



PRODUCT AND PROCESS CHANGE NOTIFICATION
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ISSUE DATE: 31-Jul-2013
NOTIFICATION: 15407
TITLE: S912XET TSMC11 FAB QUAL and Cu Wire QUAL for TSMC3/11 Parts
in FSL-KLM-FM
EFFECTIVE DATE: 29-Oct-2013

DEVICE(S)

MPN
MC9S12XEG128CAL
MC9S12XEG128MAA
MC9S12XEG128MAL
MC9S12XET256CAG
MC9S12XET256MAA
MC9S12XET256MAG
MC9S12XET256MAL
MC9S12XET256VAL
S912XEA128J2CAA
S912XEA128J2MAA
S912XEG128J1CAA
S912XEG128J1MAA
S912XEG128J2CAA
S912XEG128J2CAAR
S912XEG128J2CAL
S912XEG128J2CALR
S912XEG128J2MAA
S912XEG128J2MAAR
S912XEG128J2MAL
S912XEG128J2VAA
S912XEG128J2VAAR
S912XEG128J2VAL
S912XEG128J2VALR
S912XEG128W1MAA
S912XEG128W1MAAR
S912XEG128W1MAL
S912XEG128W1MALR

S912XEG256J2CAA
S912XEG256J2CAAR
S912XEG256J2CAL
S912XEG256J2CALR
S912XEG256J2VAL
S912XEG256J2VALR
S912XET256J1MAA
S912XET256J1MAL
S912XET256J1MALR
S912XET256J1VAG
S912XET256J1VAGR
S912XET256J1VAL
S912XET256J2CAA
S912XET256J2CAAR
S912XET256J2CAG
S912XET256J2CAGR
S912XET256J2CAL
S912XET256J2CALR
S912XET256J2MAA
S912XET256J2MAAR
S912XET256J2MAG
S912XET256J2MAGR
S912XET256J2MAL
S912XET256J2MALR
S912XET256J2VAA
S912XET256J2VAG
S912XET256J2VAGR
S912XET256J2VAL
S912XET256J2VALR
S912XET256W0MAA
S912XET256W0VAG
S912XET256W0VAL
S912XET256W1MAA
S912XET256W1MAAR
S912XET256W1MAG
S912XET256W1MAGR
S912XET256W1MAL
S912XET256W1MALR

AFFECTED CHANGE CATEGORIES

- FAB SITE

DESCRIPTION OF CHANGE

Freescall is announcing the introduction of Taiwan Semiconductor Manufacturing Company Fab 11 (TSMC11) Washington, USA as primary wafer manufacturing location for the S912XET256 and S912XEG128 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.

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 Freescall'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)

Wire composition is the only change to form. No Impact to fit or function. 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: 27-Apr-2013

QUALIFICATION STATUS: IN PROCESS

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	S912XETyyyJ1zAL/R	S912XETyyyW0zAL/R	S912XETyyyAzAL/R
	S912XETyyyJ2zAL/R	S912XETyyyW1zAL/R	S912XETyyyBzAL/R
	S912XEGyyyJ1zAL/R	S912XEGyyyW0zAL/R	S912XEGyyyAzAL/R
	S912XEGyyyJ2zAL/R	S912XEGyyyW1zAL/R	S912XEGyyyBzAL/R
144LQFP	S912XETyyyJ1zAG/R	S912XETyyyW0zAG/R	S912XETyyyAzAG/R
	S912XETyyyJ2z AG/R	S912XETyyyW1zAG/R	S912XETyyyBzAG/R
80QFP	S912XETyyyJ1zAG/R	S912XETyyyW0zAG/R	S912XETyyyAzAG/R
	S912XETyyyJ2z AG/R	S912XETyyyW1zAG/R	S912XETyyyBzAG/R

	S912XEGyyyJ1zAA/R	S912XEGyyyW0zAA/R	S912XEGyyyAzAA/R
	S912XEGyyyJ2zAA/R	S912XEGyyyW1zAA/R	S912XEGyyyBzAA/R
	S912XEAyyyJ1zAA/R	S912XEAyyyW0zAA/R	S912XEAyyyAzAA/R
	S912XEAyyyJ2zAA/R	S912XEAyyyW1zAA/R	S912XEAyyyBzAA/R
yyy = Flash memory size (256K, 128K) z = Temp range (M, V, C)	J = TSMC3 1 = firmware rev. A 2 = 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)

Example	Current TSMC3 PNs	TSMC11 PNs	Flex PNs (TSMC3 and TSMC11)
112LQFP	S912XET256J2MALR	S912XET256W1MALR	S912XET256BMALR
144LQFP	S912XET256J2MAGR	S912XET256W1MAGR	S912XET256BMAGR
80QFP	S912XET256J2MAAR	S912XET256W1MAAR	S912XET256BMAAR

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: 26-Jul-2013

ATTACHMENT(S):

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

[15407 ED Cu wire vs Gold.pdf](#)

[15407 Qualification Report 144LQFP 80QFP ED Fab Transfer.pdf](#)