

# Product Change Notification - JAON-04YDYB109

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**Date:** 20 Jul 2015

**Product Category:** Touch Sensing Technologies; 16-bit Microcontrollers and Digital Signal Controllers; Analog (Linear & Mixed Signal) AND Interface; Analog (Thermal, Power Management & Safety); SMSC; 8-bit Microcontrollers; 32-bit PIC Microcontrollers; Supertex

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

**Notification text:** **PCN Status:**

Final 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:**

August 3, 2015 (date code: 1532)

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.

**July 20, 2015:** Issued final notification. Attached the qualification report. Revised the estimated first ship date from April 30, 2015 to August 3, 2015.

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 Report.pdf](#) [PCN JAON-04YDYB109 Affected CPN.pdf](#) [PCN JAON-04YDYB109 Affected CPN.xls](#)

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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
SSC7150-ML-AB0-TR
HV2801K6-G
HV2901K6-G
HV7331K6-G



**MICROCHIP**

**QUALIFICATION REPORT  
RELIABILITY LABORATORY**

**PCN #: JAON-04YDYB109**

**Date  
June 25, 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.**

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## MICROCHIP PACKAGE QUALIFICATION REPORT

<b>Purpose</b>	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.
<b>CN</b>	BC150690
<b>QUAL ID</b>	Q15033
<b>MP CODE</b>	WAAA17R4XEEL
<b>Part No.</b>	PIC32MZ2048ECH064-I/MR
<b>Bonding No.</b>	BDM-000710 Rev. A
<b>CCB No.</b>	1475
<b><u>Package</u></b>	
<b>Type</b>	64L QFN
<b>Package size</b>	9x9x0.9 mm
<b>Die thickness</b>	11 mils
<b>Die size</b>	217.7 x 228.9 mils
<b><u>Lead Frame</u></b>	
<b>Paddle size</b>	311 x 311 mils
<b>Material</b>	C194
<b>Surface</b>	Copper (Ag ring)
<b>Process</b>	Etched
<b>Lead Lock</b>	Yes
<b>Part Number</b>	FR0991
<b>Treatment</b>	Roughness
<b><u>Die attach material</u></b>	
<b>Epoxy</b>	8600
<b>Wire</b>	Au wire
<b>Mold Compound</b>	G700LTD
<b>Plating Composition</b>	Matte Tin



# MICROCHIP PACKAGE QUALIFICATION REPORT

## Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
NSEB154700626.000	TC14915399790.110	1508JMM
NSEB154700627.000	TC14915399790.110	1508JMT
NSEB154700628.000	TC14915399790.110	1508JMU

**Result**       Pass       Fail       \_\_\_\_\_

64L QFN (9x9x0.9mm) assembled by UTL (NSEB) pass reliability test per QCI-39000. This package was qualified the Moisture/Reflow Sensitivity Classification Level 1 at 260°C reflow temperature per IPC/JEDEC J-STD-020D standard.

**Prepared By:**  **Date:** June 25, 2015 (Sr. Reliability Engineer)

(Mr. Udom Suksansakul)

**Approved By:**  **Date:** June 25, 2015 (Reliability Manager)

(Mr. Somnuek Thongprasert)



# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
<b>Moisture/Reflow Sensitivity Classification Test (At MSL Level 1)</b>	85°C/ 85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243  ( IPC/JEDEC J-STD-020D)	IPC/JEDEC C J-STD- 020D	135	0/135	Pass	

<b>Precondition Prior Perform Reliability Tests (At MSL Level 1)</b>	<b>Electrical Test</b> :+25°C,85°C and -40°C System: J750	JESD22- A113	693(0)	693	Pass	Good Devices
	Bake 150°C, 24 hrs System: CHINEE			693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			693		
	<b>Electrical Test</b> :+25°C and 85°C System: J750			0/693		

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>Temp Cycle</b>	<b>Stress Condition:</b> -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H	JESD22-A104		231		Parts had been pre-conditioned at 260°C 77 units / lot
	<b>Electrical Test:</b> + 85°C System: J750		231(0)	0/231	Pass	
	<b>Bond Strength:</b> Wire Pull (> 2.5 grams) Bond Shear (15.00 grams)		15 (0)	0/15	Pass	
<b>UNBIASED-HAST</b>	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		Parts had been pre-conditioned at 260°C 77 units / lot
	<b>Electrical Test:</b> +25°C System: J750		231(0)	0/231	Pass	
<b>HAST</b>	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. <b>Bias Volt:</b> 3.6 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C 77 units / lot
	<b>Electrical Test:</b> +25°C and 85°C System: J750		231(0)	0/231	Pass	
<b>High Temperature Storage Life</b>	<b>Stress Condition:</b> Bake 175°C, 504 hrs System: SHEL LAB	JESD22-A103		45		45 units Verify by FA
	<b>Electrical Test</b> :+25°C and 85°C System: J750		45(0)	0/45	Pass	

## PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>Solderability</b> <b>Temp 215°C</b>	<b>Steam Aging:</b> Temp 93°C,8Hrs System: SAS-3000 Solder Dipping: Solder Temp.215°C Solder material: SnPb Sn63,Pb37 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	JESD22B-102E	22 (0)	22  22 0/22	Pass	
<b>Solderability</b> <b>Temp 245°C</b>	<b>Steam Aging:</b> Temp 93°C,8Hrs System: SAS-3000 Solder Dipping:Solder Temp.245°C Solder material:Pb Free Sn 95.5Ag3.9 Cu0.6 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	JESD22B-102E	22 (0)	22  22 0/22	Pass	
<b>Bond Strength</b> <b>Data Assembly</b>	Wire Pull (> 2.5 grams)  Bond Shear (15.00 grams)	M2011  JESD22-B116	30 (0) Wires  30 (0) bonds	0/30  0/30	Pass  Pass	