



**PRODUCT AND PROCESS CHANGE NOTIFICATION UPDATE**  
Generic Copy

**ISSUE DATE:** 08-Oct-2013  
**NOTIFICATION:** 15318B  
**TITLE:** 9S12XE512 144LQFP Assembly Expansion from FSL-KLM-FM to Advanced Semiconductor Engineering Chung Li (ASE CL), Taiwan Facility  
**EFFECTIVE DATE:** 06-Apr-2014

**DEVICE(S)**

MPN
MC9S12XEQ384CAG
MC9S12XEQ384MAG
MC9S12XEQ512CAG
MC9S12XEQ512CAGR
MC9S12XEQ512MAG
S912XEG384AVAG
S912XEG384AVAGR
S912XEG384BCAG
S912XEG384BCAGR
S912XEG384F1VAG
S912XEG384J2VAG
S912XEG384J2VAGR
S912XEG384J3CAG
S912XEG384J3CAGR
S912XEG384J3VAG
S912XEG384J3VAGR
S912XEQ384BCAG
S912XEQ384BCAGR
S912XEQ384F1CAG
S912XEQ384F1CAGR
S912XEQ384F1MAG
S912XEQ384F1MAGR
S912XEQ384F1VAG
S912XEQ384F1VAGR
S912XEQ384J2MAG
S912XEQ384J3CAG
S912XEQ384J3CAGR
S912XEQ384J3MAG
S912XEQ384J3MAGR
S912XEQ384J3VAG
S912XEQ384J3VAGR
S912XEQ512BCAG

S912XEQ512BCAGR
S912XEQ512BVAG
S912XEQ512BVAGR
S912XEQ512F0MAG
S912XEQ512F1MAG
S912XEQ512F1MAGR
S912XEQ512F1VAG
S912XEQ512F1VAGR
S912XEQ512J2CAG
S912XEQ512J2MAG
S912XEQ512J2VAG
S912XEQ512J3CAG
S912XEQ512J3CAGR
S912XEQ512J3MAG
S912XEQ512J3MAGR
S912XEQ512J3VAG
S912XEQ512J3VAGR
S912XES384J3VAG
S912XES384J3VAGR
S912XET512AVAG
S912XET512AVAGR
S912XET512BCAG
S912XET512BCAGR
S912XET512BMAG
S912XET512BMAGR
S912XET512BVAG
S912XET512BVAGR
S912XET512J2VAG
S912XET512J2VAGR
S912XET512J3MAG
S912XET512J3MAGR
S912XET512J3VAG
S912XET512J3VAGR

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### **AFFECTED CHANGE CATEGORIES**

- ASSEMBLY SITE

### **DESCRIPTION OF CHANGE**

#### 15318B Notification

This notification is an update to GPCN 15318/A (9S12XE512 Fab expansion to FSL-ATMC-for 80/112/144LQFP) to announce the successful qualification of Advanced Semiconductor Engineering Chung Li (ASE CL), Taiwan as an assembly site for 144LQFP.

15318A Notification

As previously announced, an update notification would be issued upon successful completion of the 9S12XE (0/1M12S) 80QFP qualification at the Freescale Austin Technology Manufacturing Center (ATMC), Austin, United States. Qualification at ATMC has now completed for the 9S12XE (0/1M12S) 80QFP and results are attached. An update to the results provided in notification 15318 for the ATMC qualification of 9S12XE (0/1M12S) for 112LQFP and 144LQFP are also included to provide clarification and additional detail.

Table below provides sample part numbers. Please place sample orders by 20 October 2012.

Package	ATMC Sample Part Numbers	TSMC3 Equivalent	
80QFP	P912EXQ512F1MAA/R	S912XE <i>xyyy</i> J3zAA/R	<i>x</i> = Q or G or S <i>yyyy</i> = Flash memory size (512, 384) <i>z</i> = Temp range (M, V, C)
112LQFP	P912XEQ512F0MAL/R	S912XE <i>xyyy</i> J2zAL/R	
	P912XEQ512F1MAL/R	S912XE <i>xyyy</i> J3 zAL/R	
144LQFP	P912XEQ512F0MAG/R	S912XE <i>xyyy</i> J2zAG/R	
	P912XEQ512F1MAG/R	S912XE <i>x yyy</i> J3 z AG/R	

15318 Notification

Freescale is pleased to announce the successful completion of the 9S12XE (0/1M12S) qualification at the Freescale Austin Technology Manufacturing Center (ATMC), Austin, United States for 112LQFP and 144LQFP. The 9S12XE (2/3M25J) is currently being manufactured in the Taiwan Semiconductor Manufacturing Company Fab 3 (TSMC3), Hsin-Chu, Taiwan.

An update to this notification containing qualification results will be issued upon successful completion of 9S12XE ATMC Qualification for 80QFP as well as qualification for Advanced Semiconductor Engineering Chung Li (ASE CL), Taiwan as an assembly site for 144LQFP.

