

# Product Change Notification - CYER-27RNNT411

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<b>Date:</b>	22 May 2013
<b>Product Category:</b>	8-bit Microcontrollers
<b>Affected CPNs:</b>	
<b>Notification subject:</b>	CCB 1155.02 Final Notification: Qualification of selected products available in the 44L TQFP package with palladium coated copper (PdCu) wire at MTAI assembly site.

**Notification text:**

PCN Status:  
Final notification

Microchip Parts Affected:  
See attachments of affected catalog part numbers (CPN) labeled as...  
PCN\_CYER-27RNNT411\_Affected\_CPN.xls  
PCN\_CYER-27RNNT411\_Affected\_CPN.pdf

Description of Change:  
Qualification of selected products available in the 44L TQFP package with palladium coated copper (PdCu) wire at MTAI assembly site.

NOTE: Selected products are non-automotive standalone PIC MCU devices. Please review the affected CPN lists (attached) to identify the actual parts affected.

Pre Change:  
Gold (Au) wire

Post Change:  
Palladium coated copper (PdCu) wire

Impacts to Data Sheet:  
None

Reason for Change:  
To improve manufacturability

Change Implementation Status:  
Complete

Estimated First Ship Dates:  
June 7, 2013 (Date code: 1310)

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:  
October 24, 2012 – Final notification issue date.

May 22, 2013: Revised PCN to include revised qualification report, revised the parts affected list, and revised the estimated first ship date from 1/24/2013 to 6/7/2013.

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

**Attachment(s):**

[Affected parts list.pdf](#) [PCN\\_CYER-27RNNT411\\_Qual Report.pdf](#) [Affected parts list.xls](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

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PCN_CYER-27RNNT411
CATALOG_PART_NBR
DSPIC30F2023-20E/PT
DSPIC30F2023-30I/PT
DSPIC30F2023T-30I/PT
DSPIC30F3011-10E/PTB23
DSPIC30F3011-20E/PT
DSPIC30F3011-20I/PT
DSPIC30F3011-30I/PT
DSPIC30F3011T-10E/PTB23
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DSPIC30F3014-20E/PT
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## QUALIFICATION REPORT RELIABILITY LABORATORY

**PCN#: CYER-27RNNT411**

Date  
May 10, 2013

Qualification of selected products available in the 44L TQFP package with palladium coated copper (PdCu) wire at MTAI assembly site.

### Distribution

Somnuek T.  
Wanphen L.  
Wichai K.  
Payungsak W.

Rangsun K.  
A. Navarro  
J. Fernandez  
S. Kelsall  
S. Melby



## MICROCHIP PACKAGE QUALIFICATION REPORT

<b>Purpose</b>	Qualification of selected products available in the 44L TQFP package with palladium coated copper (PdCu) wire at MTAI assembly site.
<b>CN</b>	BC130366
<b>QUAL ID</b>	Q13029
<b>MP CODE</b>	A5AF17T4XI20
<b>Part No.</b>	PIC16F877-20I/PT
<b>Bonding No.</b>	A-030925 Rev. J
<b><u>Package</u></b>	
<b>Type</b>	44L TQFP
<b>Package size</b>	10x10x1 mm
<b>Die thickness</b>	11 mils
<b>Die size</b>	179.20 x 199.60 mils
<b><u>Lead Frame</u></b>	
<b>Paddle size</b>	275 x 275 mils
<b>Material</b>	C7025
<b>Surface</b>	Bare copper paddle with brown oxide treated
<b>Process</b>	Stamp
<b>Lead Lock</b>	No
<b>Part Number</b>	10104401
<b><u>Die attach material</u></b>	
<b>Epoxy</b>	3280
<b>Wire</b>	PdCu
<b>Mold Compound</b>	G700HA
<b>Plating Composition</b>	Matte Tin



# MICROCHIP PACKAGE QUALIFICATION REPORT

## Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Trace Code
MTAI134803175	TMPE213384930.240	1309SHR
MTAI134803176	TMPE213384930.250	1309SHS
MTAI134803177	TMPE213384930.200	1309SHT

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

44L TQFP (10x10x1 mm) assembled by MTAI 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: *Thinnapol* Date: May 10, 2013 (Reliability Engineer)

(Mr.Thinnapol Nakkasun)

Approved By: *Somnuek* Date: May 10, 2013 (Reliability Manager)

(Mr. Somnuek Thongprasert)



# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Date in	Date Out	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 J-STD- 020D	135	03/11/13	03/21/13	0/135	Pass	

