



PRODUCT AND PROCESS CHANGE NOTIFICATION

Generic Copy

ISSUE DATE: 09-Jun-2014
NOTIFICATION: 16253
TITLE: 0.25um ATMC and TSMCFAB3/11 KLM QFP Copper Wire and Leadframe Flag Conversion Qualification
EFFECTIVE DATE: 09-Dec-2014

DEVICE(S)

MPN
MC9S12B128CFUE
MC9S12B128CPVE
MC9S12B128MFUE
MC9S12B128VPVE
MC9S12B64CFUE
MC9S12B64CPVE
MC9S12B64MPVE
MC9S12H128VFVE
MC9S12H128VPVE
MC9S12H256VFVE
MC9S12H256VFVER
MC9S12H256VPVE
MC9S12HZ128CAL
MC9S12HZ128VAL
MC9S12HZ256CAL
MC9S12HZ256VAL
MC9S12XB128MAA
MC9S12XD128MAL
MC9S12XD64CAA
MC9S12XD64MAA
MC9S12XDG128CAA
MC9S12XDG128CAL
MC9S12XDG128MAA
MC9S12XDG128MAL
MC9S12XHZ256CAG
MC9S12XHZ256CAL
MC9S12XHZ256VAG
MC9S12XHZ512CAG

MC9S12XHZ512CAL
S912XB128F2CAL
S912XB128F2CALR
S912XB256F1CAL
S912XB256F1CALR
S912XD128F2CAA
S912XD128F2CAAR
S912XD128F2CAL
S912XD128F2CALR
S912XD128F2MAA
S912XD128F2MAL
S912XD128F2VAA
S912XD128F2VAAR
S912XD128F2VAL
S912XD128F2VALR
S912XD256F1CAA
S912XD256F1CAAR
S912XD256F1CAG
S912XD256F1CAGR
S912XD256F1CAL
S912XD256F1CALR
S912XD256F1MAA
S912XD256F1MAAR
S912XD256F1MAG
S912XD256F1MAL
S912XD256F1MALR
S912XD256F1VAA
S912XD256F1VAAR
S912XD256F1VAG
S912XD256F1VAGR
S912XD256F1VAL
S912XD256F1VALR
S912XD64F2CAA
S912XD64F2CAAR
S912XD64F2MAA
S912XD64F2VAA
S912XD64F2VAAR
S912XDG128F2CAA
S912XDG128F2CAAR

S912XDG128F2MAA
S912XDG128F2MAAR
S912XDG128F2MAL
S912XDG128F2MALR
S912XDG128F2VAA
S912XDG128F2VAAR
S912XDG128F2VAL
S912XDG256F1CAL
S912XDG256F1CALR
S912XDG256F1MAA
S912XDG256F1MAAR
S912XDG256F1MAG
S912XDG256F1MAGR
S912XDG256F1MAL
S912XDG256F1VAG
S912XDG256F1VAGR
S912XDG256F1VAL
S912XDG512F0CAG
S912XDG512J1CAG
S912XDG512J1CAGR
S912XDP512F0CAA
S912XDP512F0CAAR
S912XDP512F0CAG
S912XDP512F0CAGR
S912XDP512F0CAL
S912XDP512F0CALR
S912XDP512F0MAG
S912XDP512F0MAL
S912XDP512J0CAL
S912XDP512J0CALR
S912XDP512J0MAG
S912XDP512J0VAL
S912XDP512J1CAA
S912XDP512J1CAAR
S912XDP512J1CAG
S912XDP512J1CAGR
S912XDP512J1CAL
S912XDP512J1CALR
S912XDP512J1MAG

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S912XDP512J1MALR
S912XDP512J1VAG
S912XDP512J1VAGR
S912XDP512J1VAL
S912XDQ256F1MAL
S912XDQ256F1VAA
S912XDQ256F1VAL
S912XDQ256F1VALR
S912XDT256F1CAA
S912XDT256F1CAG
S912XDT256F1CAGR
S912XDT256F1CAL
S912XDT256F1MAA
S912XDT256F1MAG
S912XDT256F1MAL
S912XDT256F1MALR
S912XDT256F1VAA
S912XDT256F1VAL
S912XDT256F1VALR
S912XDT384F0CAA
S912XDT384F0CAAR
S912XDT384F0CAL
S912XDT384F0CALR
S912XDT384F0VAL
S912XDT384F0VALR
S912XDT384J0CAG
S912XDT384J0CAGR
S912XDT384J1CAA
S912XDT384J1CAAR
S912XDT384J1CAG
S912XDT384J1CAL
S912XDT384J1CALR
S912XDT384J1MAG
S912XDT384J1MAL
S912XDT384J1MALR
S912XDT384J1VAL
S912XDT384J1VALR
S912XDT512F0CAG

