

Product Change Notification - CYER-19QIHB341

Date:	04 Jun 2013
Product Category:	8-bit Microcontrollers; 16-bit Microcontrollers and Digital Signal Controllers; 32-bit PIC Microcontrollers; Analog (Linear & Mixed Signal) AND Interface
Affected CPNs:	
Notification subject:	CCB 1151 Final Notice: Qualify 44L QFN (8x8) with bare copper (Cu) lead-frame at NSEB assembly site.

Notification text:

PCN Status:
Final 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, 2013 (date code: 1313)

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.
June 4, 2013: Issued the final notifications. Attached the qualification report. Revised the estimated first ship date from 6/30/2012 to 6/30/2013.

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_Qual_Report.pdf](#) [PCN_CYER-19QIHB341_Affected_CPN.pdf](#)
[PCN_CYER-19QIHB341_Affected_CPN.xls](#)

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PCN_CYER-19QIHB341
CATALOG_PART_NBR
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DSPIC30F2023-30I/ML
DSPIC30F2023T-20E/ML
DSPIC30F2023T-30I/ML
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QUALIFICATION REPORT RELIABILITY LABORATORY

PCN #: CYER-19QIHB341

Date
May 28, 2013

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

Distribution

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MICROCHIP PACKAGE QUALIFICATION REPORT

Purpose	Qualify 44L QFN (8x8) with bare copper (Cu) lead-frame at NSEB assembly site.
CN	BC130385
QUAL ID	Q13050
MP CODE	LEAE14T3XB04
Part No.	PIC16F727-E/ML
Bonding No.	BDE-000203 Rev. A (Engineering bonding)
CCB No.	1151
<u>Package</u>	
Type	44L QFN
Package size	8x8x0.9 mm
Die thickness	11 mils
Die size	77.9 x 85.0 mils
<u>Lead Frame</u>	
Paddle size	272 x 272 mils
Material	C194
Surface	Bare Copper (Cu) on paddle
Process	Etched
Lead Lock	Yes
Part Number	FR0227
<u>Die attach material</u>	
Epoxy	8200T / Henkel (USA)
Wire	Au wire / Tanaka (Malaysia)
Mold Compound	G770HCD / Sumitomo (Japan)
Plating Composition	Matte Tin



MICROCHIP PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Trace Code
NSEB135100023	GRSM413372326.200	13129T5
NSEB135100024	GRSM413372326.200	13129T6
NSEB135000985	GRSM413372326.200	13119SW

Result

Pass Fail _____

44L QFN (8x8x0.9 mm) 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: May 28, 2013 (Reliability Engineer)

(Mr. Udom Suksansakul)

Approved By: _____ Date: May 28, 2013 (Reliability Manager)

(Mr. Somnuek Thongprasert)

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Moisture/Reflow Sensitivity Classification Test (At MSL Level 1)	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	

Precondition Prior Perform Reliability Tests (At MSL Level 1)	Electrical Test :+25°C and 125°C System: J750	JESD22-A113	693(0)	693		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		
	Electrical Test :+25°C and 125°C System: J750			0/693	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Temp Cycle	Stress Condition: -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H Inspection: External crack inspection all units under 40X Optical magnification	JESD22- A104		231		Parts had been pre-conditioned at 260°C
	Electrical Test: + 125°C System: J750		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (> 2.5 grams) Bond Shear (15.00 grams)		15 (0) 15 (0)	0/15 0/15	Pass Pass	
UNBIASED-HAST	Stress Condition: +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22- A118		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: J750		231(0)	0/231	Pass	77 units / lot
HAST	Stress Condition: +130°C/85%RH, 96 hrs. Bias Volt: 3.6 Volts System: HAST 6000X	JESD22- A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C and 125°C System: J750		231(0)	0/231	Pass	77 units / lot
High Temperature Storage Life	Stress Condition: Bake 175°C, 504 hrs System: SHEL LAB	JESD22- A103		45		45 units
	Electrical Test :+25°C and 125°C System: J750		45(0)	0/45	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Solderability Temp 245°C	Steam Aging: Temp 93°C,8Hrs System: SAS-3000	JESD22B- 102E	22 (0)	22	Pass	
	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			22 0/22		
Bond Strength Data Assembly	Wire Pull (> 2.5 grams)	JESD22 -B116	30 (0) Wires	0/30	Pass	
	Bond Shear (15.00 grams)			30 (0) bonds	0/30	