



**Date:** 24 Apr 2012

**Product Category:** 16-bit Microcontrollers and Digital Signal Controllers; Analog (Linear & Mixed Signal) AND Interface; 8-bit Microcontrollers; 32-bit PIC Microcontrollers

**Device Family:**  

**Notification subject:** CCB 1151 Initial Notice: Qualify 44L QFN (8x8) with bare copper (Cu) lead-frame at NSEB assembly site.

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

Microchip Parts Affected:  
See attachments of affected catalog part numbers (CPN) labeled as...  
PCN\_CYER-19QIHB341\_Affected\_CPN.xls  
PCN\_CYER-19QIHB341\_Affected\_CPN.pdf

Description of Change:  
Qualify 44L QFN (8x8) with bare copper (Cu) lead-frame at NSEB assembly site.

Pre Change:  
Ag triple ring plating on lead-frame

Post Change:  
Bare copper (Cu) lead-frame (no plating)

Impacts to Data Sheet:  
None

Reason for Change:  
To improve manufacturability

Change Implementation Status:  
In Progress

Estimated First Ship Date:  
June 30, 2012 (date code: 1226)

**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:  
April 24, 2012: 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\\_CYER-19QIHB341\\_Affected\\_CPN.xls](#) [PCN\\_CYER-19QIHB341\\_Affected\\_CPN.pdf](#) [PCN\\_CYER-19QIHB341\\_Qual Plan.pdf](#)

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## Product Change Notification - CYER-19QIHB341

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Parts Affected

dsPIC30F2023  
dsPIC30F3010  
dsPIC30F3011  
dsPIC30F3012  
dsPIC30F3013  
dsPIC30F3014  
dsPIC30F4011  
dsPIC30F4012  
dsPIC30F4013  
dsPIC33EP64GP504  
dsPIC33EP64MC204  
dsPIC33EP64MC504  
dsPIC33FJ128GP204  
dsPIC33FJ128GP804  
dsPIC33FJ128MC204  
dsPIC33FJ128MC804  
dsPIC33FJ16GP304  
dsPIC33FJ16GS404  
dsPIC33FJ16GS504  
dsPIC33FJ16MC304  
dsPIC33FJ32GP204  
dsPIC33FJ32GP304  
dsPIC33FJ32MC204  
dsPIC33FJ32MC304  
dsPIC33FJ64GP204  
dsPIC33FJ64GP804  
dsPIC33FJ64MC204  
dsPIC33FJ64MC804  
ENC424J600  
PIC16F914  
PIC18F44K20  
PIC18F46K20  
PIC16F1934  
PIC16F1937  
PIC16F1939  
PIC16F707  
PIC16F724  
PIC16F727  
PIC16F747  
PIC16F777  
PIC16F77  
PIC16F874A  
PIC16F877A

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PIC16F887  
PIC16F917  
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PIC18F4221  
PIC18F4320  
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PIC18F4331  
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PIC24FJ32GB004  
PIC24FJ48GA004  
PIC24FJ64GA004  
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PIC32MX130F064D  
PIC32MX150F128D  
PIC32MX210F016D  
PIC32MX220F032D  
PIC32MX230F064D  
PIC32MX250F128D

PCN_CYER-19QIHB341
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DSPIC30F2023-30I/ML
DSPIC30F2023T-20E/ML
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DSPIC30F3011T-20E/MLV02
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PIC24FJ32GA004T-I/ML
PIC24FJ32GA104-E/ML
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PIC24FJ32GB004T-I/ML
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PIC24FV32KA304-I/ML

PIC24FV32KA304T-I/ML
PIC24HJ128GP204-E/ML
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PIC32MX210F016D-V/ML
PIC32MX220F032D-I/ML
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PIC32MX230F064D-I/ML
PIC32MX230F064DT-I/ML
PIC32MX230F064DT-V/ML
PIC32MX230F064D-V/ML
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PIC32MX250F128DT-I/ML
PIC32MX250F128DT-V/ML
PIC32MX250F128D-V/ML





**MICROCHIP**

## **QUALIFICATION PLAN**

**PCN #: CYER-19QIHB341**

**Date:  
April 19, 2012**

**Qualify 44L QFN (8x8) with bare copper (Cu) lead-frame at  
NSEB assembly site.**

**Distribution**

Surasit P.  
Wanphen L.  
Wichai K.  
Chaweng W.

Rangsun K.  
A. Navarro  
R. Sharma

Microchip Technology ( Thailand ) Co.,Ltd.  
14 Moo 1 T.Wangtakien A. Muangchacherngsao,  
Chacherngsao, Thailand,24000  
Tel. (6638) 857119-45, 857311-19 ext. 1231  
Fax (6638) 857149-50

**Purpose:** \_\_\_\_\_ Qualify 44L QFN (8x8) with bare copper (Cu) lead-frame at NSEB assembly site.  
**MP code:** \_\_\_\_\_ LEAE14T3XB04  
**Part No.:** \_\_\_\_\_ PIC16F727-E/ML  
**BD No:** \_\_\_\_\_ BDM-000203 rev. A  
**CCB No:** \_\_\_\_\_ 1151

**Package:**

**Type** \_\_\_\_\_ 44L QFN  
**Width or Size** \_\_\_\_\_ 8x8x0.9mm  
**Die thickness:** \_\_\_\_\_ 11 mils  
**Die size:** \_\_\_\_\_ 77.90 x 85.00 mils

**Lead frame:**

**Paddle size:** \_\_\_\_\_ 272 x 272 mils  
**Material** \_\_\_\_\_ C194  
**Surface** \_\_\_\_\_ Bare Copper (Cu) on paddle  
**Process** \_\_\_\_\_ Etched  
**Lead Lock** \_\_\_\_\_ Yes  
**Part Number** \_\_\_\_\_ FR0227

**Wire:**

**Material** \_\_\_\_\_ Au wire /Tanaka (Malaysia)

**Die Attach Epoxy:**

**Part Number** \_\_\_\_\_ 8200T / Henkel (Ablestik)\_ (USA)  
**Conductive** \_\_\_\_\_ Yes

**Mold Compound:** \_\_\_\_\_ G770HCD/ Sumitomo (Singapore)

**Reliability Test plan:** \_\_\_\_\_ See attached, STD Package Reliability Test plan on each package.

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. Mil. Std. 883-2011	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.
Wire Bond Pull - WBP	Mil. Std. 883-2011	5	0	1	5	0 fails after TC	5	30 bonds from a minimum of 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	1	5	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 +25C and +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 Jeduc-STD-020 for package type; Electrical test pre and post stress at +25°C. Perform SAM analysis using the standard sample size. MSL-1 @ 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.
HAST	+130°C/85% RH for 96 hours. Electrical test pre and post stress at +25°C and hot temp. 1 lot will be tested at 85 and 125C	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	77	5	3	246	0	10	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fall Accept Qty	Est. Dur. Days	Special Instructions
Temp Cycle	<p>-65°C to +150°C for 500 cycles.            Electrical test pre and post stress at hot temp; 3 gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress.            1 lot will be tested at 85 and 125C</p>	77	5	3	246	0	15	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.