S912XDT512F0CAGR
S912XDT512J1CAA
S912XDT512J1CAG
S912XDT512J1CAGR
S912XDT512J1CAL
S912XDT512J1MAA
S912XDT512J1VAA
S912XDT512J1VAAR
S912XDT512J1VAG
S912XDT512J1VAGR
S912XHZ256F1CAG
S912XHZ256F1MAG
S912XHZ256F1VAG
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S912XHZ256F1VAL
S912XHZ256F1VALR
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S912XHZ384F1VAG
S912XHZ384F1VAL
S912XHZ384F1VALR
S912XHZ512F1CAG
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S912XHZ512F1VAG
S912XHZ512F1VAL
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S9S12B256F0VPVER
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S9S12B96F0CFUER
S9S12B96F0CPVE
S9S12B96F0CPVER
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S9S12C128F0VFUE
S9S12C128F0VFUER
S9S12C128J2CFUE
S9S12C128J2CFUER
S9S12C128J2VFUE
S9S12C128J2VFUER
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S9S12C32F1CFUE1R

S9S12C64F0CFUER
S9S12C64F0VFUE
S9S12C64F0VFUER
S9S12C64J2MFUE
S9S12C64J2VFUE
S9S12C64J2VFUER
S9S12C96F0CFUE
S9S12C96F0CFUER
S9S12C96F0MFUE
S9S12C96F0MFUER
S9S12C96F0VFUE
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S9S12C96J2CFUER
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S9S12D32F0MFUE
S9S12D64F0CFUE
S9S12D64F0CFUER
S9S12D64F0CPVE
S9S12D64F0CPVER
S9S12D64F0MFUE
S9S12D64F0MFUER
S9S12D64F0MPVE
S9S12D64F0MPVER
S9S12D64F0VFUE
S9S12D64F0VFUER
S9S12D64F0VPVE
S9S12D64F0VPVER
S9S12D64J4CFUE
S9S12D64J4CFUER
S9S12D64J4VFUE
S9S12D64J4VFUER
S9S12DB12F1CPVE
S9S12DB12F1CPVER
S9S12DB12F1MPVE
S9S12DB12F1MPVER
S9S12DB12F1VPVE
S9S12DB12F1VPVER
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S9S12DG12F1CFUER

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S9S12DG12F1MFUER
S9S12DG12F1MPVE
S9S12DG12F1MPVER
S9S12DG12F1VFUE
S9S12DG12F1VFUER
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S9S12DG12F1VPVER
S9S12DG12J5CFUE
S9S12DG12J5CFUER
S9S12DG12J5CPVE
S9S12DG12J5CPVER
S9S12DG12J5MPVE
S9S12DG12J5VPVE
S9S12DG12J5VPVER
S9S12DG12W2CPVE
S9S12DG25F0CFUE
S9S12DG25F0CFUER
S9S12DG25F0CPVE
S9S12DG25F0CPVER
S9S12DG25F0MFUE
S9S12DG25F0MFUER
S9S12DG25F0MPVE
S9S12DG25F0MPVER
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S9S12DG25F0VFUER
S9S12DG25F0VPVE
S9S12DG25F0VPVER
S9S12DG25J4CPVE
S9S12DG25J4CPVER
S9S12DG25J4VPVE
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S9S12DJ64F0CFUER
S9S12DJ64F0CPVE
S9S12DJ64F0CPVER
S9S12DT12F1CPVE
S9S12DT12F1CPVER
S9S12DT12F1MPVE
S9S12DT12F1MPVER
S9S12DT25F0CFUE
S9S12DT25F0CFUER
S9S12DT25F0CPVE
S9S12DT25F0CPVER
S9S12DT25F0MPVE
S9S12DT25F0MPVER
S9S12DT25J4MPVE
S9S12DT25J4MPVER
S9S12DT25J4VPVE
S9S12DT25J4VPVER
S9S12GC32F1CFUE
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S9S12H128J1VFVER
S9S12H128J1VPVE
S9S12H128J1VPVER
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S9S12H128J2VFVER
S9S12H256J1VFVE
S9S12H256J1VFVER
S9S12H256J1VPVE
S9S12H256J1VPVER
S9S12H256J2CFVE
S9S12H256J2VFVE
S9S12H256J2VFVER
S9S12HN64J3VAA
S9S12HZ128J3CAL
S9S12HZ128J3VAL
S9S12HZ128J3VALR
S9S12HZ256J3CAL