Customers should begin placing orders under the flex part numbers with BOM containing both ATMC and TSMC material. For customers requiring single fab material, ATMC only part numbers are available.

Table below provides equivalent part numbers by Fab Site:

Package	Current TSMC3 PNs	ATMC PNs	Flex PNs (ATMC and TSMC3)
80QFP	S912XE <i>xyyy</i> J3zAA/R	S912XE <i>xyyy</i> F1zAA/R	S912XE <i>xyyy</i> BzAA/R
112LQFP	S912XE <i>xyyy</i> J2zAL/R	S912XE <i>xyyy</i> F0zAL/R	S912XE <i>xyyy</i> AzAL/R
	S912XE <i>xyyy</i> J3 zAL/R	S912XE <i>xyyy</i> F1 zAL/R	S912XE <i>xyyy</i> B zAL/R
144LQFP	S912XE <i>xyyy</i> J2zAG/R	S912XE <i>xyyy</i> F0zAG/R	S912XE <i>xyyy</i> AzAG/R
	S912XE <i>x yyy</i> J3 z AG/R	S912XE <i>x yyy</i> F1 z AG/R	S912XE <i>x yyy</i> B z AG/R
<i>x</i> = Q or G or S <i>yyyy</i> = Flash memory size (512, 384) <i>z</i> = Temp range (M, V, C)	J = TSMC3 2=firmware rev. A 3=firmware rev. B (EEE brownout fix)	F = ATMC 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	ATMC PNs	Flex PNs (AMTC and TSMC3)
80QFP	S912XEQ512J3MAAR	S912XEQ512F1MAAR	S912XEQ512BMAAR
112LQFP	S912XEQ512J3MALR	S912XEQ512F1MALR	S912XEQ512BMALR

144LQFP | S912XEQ384J3VAGR | S912XEQ384F1VAGR | S912XEQ384BVAGR

Table below provides sample part numbers. Please place sample orders by 20 October 2012.

Package	ATMC Sample Part Numbers	TSMC3 Equivalent	
80QFP	P912EXQ512F1MAA/R	S912XE xyyy J3zAA/R	x = Q or G or S yyy = Flash memory size (512, 384) z = Temp range (M, V, C)
112LQFP	P912XEQ512F0MAL/R	S912XE xyyyJ2zAL/R	
	P912XEQ512F1MAL/R	S912XE xyyyJ3 zAL/R	
144LQFP	P912XEQ512F0MAG/R	S912XE xyyyJ2zAG/R	
	P912XEQ512F1MAG/R	S912XE x yyy J3 z AG/R	

## **REASON FOR CHANGE**

### 15318B Notification

Qualification of Advanced Semiconductor Engineering Chung Li (ASE CL), Taiwan, assembly Facility to improve manufacturing flexibility and customer support.

### 15318/A Notification

The Fab manufacturing site capacity expansion to Freescale Austin Technology Manufacturing Center (ATMC), United States will improve Freescales ability to meet customer demand.

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

There is no impact on device form, fit, function or reliability.

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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](http://www.freescale.com)

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## **RELATED NOTIFICATION(S):**

[15318A](#) - 9S12XE512 FAB EXPANSION TO FSL-ATMC FOR 80QFP (with updated Qualification Report for 144LQFP, 112LQFP)

[15318](#) - 9S12XE512 FAB EXPANSION TO FSL-ATMC FOR 144 AND 112LQFP (Pre Alert for 80QFP Qualification)

TO VIEW the GENERIC copy, click on the notification number above.

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**QUAL DATA AVAILABILITY DATE:** 01-Aug-2012

**QUALIFICATION STATUS:** COMPLETED

**QUALIFICATION PLAN:**

Freescale Semiconductor Transfer/Expansion of Qualified Processes specification for Fab Qualification was followed.

**RELIABILITY DATA SUMMARY:**

See attached report

**ELECTRICAL CHARACTERISTIC SUMMARY:**

No change was made to the operating performance of the device. Electrical characterization of the device is enclosed.

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**CHANGED PART IDENTIFICATION:**

15318/B Notification

The assembly site, among other information, is reflected in the package trace code. The format for the Freescale standard trace code: AWLYYWW is the following:

A=Assembly Site, WL=Wafer Lot, YY=Year, WW=Work Week.

The current assembly site marking for site 1 FSL-TJN-FM is A=CT.  
The marking for proposed assembly site 2 ASECL is A=X.

15318/A Notification

Auto "S" part numbers will change to reflect ATMC Fab and new mask set revision, i.e. "F0/F1".

"MC" part numbers will not change.

**SAMPLE AVAILABILITY DATE:** 03-Aug-2012

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**ATTACHMENT(S):**

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

[15318B Flipper Sailfish Cu vs Gold with Flipper ATMCvsTSMC v6 PPAP ED Report.pdf](#)  
[15318B\\_15318B\\_Qualification\\_Report\\_for\\_PCN15318A\\_Updated\\_with ASECL Assy Site.pdf](#)

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