



PRODUCT AND PROCESS CHANGE NOTIFICATION UPDATE

Generic Copy

ISSUE DATE: 22-Oct-2013
NOTIFICATION: 15824A
TITLE: S12XS/XE/HY/P/XHA CU WIRE & LEAD FRAME QUAL FOR 80QFP & 100/112/144LQFP. ASE CL ASSEMBLY EXPANSION for S12XEx512/384-144LQFP
EFFECTIVE DATE: 20-Jan-2014

DEVICE(S)

MPN
MC9S12XEQ384CAG
MC9S12XEQ384CAL
MC9S12XEQ384MAG
MC9S12XEQ384MAL
MC9S12XEQ512CAG
MC9S12XEQ512CAGR
MC9S12XEQ512CAL
MC9S12XEQ512MAG
MC9S12XEQ512MAL
S912XEG384AVAG
S912XEG384AVAGR
S912XEG384BCAG
S912XEG384BCAGR
S912XEG384BCAL
S912XEG384BCALR
S912XEG384BMAL
S912XEG384BMALR
S912XEG384BVAL
S912XEG384BVALR
S912XEG384F0CAL
S912XEG384F0CALR
S912XEG384F0VAL
S912XEG384F1CAL
S912XEG384F1CALR
S912XEG384F1VAG
S912XEG384J2CAL

S912XEG384J2CALR
S912XEG384J2VAG
S912XEG384J2VAGR
S912XEG384J2VAL
S912XEG384J3CAG
S912XEG384J3CAGR
S912XEG384J3CAL
S912XEG384J3CALR
S912XEG384J3VAG
S912XEG384J3VAGR
S912XEG384J3VAL
S912XEG384J3VALR
S912XEQ384ACAL
S912XEQ384AMAL
S912XEQ384AMALR
S912XEQ384BCAG
S912XEQ384BCAGR
S912XEQ384BMAL
S912XEQ384BMALR
S912XEQ384BVAL
S912XEQ384BVALR
S912XEQ384F0CAL
S912XEQ384F0CALR
S912XEQ384F1CAG
S912XEQ384F1CAGR
S912XEQ384F1CAL
S912XEQ384F1CALR
S912XEQ384F1MAG
S912XEQ384F1MAGR
S912XEQ384F1MAL
S912XEQ384F1MALR
S912XEQ384F1VAG
S912XEQ384F1VAGR
S912XEQ384F1VAL
S912XEQ384F1VALR
S912XEQ384J2CAL
S912XEQ384J2MAG
S912XEQ384J2MAL
S912XEQ384J2MALR

S912XEQ384J3CAG
S912XEQ384J3CAGR
S912XEQ384J3CAL
S912XEQ384J3CALR
S912XEQ384J3MAG
S912XEQ384J3MAGR
S912XEQ384J3MAL
S912XEQ384J3MALR
S912XEQ384J3VAG
S912XEQ384J3VAGR
S912XEQ384J3VAL
S912XEQ384J3VALR
S912XEQ512ACAL
S912XEQ512ACALR
S912XEQ512AMAL
S912XEQ512AMALR
S912XEQ512AVAL
S912XEQ512AVALR
S912XEQ512BCAG
S912XEQ512BCAGR
S912XEQ512BCAL
S912XEQ512BMAL
S912XEQ512BMALR
S912XEQ512BVAG
S912XEQ512BVAGR
S912XEQ512BVAL
S912XEQ512BVALR
S912XEQ512F0CAL
S912XEQ512F0CALR
S912XEQ512F0MAG
S912XEQ512F0MAL
S912XEQ512F0MALR
S912XEQ512F0VAL
S912XEQ512F1MAG
S912XEQ512F1MAGR
S912XEQ512F1MAL
S912XEQ512F1MALR
S912XEQ512F1VAG
S912XEQ512F1VAGR