S9S12HZ256J3VALR
S9S12HZ64J3CAA
S9S12HZ64J3CAL
S9S12HZ64J3VAL
S9S12HZ64J3VALR
S9S12KG12J5CFUE
S9S12KG12J5CFUER
S9S12KG12J5VPVE
S9S12KG12J5VPVER
S9S12KG25J2MPVE
S9S12KG25J2MPVER
S9S12Q12F0MFUE1
S9S12Q12F0MFUE1R
S9S12Q12F0VFUE1
S9S12Q12F0VFUE1R
S9S12Q12J2VFUE1
S9S12Q12J2VFUE1R
SC515840CFU

AFFECTED CHANGE CATEGORIES

- BILL OF MATERIAL CHANGE (SAME ASSEMBLY SITE)

DESCRIPTION OF CHANGE

Freescall Semiconductor announces the addition of Copper Wire as a wirebond material for the ATMC & TSMCFAB3/11 0.25um devices listed in this PCN.

FAB SITE	ASSY SITE	WIRE		LEADFRAME		DIE ATTACH	
		Original	New	Original	New	Original	New
ATMC	FSL-KLM	Au 25um	Cu 23um	X-Flag	Solid-Flag	Ablebond 8290 (Ablestik/Henkel)	CRM1064MBL (Sumitomo)
TSMCFAB3/11	FSL-KLM	Au 25um	Cu 23um	X-Flag	Solid-Flag	Ablebond 8290 (Ablestik/Henkel)	CRM1064MBL (Sumitomo)

Devices using an X-flag leadframe and Ablebond 8290 (Ablestik/Henkel) die attach material will standardize using a solid-flag leadframe and CRM1064MBL (Sumitomo) die attach material. The change to Copper Wire also includes a change in wire diameter. There is no change to mold compound.

These devices are assembled in Freescale KLM assembly site, Kuala Lumpur, Malaysia.

REASON FOR CHANGE

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

The leadframe flag and die attach material change enables standardization and a robust Cu wirebond process.

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

Wire composition, die attach material, and Leadframe flag type are the only change to form. No Impact to fit or function. Reliability is equivalent or improved.

According to JEDEC Standard JESD46, lack of acknowledgement of this PCN within 30 days will be considered acceptance of change. 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: 12-May-2014

QUALIFICATION STATUS: COMPLETED

QUALIFICATION PLAN:

See attached qualification results.

RELIABILITY DATA SUMMARY:

See attached qualification results.

ELECTRICAL CHARACTERISTIC SUMMARY:

No change to datasheet. Electrical Distribution comparison, Gold wire versus Copper wire included in this notification. Result shows no difference in Electrical Distributions.

CHANGED PART IDENTIFICATION:

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.

The table below provides sample part numbers:

