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Product Change Notification - JAON-04YDYB109

Date: 16 Feb 2015

Notification subject: CCB 1475 Initial Notice: Qualification of C194 lead-frame for selected QFN and UQFN packages at NSEB assembly site.

Notification text: **PCN Status:**
Initial notification

Microchip Parts Affected:

See attachments of affected catalog part numbers (CPN) labeled as...
PCN_JAON-04YDYB109_Affected_CPN.xls
PCN_JAON-04YDYB109_Affected_CPN.pdf

Description of Change:

Qualification of C194 lead-frame for 16L QFN (4x4x0.9mm), 16L QFN (3x3x0.9mm), 20L QFN (4x4x0.9mm), 28L QFN (6x6x0.9mm), 64L QFN (9x9x0.9mm), 28L UQFN (4x4x0.5mm) and 48L UQFN (6x6x0.5mm) packages at NSEB.

Pre Change:

EFTEC-64T lead frame

Post Change:

EFTEC-64T or C194 lead frame

Impacts to Data Sheet:

None

Reason for Change:

To improve on-time delivery performance by qualifying an additional lead frame material

Change Implementation Status:

In Progress

Estimated First Ship Date:

April 30, 2015 (date code: 1518)

NOTE: Please be advised that after the estimated first ship date customers may receive pre and post change parts.

Markings to Distinguish Revised from Unrevised Devices:

Traceability code

Revision History:

February 16, 2015: Issued initial notification.

The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.

Attachment(s): [PCN_JAON-04YDYB109_Qual_Plan.pdf](#)
[PCN_JAON-04YDYB109_Affected_CPN.pdf](#)
[PCN_JAON-04YDYB109_Affected_CPN.xls](#)

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Shanghai ICP Recordal No.09049794

PCN_JAON-04YDYB109
CATALOG_PART_NBR
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AR1010T-I/ML
AR1011-I/ML
AR1011T-I/ML
AR1020-I/ML
AR1020T-I/ML
AR1021-I/ML
AR1021T-I/ML
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SSC7150-ML-AB0



MICROCHIP

QUALIFICATION PLAN

PCN #: JAON-04YDYB109

**Date:
January 28, 2015**

Qualification of C194 lead-frame for 64L QFN (9x9x0.9mm) package at NSEB. The 16L QFN (4x4x0.9mm), 16L QFN (3x3x0.9mm), 20L QFN (4x4x0.9mm), 28L QFN (6x6x0.9mm), 28L UQFN (4x4x0.5mm) and 48L UQFN (6x6x0.5mm) packages will qualify by similarity.

Distribution

Surasit P.	Greg P
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Mitch R	Irina K
Maitree Y	Supakorn L
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Jeffrey J	Marco Ho
Rhoderick O	Fannie Lin

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Fax (6638) 857149-50

Purpose: _____ Qualification of C194 lead-frame for 64L QFN (9x9x0.9mm) package at NSEB. The 16L QFN (4x4x0.9mm), 16L QFN (3x3x0.9mm), 20L QFN (4x4x0.9mm), 28L QFN (6x6x0.9mm), 28L UQFN (4x4x0.5mm) and 48L UQFN (6x6x0.5mm) packages will qualify by similarity.

MP code: _____ WAAA17R4XEEL

Part No.: _____ PIC32MZ2048ECH064-I/MR

BD No: _____ BDM-000710 Rev.A

CCB No.: _____ 1475

Package:

Type _____ 64L QFN

Width or Size _____ 9x9x0.9 mm

Die thickness: _____ 11 mils

Die size: _____ 217.7 x 228.9 mils

MSL: _____ MSL1 @260C

Lead frame:

Paddle size: _____ 311 x 311 mils

Material _____ C194

Surface _____ Copper (Ag ring)

Treatment _____ Roughness

Process _____ Etched

Leadlock _____ Yes

Part Number _____ FR0991

Wire:

Material _____ Au

Manufacturer _____ TANAKA

Die Attach Epoxy:

Part Number _____ 8600

Conductive _____ Yes

Manufacturer _____ Ablestik (USA)

Mold Compound:

Part Number _____ G700LTD

Manufacturer _____ Sumitomo (Singapore)

Lead finish: _____ Matte Tin

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	Special Instructions
Standard Pb-free Solderability	JESD22B-102E; Perform 8 hour steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing. Standard Pb-free: Matte tin/ NiPdAu finish, SAC solder, wetting temp 245°C for both SMD & through hole packages.	22	5	1	27	> 95% lead coverage	5	Standard Pb-free solderability is the requirement. SnPb solderability (backward solderability- SMD reflow soldering) is required for any plating related changes and highly recommended for other package BOM changes.
Backward Solderability	JESD22B-102E; Perform 8 hours steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing. Backward: Matte tin/ NiPdAu finish, SnPb solder, wetting temp 215°C for SMD.	22	5	1	27	> 95% lead coverage	5	
Wire Bond Pull - WBP	Mil. Std. 883-2011	5	0	3	24	0 fails after TC	5	30 bonds from a minimum of 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	3	24	0	5	30 bonds from a minimum of 5 devices.
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5	
HTSL (High Temp Storage Life)	+175 C for 504 hours or 150°C for 1008 hrs. Electrical test pre and post stress at +25°C and hot temp (85°C)	45	5	1	50	0	10	Must be in progress at time of package release to production, but completion is not required for release to production.
Preconditioning - Required for surface mount devices	+150°C Bake for 24 hours, moisture loading requirements per MSL level + 3X reflow at peak reflow temperature per Jedec-STD-020D for package type; Electrical test pre and post stress at +25°C. Perform SAM analysis using the standard sample size. MSL1 @ 260°C	231	15	3	738	0	15	Spares should be properly identified. 77 parts from each lot to be used for HAST, Autoclave, Temp Cycle test.

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	Special Instructions
HAST	+130°C/85% RH for 96 hours or 110°C/85%RH for 264 hours. Electrical test pre and post stress at +25°C and hot temp (85°C)	77	5	3	246	0	10	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Unbiased HAST	+130°C/85% RH for 96 hrs or +110°C/85% RH for 264 hrs. Electrical test pre and post stress at +25°C	77	5	3	246	0	10	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	-65°C to +150°C for 500 cycles. Electrical test pre and post stress at hot temp (85°C); 3 gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress.	77	5	3	246	0	15	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.