiconductor Transfer of Qualified Processes specification for Fab and Assembly Qualifications were followed.

RELIABILITY DATA SUMMARY:

See attached qualification results.

ELECTRICAL CHARACTERISTIC SUMMARY:

No change was made to the operating performance of the device. No change to datasheet. Electrical Distribution Gold versus Copper wire comparison enclosed.

CHANGED PART IDENTIFICATION:

Automotive "S" part numbers will change as shown below to reflect TSMC11 Fab and new mask set revision identifiers i.e. "W0/W1". "MC" prefix part numbers will not change.

Table below provides equivalent "S" part numbers by Fab Site:

Package	Current TSMC3 PNs	TSMC11 PNs	Recommended Flex PNs (TSMC3 and TSMC11)
112LQFP	S912XEPyyyJ4zAL/R	S912XEPyyyW0zAL/R	S912XEPyyyAzAL/R
	S912XEPyyyJ5zAL/R	S912XEPyyyW1zAL/R	S912XEPyyyBzAL/R
144LQFP	S912XEPyyyJ4zAG/R	S912XEPyyyW0zAG/R	S912XEPyyyAzAG/R
	S912XEPyyyJ5z AG/R	S912XEPyyyW1zAG/R	S912XEPyyyBzAG/R
yyy = Flash memory size (1M, 768K)	J = TSMC3 4 = firmware rev. A 5 = firmware rev. B (EEE brownout fix)	W = TSMC11 0 = firmware rev. A 1 = firmware rev. B (EEE brownout fix)	No wafer fab designator A = firmware rev. A B = firmware rev. B (EEE brownout fix)

z = Temp range (M, V, C)			
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Example	Current TSMC3 PNs	TSMC11 PNs	Flex PNs (TSMC3 and TSMC11)
112LQFP	S912XEP100J5MALR	S912XEP100W1MALR	S912XEP100BMALR
144LQFP	S912XEP768J5VAGR	S912X EP768W1VAGR	S912X EP768BVAGR

The Tracecode marking on the device includes assembly site and datecode. Freescale will have Copper wire traceability by assembly site and datecode.

SAMPLE AVAILABILITY DATE: 10-Jun-2013

ATTACHMENT(S):

External attachment(s) FOR this notification can be viewed AT:

[15408 Qualification Report with ED CUSTOMER COPY.pdf](#)

[15408 S912XEP TSMC11 FAB QUAL and Cu wire QUAL for TSMC3-11 parts in FSL-KLM.pdf](#)