LPN	Au Part Number	Cu Part Number	Package	Fab
Bluefin	S912XDP512F0CAL/R	K912XDP512F0VAL/R	LQFP 112 20*20*1.4P0.65	ATMC
Bluefin	S912XDP512J1MAL/R	K912XDP512J1MAL/R	LQFP 112 20*20*1.4P0.65	TSMC3
Bluefin	S912XDP512J1VAG/R	K912XDP512J1VAG/R	LQFP 144 20*20*1.4P0.5	TSMC3
Bluefin	S912XDT512F0CAGR	K912XDT512F0CAGR	LQFP 144 20*20*1.4P0.5	ATMC
Bluefin	S912XDP512F0CAAR	K912XDP512F0CAAR	QFP 80 14*14*2.2P0.65	ATMC
Bluefin	S912XDP512J1CAA/R	K912XDP512J1CAA/R	QFP 80 14*14*2.2P0.65	TSMC3
Yellowfin	S912XDT256F1MAL/R	K912XDT256F1MAL/R	LQFP 112 20*20*1.4P0.65	ATMC
Yellowfin	S912XD256F1VAG/R	K912XD256F1VAG/R	LQFP 144 20*20*1.4P0.5	ATMC
Yellowfin	S912XDT256F1MAG/R	K912XDT256F1MAG/R	LQFP 144 20*20*1.4P0.5	ATMC
Yellowfin	S912XD256F1VAA/R	K912XD256F1VAA/R	QFP 80 14*14*2.2P0.65	ATMC
Yellowfin	S912XDG256F1MAA/R	K912XDG256F1MAA/R	QFP 80 14*14*2.2P0.65	ATMC
Bonito	S912XD128F2VAL/R	K912XD128F2VAL/R	LQFP 112 20*20*1.4P0.65	ATMC
Bonito	S912XDG128F2MAL	K912XDG128F2MAL	LQFP 112 20*20*1.4P0.65	ATMC
Bonito	SP121003MALR	KP121003MALR	LQFP 112 20*20*1.4P0.65	ATMC
Bonito	S912XD128F2MAA/R	K912XD128F2MAA/R	QFP 80 14*14*2.2P0.65	ATMC
Bonito	S912XD64F2MAA/R	K912XD64F2MAA/R	QFP 80 14*14*2.2P0.65	ATMC
Bonito	S912XDG128F2CAA/R	K912XDG128F2CAA/R	QFP 80 14*14*2.2P0.65	ATMC
Bonito	S912XDG128F2MAA/R	K912XDG128F2MAA/R	QFP 80 14*14*2.2P0.65	ATMC
Razorfish	S912XHZ512F1VALR	K912XHZ512F1VALR	LQFP 112 20*20*1.4P0.65	ATMC
Razorfish	S912XHZ256F1VAG/R	K912XHZ256F1VAG/R	LQFP 144 20*20*1.4P0.5	ATMC
Razorfish	S912XHZ512F1VAG	K912XHZ512F1VAG	LQFP 144 20*20*1.4P0.5	ATMC
Barracuda4	S9S12B256F0VPVER	K9S12B256F0VPVER	LQFP 112 20*20*1.4P0.65	ATMC
Barracuda4	S9S12DG25F0MPVE/R	K9S12DG25F0MPVE/R	LQFP 112 20*20*1.4P0.65	ATMC
Barracuda4	S9S12DG25F0VPVE/R	K9S12DG25F0VPVE/R	LQFP 112 20*20*1.4P0.65	ATMC