<b><u>Precondition Prior Perform Reliability Tests</u></b> (At MSL Level 1)	Electrical Test :+25°C and 85°C System: J750	JESD22- A113	693(0)	03/08/13	08/08/13	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE			03/11/13	03/12/13	693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			03/12/13	03/20/13	693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			03/20/13	03/20/13	693		
	Electrical Test :+25°C and 85°C System: J750			03/20/13	03/21/13	0/693		

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Date in	Date Out	Def/SS.	Result	Remarks
<b>Temp Cycle</b>	<b>Stress Condition:</b> -65°C to +150°C, 50 Cycles System : TABAI ESPEC TSA-70H Inspection: External crack inspection all units under 40X Optical magnification  <b>Electrical Test: + 85°C</b> System: J750	JESD22- A104	30(0) 231(0)	03/21/13 03/22/13 03/22/13	03/22/13 03/22/13 03/23/13	231 0/30 0/231	Pass	Parts had been pre-conditioned at 260°C
	<b>Stress Condition:</b> -65°C to +150°C, 250 Cycles System : TABAI ESPEC TSA-70H Inspection: External crack inspection all units under 40X Optical magnification  <b>Electrical Test: + 85°C</b> System: J750	JESD22- A104	30(0) 231(0)	03/23/13 03/27/13 03/27/13	03/27/13 03/27/13 03/28/13	231 0/30 0/231	Pass	
	<b>Stress Condition:</b> -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H Inspection: External crack inspection all units under 40X Optical magnification  <b>Electrical Test: + 85°C</b> System: J750	JESD22- A104	30(0) 231(0)	03/28/13 04/02/13 04/02/13	04/02/13 04/02/13 04/04/13	231 0/30 0/231	Pass	
	<b>Stress Condition:</b> -65°C to +150°C, 1000 Cycles System : TABAI ESPEC TSA-70H Inspection: External crack inspection all units under 40X Optical magnification  <b>Electrical Test: + 85°C</b> System: J750	JESD22- A104	30(0) 231(0)	04/04/13 04/17/13 04/17/13	04/17/13 04/17/13 04/18/13	231 0/30 0/231	Pass	

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Date in	Date Out	Def/SS.	Result	Remarks
<b>UNBIASED-HAST</b>	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22- A118		03/22/13	03/26/13	231		Parts had been pre-conditioned at 260°C
	<b>Electrical Test:</b> +25°C System: J750		231(0)	03/26/13	03/27/13	0/231	Pass	
	<b>Stress Condition:</b> +130°C/85%RH, 192 hrs. System: HAST 6000X	JESD22- A118		03/27/13	03/31/13	231		
	<b>Electrical Test:</b> +25°C System: J750		231(0)	03/31/13	04/01/13	0/231	Pass	
	<b>Stress Condition:</b> +130°C/85%RH, 288 hrs. System: HAST 6000X	JESD22- A118		04/01/13	04/06/13	231		
	<b>Electrical Test:</b> +25°C System: J750		231(0)	04/06/13	04/07/13	0/231	Pass	

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Date in	Date Out	Def/SS.	Result	Remarks
<b>HAST</b>	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. <b>Bias Volt:</b> 5.5 Volts System: HAST 6000X	JESD22-A110		03/23/13	03/27/13	231		Parts had been pre-conditioned at 260°C
	<b>Electrical Test:</b> +25°C and 85°C System: J750		231(0)	03/27/13	03/28/13	0/231	Pass	
	<b>Stress Condition:</b> +130°C/85%RH, 192 hrs. <b>Bias Volt:</b> 5.5 Volts System: HAST 6000X	JESD22-A110		03/28/13	04/02/13	231		
	<b>Electrical Test:</b> +25°C and 85°C System: J750		231(0)	04/02/13	04/04/13	0/231	Pass	
	<b>Stress Condition:</b> +130°C/85%RH, 288 hrs. <b>Bias Volt:</b> 5.5 Volts System: HAST 6000X	JESD22-A110		04/05/13	04/09/13	231		
	<b>Electrical Test:</b> +25°C and 85°C System: J750		231(0)	04/09/13	04/10/13	0/231	Pass	

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Date in	Date Out	Def/SS.	Result	Remarks
<b>High Temperature Storage Life</b>	<b>Stress Condition:</b> Bake 175°C, 504 hrs System: SHEL LAB  <b>Electrical Test: +25°C</b> System: J750	JESD22-A103		03/09/13	04/01/13	45		45 units
			45(0)	04/01/13	04/02/13	0/45	Pass	
<b>Bond Strength Data Assembly</b>	Wire Pull (> 2.5 grams)	JESD22-B116	30 (0) Wires	-	-	0/30	Pass	
	Bond Shear (13.00 grams)		30 (0) bonds	-	-	0/30	Pass	