S912XEQ512F1VAL
S912XEQ512F1VALR
S912XEQ512J2CAG
S912XEQ512J2CAL
S912XEQ512J2CALR
S912XEQ512J2MAG
S912XEQ512J2MAL
S912XEQ512J2MALR
S912XEQ512J2VAG
S912XEQ512J2VAL
S912XEQ512J3CAG
S912XEQ512J3CAGR
S912XEQ512J3CAL
S912XEQ512J3CALR
S912XEQ512J3MAG
S912XEQ512J3MAGR
S912XEQ512J3MAL
S912XEQ512J3MALR
S912XEQ512J3VAG
S912XEQ512J3VAGR
S912XEQ512J3VAL
S912XEQ512J3VALR
S912XES384J3VAG
S912XES384J3VAGR
S912XES384J3VAL
S912XET512AVAG
S912XET512AVAGR
S912XET512BCAG
S912XET512BCAGR
S912XET512BMAG
S912XET512BMAGR
S912XET512BVAG
S912XET512BVAGR
S912XET512BVAL
S912XET512BVALR
S912XET512F1VAL
S912XET512F1VALR
S912XET512J2VAG
S912XET512J2VAGR

S912XET512J3CAL
S912XET512J3MAG
S912XET512J3MAGR
S912XET512J3VAG
S912XET512J3VAGR
S912XET512J3VAL
S912XET512J3VALR
SC667324VAL
SC667324VALR

AFFECTED CHANGE CATEGORIES

- ASSEMBLY PROCESS

- NEW PIECE PARTS AND/OR COMPONENT SUPPLIER

DESCRIPTION OF CHANGE

Update 15824A Notification

This notification is an update to GPCN 15824 to announce:

1. The successful qualification of Advanced Semiconductor Engineering Chung Li (ASE CL), Taiwan as an assembly site for S12XEx512/384 for 144LQFP.

2. The addition of S12XEx512/384 for 112LQFP and 144LQFP into GPCN15824.

3. The removal of S12XEx512/384 for 112LQFP and 144LQFP from GPCN 15862 via GPCN15862A.

Original 15824 Notification

Freescale Semiconductor announces the addition of Copper Wire as a wirebond material for the following product:

1. S12XHY128/256 for 100/112LQFP products currently assembled with Gold wire at Freescale KLM assembly site, Kuala Lumpur, Malaysia

2. S12HY32/48/64 and S12HA32/48/64 for 100LQFP products currently assembled with Gold wire at Freescale KLM assembly site, Kuala Lumpur, Malaysia

3. S12XEQ512 and S12XE/G/T 384 for 80QFP and 112/144LQFP products currently assembled with Gold wire at Freescale KLM assembly site, Kuala Lumpur, Malaysia.

4. S12P128/96/64/32 and S12XS256/128/64 for 80QFP products currently assembled with Gold wire at Freescale KLM assembly site, Kuala Lumpur, Malaysia.

The Wire diameter for Gold Wire and Copper Wire will remain at 25um

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. Note that there is no electrical connection to the flag.

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 Cu (Copper) wire.

80QFP/100LQFP/112LQFP/144LQFP Package

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

REASON FOR CHANGE

Update 15824A Notification

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

15824 Notification

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

This leadframe flag change enables a robust Cu wirebond process.

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

Wire composition and leadframe flag type are 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

RELATED NOTIFICATION(S):

[15824](#) - S12XS/XE/HY/P/XHA Cu Wire & Lead Frame Qualification for 80QFP & 100/112/144LQFP

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

QUAL DATA AVAILABILITY DATE: 29-Mar-2013

QUALIFICATION STATUS: COMPLETED

QUALIFICATION PLAN:

See attached qualification results.

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:**Update 15824A 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-KLM-FM is A=Q

The marking for proposed assembly site 2 ASECL is A=X

15824 Notification

There is no change to orderable part number. The Tracecode marking on the device includes assembly site and datecode. Freescale will have traceability by assembly site and datecode.

SAMPLE AVAILABILITY DATE: 03-Sep-2013

ATTACHMENT(S):

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

[15824A 15824A -0 18um ATMC TSMC KLM Cu Wire Qualification Results.pdf](#)

[15824A Jellyfish Flipper Seawasp Cu vs Gold Electrical Distribution Report 20130820.pdf](#)