Barracuda4	S9S12DT25J4MPVER	K9S12DT25J4MPVER	LQFP 112 20*20*1.4P0.65	TSMC3
Barracuda4	S9S12DG25F0MFUE/R	K9S12DG25F0MFUE/R	QFP 80 14*14*2.2P0.65	ATMC
Barracuda4	S9S12DG25F0VFUE/R	K9S12DG25F0VFUE/R	QFP 80 14*14*2.2P0.65	ATMC
Barracuda4	S9S12DJ25F0MFUER	K9S12DJ25F0MFUER	QFP 80 14*14*2.2P0.65	ATMC
Barracuda4	S9S12DT25F0CFUER	K9S12DT25F0CFUER	QFP 80 14*14*2.2P0.65	ATMC
Marlin2	S9S12DB12F1MPVE/R	K9S12DB12F1MPVE/R	LQFP 112 20*20*1.4P0.65	ATMC
Marlin2	S9S12DG12F1MPVE/R	K9S12DG12F1MPVE/R	LQFP 112 20*20*1.4P0.65	ATMC
Marlin2	S9S12DG12F1VPVE/R	K9S12DG12F1VPVE/R	LQFP 112 20*20*1.4P0.65	ATMC
Marlin2	S9S12DT12F1MPVE/R	K9S12DT12F1MPVE/R	LQFP 112 20*20*1.4P0.65	ATMC
Marlin2	SP101182VPVER	KP101182VPVER	LQFP 112 20*20*1.4P0.65	ATMC
Marlin2	SP114528CPVER	KP114528CPVER	LQFP 112 20*20*1.4P0.65	ATMC
Marlin2	S9S12DG12F1MFUE/R	K9S12DG12F1MFUE/R	QFP 80 14*14*2.2P0.65	ATMC
Marlin2	S9S12DG12F1VFUE/R	K9S12DG12F1VFUE/R	QFP 80 14*14*2.2P0.65	ATMC
Marlin2	S9S12DG12J5CFUER	K9S12DG12J5CFUER	QFP 80 14*14*2.2P0.65	TSMC3
Marlin2	S9S12DG12W2CPVE	K9S12DG12W2CPVE	LQFP 112 20*20*1.4P0.65	TSMC11
Goldfish	S9S12GC32F1CFUE	K9S12GC32F1CFUE	QFP 80 14*14*2.2P0.65	ATMC
Koi	S9S12C128F0VFUE/R	K9S12C128F0MFUE/R	QFP 80 14*14*2.2P0.65	ATMC
Koi	S9S12C128J2VFUE	K9S12C128J2VFUE	QFP 80 14*14*2.2P0.65	TSMC3
Koi	S9S12C64F0CFUER	K9S12C64F0CFUER	QFP 80 14*14*2.2P0.65	ATMC
Koi	S9S12Q12F0MFUE1R	K9S12Q12F0MFUE1R	QFP 80 14*14*2.2P0.65	ATMC
Koi	S9S12Q12J2VFUE1R	K9S12Q12J2VFUE1R	QFP 80 14*14*2.2P0.65	TSMC3
Lionfish	S9S12KG25J2MPVER	K9S12KG25J2MPVER	LQFP 112 20*20*1.4P0.65	TSMC3
Mako	S9S12H128J1VPVER	K9S12H128J1VPVER	LQFP 112 20*20*1.4P0.65	TSMC3
Mako	S9S12H128J2VFVE/R	K9S12H128J2VFVE/R	LQFP 144 20*20*1.4P0.5	TSMC3
Mako	S9S12H256J1VFVER	K9S12H256J1VFVER	LQFP 144 20*20*1.4P0.5	TSMC3
Sturgeon	S9S12B128F0MFUER	K9S12B128F0MFUER	QFP 80 14*14*2.2P0.65	ATMC
Sturgeon	S9S12B128J3MFUE/R	K9S12B128J3MFUE/R	QFP 80 14*14*2.2P0.65	TSMC3
Swordfish	S9S12HZ256J3VAL/R	K9S12HZ256J3VAL/R	LQFP 112 20*20*1.4P0.65	TSMC3
Swordfish	S9S12HZ64J3VAL/R	K9S12HZ64J3VAL/R	LQFP 112 20*20*1.4P0.65	TSMC3
Swordfish	SP113776VALR	KP113776VALR	LQFP 112 20*20*1.4P0.65	TSMC3
Torpedo	S9S12D64F0MFUE/R	K9S12D64F0MFUE/R	QFP 80 14*14*2.2P0.65	ATMC

Torpedo	S9S12D64J4VFUER	K9S12D64J4VFUER	QFP 80 14*14*2.2P0.65	TSMC3
Torpedo	S9S12D64F0MPVE/R	K9S12D64F0MPVE	LQFP 112 20*20*1.4P0.65	ATMC
S08LG32	S9S08LG32J0VLK	K9S08LG32J0VLK	LQFP 80 14*14*1.4P0.65	TSMC3
S908DZ128_Auto	S9S08DZ128F2VLL/R	K9S08DZ128F2VLL/R	LQFP 100 14*14*1.4P0.5	ATMC
S908DZ128_Auto	S9S08DZ128F2MLL/R	K9S08DZ128F2MLL/R	LQFP 100 14*14*1.4P0.5	ATMC

SAMPLE AVAILABILITY DATE: 12-Jun-2014

ATTACHMENT(S):

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

[16253_Bluefin_ATMC_Au_vs_Cu_Electrical_Distribution_Report_PCN16253.pdf](#)

[16253_Bluefin_TSMC_Au_vs_Cu_Electrical_Distribution_Report_PCN16253.pdf](#)

[16253_PCN16253_qualification_report_atmc.pdf](#)

[16253_PCN16253_qualification_report_tsmc.pdf](#)
